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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
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October 28, 2015

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OFC. OF ENVIRONMENTAL QUALITY CONTROL

TO: THE HONORABLE JESSICA WOOLEY, DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
DEPARTMENT OF HEALTH

FROM: FORD N. FUCHIGAMI, DIRECTOR
DEPARTMENT OF TRANSPORTATION

SUBJECT: KAUAI PETROLEUM DRAFT ENVIRONMENTAL ASSESSMENT, NAWILIWILI HARBOR, KAUAI, TMK: (4) 3-2-004:016

The Department of Transportation (DOT) hereby transmits the Draft *Kauai Petroleum Fuel Terminal Environmental Assessment* (DEA) for publication of a notice of availability in the next edition of *The Environmental Notice.* The DOT anticipates a Finding of No Significant Impact (DEA-AFONSI) under Chapter 343, HRS

We have enclosed the following items:

1. Two hard copies of the DEA-AFONSI.
2. Hard copy of the publication form.
3. Compact disc containing the DEA-AFONSI in PDF format and the publication form in Word format.

Simultaneous with this memorandum, we have submitted the summary of the action in a text file by electronic mail to your office.

If there are any questions, please have your staff contact Ms. Sandra Rossetter of our Harbors Engineering Planning Section at 587-1886.

Enclosures

c: DEP-H, HAR, HAR-S, -PM, -K, -E, -EP

APPLICANT ACTION
SECTION 343-5(e), HRS
PUBLICATION FORM

Kauai Petroleum Fuel Terminal (HRS 343 DEA-AFONSI)

HRS §343-5 Trigger(s): **HRS §343-5 Trigger(s):** Propose the use of state lands for possible future projects that the agency has not approved, adopted, or funded

Island: Kauaʻi

District: Līhuʻe

TMK: (4) 3-2-004:016

Permits: SMA, Building, Grading

Approving Agency:
DOT Harbors Division
79 South Nimitz Highway
Honolulu, Hawaiʻi 96813

Contact: Dean Watase
808-587-1883

Applicant:
Kauai Petroleum Company, Ltd.
3185 Waʻapā Road
Nāwiliwili, Kauaʻi 96766

Contact: Russell Whang
808-535-5941

Consultant:
Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, Hawaiʻi 96734

Contact: Howard West
808-261-0740

Status (check one only):

√_DEA-AFNSI	Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of DEA, a completed OEQC publication form, along with an electronic word processing summary and a PDF copy (you may send both summary and PDF to oeqchawaii@doh.hawaii.gov; a 30-day comment period ensues upon publication in the periodic bulletin.
__FEA-FONSI	Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and a PDF copy (send both summary and PDF to oeqchawaii@doh.hawaii.gov; no comment period ensues upon publication in the periodic bulletin.
__FEA-EISPN	Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and PDF copy (you may send both summary and PDF to oeqchawaii@doh.hawaii.gov; a 30-day consultation period ensues upon publication in the periodic bulletin.

__Act 172-12 EISPN	Submit the approving agency notice of determination on agency letterhead, an OEQC publication form, and an electronic word processing summary (you may send the summary to oeqchawaii@doh.hawaii.gov. NO environmental assessment is required and a 30-day consultation period upon publication in the periodic bulletin.
__DEIS	The applicant simultaneously transmits to both the OEQC and the approving agency, a hard copy of the DEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the DEIS (you may send both the summary and PDF to oeqc@doh.hawaii.gov); a 45-day comment period ensues upon publication in the periodic bulletin.
__FEIS	The applicant simultaneously transmits to both the OEQC and the approving agency, a hard copy of the FEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the FEIS (you may send both the summary and PDF to oeqc@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.
__ Section 11-200-23 Determination	The approving agency simultaneous transmits its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS to both OEQC and the applicant. No comment period ensues upon publication in the periodic bulletin.
__Statutory hammer Acceptance	The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it failed to timely make a determination on the acceptance or nonacceptance of the applicant's FEIS under Section 343-5(c), HRS, and that the applicant's FEIS is deemed accepted as a matter of law.
__Section 11-200-27 Determination	The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is not required. No EA is required and no comment period ensues upon publication in the periodic bulletin.
__Withdrawal (explain)	

Summary (Provide proposed action and purpose/need in less than 200 words. Please keep the summary brief and on this one page)**:**

The Kauai Petroleum bulk fuel terminal occupies 1.3154 acres of land owned by the DOT Harbors Division. It is located 225 feet north of Pier 2 at Nāwiliwili Harbor. The Terminal consists of an office/warehouse building, a fuel loading area, and a tank yard within which there are ten above-ground storage tanks used to store gasoline, jet fuel, diesel fuel, and ethanol. The tank yard is provided with secondary containment.

Proposed improvements to the terminal include the construction of two new tanks. One of the tanks will be used to store jet fuel and the other to store either diesel fuel or naphtha. The additional storage capacity is necessary to meet the current and future fuel needs of Kauaʻi customers, such as the Līhuʻe Airport.

Part of the terminal lies within the Special Management Area. However, no significant short- or long-term environmental impacts associated with the operation of the terminal or the construction of the planned improvements are anticipated. It has been determined that there are no historical or cultural sites at or in the immediate area. The operation of the terminal and the proposed improvements do not meet any of the thirteen significance criteria established by the State under HRS 343.

Draft
ENVIRONMENTAL ASSESSMENT

Kauai Petroleum Fuel Terminal
3185 Waapa Road
Nawiliwili, Kauai

TMK No. (4) 3-2-004:016

Environmental Science International
354 Uluniu Street, Suite 304
Kailua, Hawaii 96734
(808) 261-0740 phone / (808) 261-0749 fax

The cover photograph shows the Kauai Petroleum Terminal tank yard, facing south. One of the planned future fuel storage tanks will be constructed in the open area on the right. A concrete containment wall will be constructed around the tank and an impermeable liner will be installed on the ground surrounding the tank. The other future fuel storage tank will be constructed in the area between the two nearest tanks on the left, inside the current tank yard.

Draft
ENVIRONMENTAL ASSESSMENT

Kauai Petroleum Fuel Terminal
3185 Waapa Road
Nawiliwili, Kauai

TMK No. (4) 3-2-004:016

Prepared for:

Kauai Petroleum Company, Ltd.
3185 Waapa Road
Nawiliwili, Kauai 96766

Prepared by:

Environmental Science International
354 Uluniu Street, Suite 304
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Project No. 115043

October 23, 2015

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LIST OF ACRONYMS AND ABBREVIATIONS

Acronym	Definition
amsl	above mean sea level
API	American Petroleum Institute
AST	Above-Ground Storage Tank
bbl	barrels
Belt Collins	Belt Collins Hawaii
bgs	below ground surface
BMP	Best Management Practice
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
CAB	Clean Air Branch
CAS	Chemical Abstracts Service
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CSH	Cultural Surveys Hawai‘i, Inc.
CSP	Covered Source Permit
CWB	Clean Water Branch
DAGS	Department of Accounting and General Services, State of Hawaii
dBA	decibel
DLNR	Department of Land and Natural Resources, State of Hawaii
DOH	Department of Health, State of Hawaii
DOT	Department of Transportation, State of Hawaii
EA	Environmental Assessment
EAL	Environmental Action Level
EE	Element Environmental LLC
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ERL	Hawaii Environmental Response Law
ESI	Environmental Science International, Inc.
°F	degrees Fahrenheit
FONSI	Finding of No Significant Impact
Gasco	Gasco Inc.
EKH	Ernest K. Hirata & Associates, Inc.
HAP	Hazardous Air Pollutant
HAR	Hawaii Administrative Rules
HEER	Hazard Evaluation and Emergency Response
HEPCRA	Hawaii Emergency Planning and Community Right-to-Know Act
HRO	Hawaii Revised Ordinances
HRS	Hawaii Revised Statutes
µg/m³	micrograms per cubic meter
MPP	Mid Pac Petroleum
MTBE	Methyl-Tert Butyl Ether

Acronym	Definition
NAQS	National Air Quality Standards
NEPA	National Environmental Policy Act
NKN	NKN Project Planning
NO_x	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
O'Brien's	O'Brien's Response Management Inc.
OEQC	Office of Environmental Quality Control, State of Hawaii
OHA	Office of Hawaiian Affairs
Okubo	Arnold Okubo & Associates, Inc.
OSHA	Occupational Safety and Health Administration
PAH	Polycyclic Aromatic Hydrocarbon
PID	Photo-Ionization Detector
PM_{10}	Particulate Matter <10 microns in diameter
$PM_{2.5}$	Particulate Matter <2.5 microns in diameter
ppm	parts per million
SAAQS	State Ambient Air Quality Standards
SCP	State Contingency Plan
SDS	Safety Data Sheet
SHPD	State Historic Preservation Division
SIC	Standard Industrial Classification
SLUC	State Land Use Commission
SMA	Special Management Area
SO_x	Sulfur Oxides
SPCC	Spill Prevention Control and Countermeasure
SWPC	Storm Water Pollution Control
TMK	Tax Map Key
Towill	R.M. Towill Corporation
TPH-d	Total Petroleum Hydrocarbons as diesel fuel
TPH-g	Total Petroleum Hydrocarbons as gasoline
TTLR	Tanker Truck Loading Rack
UH	University of Hawaii
UIC	Underground Injection Control
ULSD	Ultra-Low Sulfur Diesel
USCG	United States Coast Guard
USGS	United States Geological Survey
VOC	Volatile Organic Compound
VTN	VTN Pacific

EXECUTIVE SUMMARY

This EA was prepared on behalf of Kauai Petroleum for the Kauai Petroleum Fuel Terminal. The Terminal is located at Nawiliwili Harbor, on land owned by the State of Hawaii and identified as TMK No. (4) 3-2-004:016. This assessment was undertaken to determine if potential environmental impacts associated with the operation of the Terminal and with planned future construction at the Terminal are significant enough to warrant an EIS. The assessment was conducted in accordance with the requirements of the Hawaii EIS Law (HRS 343 and in HAR 11-200).

The applicant for construction of the Terminal is Kauai Petroleum, which is owned by PAR Petroleum. The agency most directly involved in the proposed activity is the DOT Harbors Division, which manages and controls the land through executive orders. Therefore, DOT will be the approving agency. Several EAs and EISs have been prepared for projects in the Nawiliwili Harbor area. Although these reports address projects of different scope and intent, they each address potential impacts to the environment. Some focus primarily on potential impacts to marine flora and fauna, while others focus on potential social and economic impacts. Information and determinations from these reports regarding sensitive ecological receptors and environmental conditions that are relevant to the Kauai Petroleum Terminal project are incorporated by reference, in whole or in part, in this EA.

Other than recent improvements, no significant changes have occurred at the Terminal since 1989, when the last of the current large ASTs was constructed. The only significant change in the immediate area has been the removal of the molasses tanks on the adjacent property. Based on the results of past EAs and EISs and the lack of a change in the type of operations conducted at the Terminal since its construction (sometime in the 1930s or early 1940s), it is anticipated that this EA will result in a FONSI and that an EIS will not be required.

General Description

The Terminal occupies 1.3154 acres of land, approximately 225 feet north of Pier 2, and it lies within the SMA. The Terminal's primary function is to store and distribute gasoline, jet fuel, and diesel fuel. Ethanol also is stored at the Terminal. In the future, the Terminal potentially could store and distribute naphtha. The fuel is shipped to Nawiliwili Harbor by barge and is transferred to the Terminal via three underground cargo lines that run from Pier 2 to the Terminal.

The Terminal consists of an office/warehouse building, a fuel loading area (which includes the TTLR), and a tank yard. Located in the tank yard are ten ASTs used to store regular 87 and 92 octane unleaded gasoline, jet fuel, and diesel fuel. Six of the ASTs are portable tanks. As part of the planned improvements to the Terminal, two additional ASTs will be constructed in the tank yard. One will be used to store jet fuel, and the other will be used to store either diesel fuel or naphtha.

The tank yard is surrounded by a concrete containment wall, and the floor of the main portion of the tank yard, the one that contains the four large ASTs, is lined with an impermeable liner. The portion of the tank yard that contains the portable ASTs has a concrete floor. In conjunction with

the installation of the two additional ASTs, the containment wall will be expanded and additional liner will be installed. The concrete containment walls and the liner provide secondary containment for the tank yard.

Access to the Terminal is provided by two gates. The entrance gate is located at the southeast corner of the Terminal, at the corner of Kanoa Street and Waapa Road. The exit gate is located on the south side of the Terminal, along Waapa Road. The Terminal off-loads fuel from barges at Pier 2. From the dock hook-ups, the fuel is pumped to the Terminal through the underground cargo lines. The fuel is pumped from the ASTs to the TTLR for the loading of tanker trucks.

North of the office and warehouse building, along the west side of the Terminal, are a generator and a flare. The flare is used to combust vapors generated during fuel loading at the TTLR in order to mitigate potential emissions. It was installed as part of recent Terminal improvements and associated modifications to the facility's air permit.

Operational Procedures, Training, and Inspections

Fuel for off-loading to the Terminal is transported by delivery barges to Pier 2. Typically, the Terminal receives two to three barge deliveries each week. Each week, one barge delivery is for jet fuel and diesel fuel and the second barge delivery is for gasoline, ethanol, diesel fuel, and jet fuel. It is anticipated that, following construction of the two planned ASTs, the number of barge deliveries will be reduced to one every ten days. Loading and transfer operations are supervised closely by Terminal personnel. The loading and transferring procedures follow the requirements set forth by the DOT and the USCG.

Typically, 19 to 23 tanker trucks are loaded each day. Twelve of the trucks are operated by Senter Petroleum, which supplies fuel to commercial, farming, and industrial users. Four to eight trucks are used to transport jet fuel to the Lihue Airport. Three or more of the trucks are operated by Aloha Petroleum. Twice monthly, Aloha Petroleum has six to eight additional trucks loaded for 87 and 92 octane gasoline. It is not anticipated that the number of trucks loaded will change following construction of the two planned ASTs.

Storm water controls have been engineered at each principal area in the Terminal to prevent a discharge of storm water runoff from the Terminal. The tank yard secondary containment has a capacity sufficient to contain the contents of the largest AST and an additional 10 percent or greater capacity for accommodating rainfall. There is a sump with an attached valve that is connected to the tank yard. If the tank yard becomes filled with water following a storm event, the water in the tank yard is inspected for evidence of petroleum contamination. Once it has been determined that contamination is not present, the valve is opened and storm water is released from the tank yard. The TTLR is partially covered by a canopy and is surrounded by a curb. Inside the curbed area is a drain that leads to a sump. If the sump becomes filled with water following a storm event, the water in the sump is inspected for evidence of petroleum contamination. Once it has been determined that contamination is not present, the water is pumped out of the sump and allowed to infiltrate on-site.

Terminal personnel are trained in the proper use, operation, and maintenance of equipment and materials used at the Terminal. These personnel also are trained to prevent and respond to spills of petroleum fuels and other materials used and stored at the Terminal.

The ASTs, piping, valves, machinery, and other equipment at the Terminal are inspected on a regular basis to ensure proper functioning. The Terminal has an SPCC Plan, in accordance with EPA regulations, and SPCC requirements include inspections. General site inspections are performed monthly and are documented. Formal storage tank and valve leak testing are performed as required.

Petroleum Products and Hazardous Materials Stored at the Terminal

The principal petroleum products stored and distributed at the Terminal are gasoline, diesel fuel, and jet fuel. In addition to these petroleum products, ethanol, fuel additives, and lubricating oil are stored and used at the Terminal. The procedures for handling the petroleum products and hazardous materials that are stored and used at the Terminal have been implemented to reduce the potential for risks to human health and the environment. The potential for environmental impacts is not anticipated to be significant. The potential for human health impacts is mitigated by best management practices and training.

Property Information

The Terminal is approximately 0.5 miles southeast of and below the UIC line, at a surface elevation of approximately 8 feet amsl. Topographic relief across the property is low. The nearest surface water body is Nawiliwili Harbor, approximately 225 feet to the south. Nawiliwili Harbor is a modern construction and the pier areas occupy fill land constructed on spoil dredged from the harbor. The former north coastline of Nawiliwili Bay crossed what is now the north boundary of the Terminal property and extended northeast to what is now the northwest corner of Kalapaki Beach. In conjunction with the construction of the Pier 0 jetty in 1930, the area of Piers 1 and 2, including the land upon which the Terminal resides, was backfilled and developed into harbor facilities.

The Terminal is under environmental oversight by the DOH HEER Office. Environmental investigations currently are being conducted in response to the discovery of a release at the Terminal in 2011 during an initial environmental assessment. The release response actions conducted thus far have included soil and groundwater sampling, the installation of groundwater monitoring wells, and performing an environmental hazard evaluation.

Existing Environmental Conditions at the Property

Based on the results of environmental investigations conducted at the Terminal, there is subsurface soil and groundwater contamination across the property that likely resulted from historical releases of petroleum products stored at the Terminal. There is insufficient information available to determine the ages of the releases, but it is unlikely that the releases are recent. Free-phase petroleum product has not been detected on groundwater at the property. The presence of naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene at concentrations above DOH EALs likely poses the most significant human health and environmental risk. The results and conclusions from the principal investigation conducted thus far (i.e., in 2012) have

not been evaluated by the DOH because only the draft report has been submitted to the DOH HEER Office. Based on information provided by the DOH, groundwater monitoring is ongoing.

Environmental Policies, Plans, Permits, and Controls

The operation of the Terminal is in compliance with required government and community plans, permits, policies, and controls. These include the following.

- Environmental Review Policy - The Hawaii EIS Law (HRS 343 and HAR 11-200).
- Special Management Area - Shoreline development (HRS 205A and HRO 25).
- Oil Pollution Prevention - EPA SPCC requirements (40 CFR 112).
- Facilities Transferring Oil or Hazardous Materials in Bulk - USCG requirements (33 CFR 154 and 156).
- Water Pollution Control - NPDES requirements (HAR 11-54 and HAR 11-55).
- Wastewater System - DOH CWB requirements (HAR 11-62).
- Hawaii Emergency Planning and Community Right-to-Know Act - Chemical storage requirements (HRS 128E).
- Hawaii Environmental Response Law - Releases of hazardous substances (HRS 128D and HAR 11-451).
- Air Quality Standards - Air Emissions requirements (HAR 11-59 and HAR 11-60.1).
- Transportation - DOT requirements (49 CFR 130 and 49 CFR 172).

Social and Economic Policies, Plans, and Controls

The operation of the Terminal is in compliance with government social and economic policies, plans, and controls. These include the following.

- Kauai Commercial Harbors 2025 Master Plan.
- Kauai General Plan Update.
- County of Kauai General Plan.
- Lihue Community Plan.
- Hawaii State Land Use Controls.

Permits and Security

Prior to construction of the future ASTs at the Terminal and the grading associated with preparing the extension to the tank yard, building and grading permits will be obtained from the County of Kauai. If required, fire permits for the future ASTs at the Terminal will be obtained from the Kauai Fire Department prior to placing them into operation. An 8-foot high chain link fence surrounds the perimeter of the Terminal and barbed wire lines the top of the fence. Steel sliding gates are located at the entrance and exit of the Terminal. The gates are locked when the Terminal is not in operation. Security lights have been installed at each of the four large ASTs, at the portable ASTs, and at the TTLR. The Terminal meets federal and state security requirements.

Potential Land Impacts

Geological impacts are those that affect the surface and subsurface geology, such as surface and subsurface soil, surface sediment, and rock. Agricultural impacts are those that affect the

land surface and shallow subsurface in those areas where agricultural activities are conducted. There is no agriculture in the immediate area of Nawiliwili Harbor, which is heavily industrialized.

Construction of the future tanks at the Terminal is not expected to pose a significant environmental risk to the Terminal or the surrounding area. The construction will require limited excavation, grading, and compaction. It is estimated that the final grade will be the same as the current tank yard. It is not expected that there will be excavated material that will require off-site disposal.

Operations at the Terminal have not changed significantly since it was constructed. Because planned improvements will not change the operation of the Terminal, Terminal operations do not pose a significant environmental risk to the Terminal property or the surrounding area. The potential for adverse environmental impacts exists in the event that there is a release of oil at the Terminal or from the cargo lines. Controls that have been implemented to mitigate or eliminate the potential for such releases include the following.

- SWPC Plan.
- SPCC Plan.
- Operations Manual and General Response Plan.
- DOT Spill Response Plan.

Potential Water Impacts

Waters of potential concern in the area of the Terminal include shallow groundwater, coastal waters, and deep, basal, drinking water. Of these, shallow groundwater and the coastal waters at Nawiliwili Harbor are the principal concerns. In the absence of engineered controls and institutional controls, shallow groundwater could be impacted should releases of oil occur. Even the coastal waters at Nawiliwili Harbor could be impacted should releases of oil occur in sufficient quantity. Engineered controls (e.g., secondary containments, tank yard liner) and BMPs (e.g., spill response plans, training) have been implemented to prevent and mitigate potential releases within the Terminal and to prevent releases from reaching coastal waters.

Based on the distance and direction to the nearest drinking water supply wells and the depth to the basal (drinking water) aquifer, it is unlikely that contaminants originating at the terminal have impacted or could impact drinking water sources.

Potential Biological Impacts

The biological communities of potential concern in the area of the Terminal are floral, faunal, and marine organisms. The potential impacts to these biological communities were considered in the preparation of the EAs and EISs conducted for projects at the Nawiliwili Harbor area. Based on information contained in the floral, faunal, and marine biota assessments, there are no threatened, endangered, or endemic floral or faunal species in the area of the Terminal.

The floral and faunal communities observed in the biological assessments indicate that the Nawiliwili Harbor area is a highly degraded environment. The native species habitats were destroyed during the construction of Nawiliwili Harbor and dredging removed the massive twin

reefs that formerly were in the bay. We conclude that the Terminal has not, does not, and will not have a significant impact on the already significantly modified biological conditions in the Nawiliwili Harbor area.

Probably the most important potential biological impact identified in the Nawiliwili Harbor area is the danger to the Newell's Shearwater bird posed by night lighting. To mitigate this potential hazard, the security night lighting at the Terminal conforms to the guidelines for wildlife lighting issued by DLNR and DOFAW. The lights used at the Terminal are *downlights* that are shielded and mounted on poles substantially shorter than the surrounding ASTs.

Although the green sea turtle may occasionally enter the harbor, the Nawiliwili Harbor area, the Terminal in particular, does not provide this animal a feeding habitat. The possibility that Terminal operations or future terminal improvements pose a threat to this species is discounted.

Potential Air Quality Impacts

To determine if emissions generated at the Terminal would adversely affect air quality conditions, potential air quality impacts were evaluated. Construction of the two ASTs has the potential to generate short-term air quality emissions in the form of dust. BMPs will be implemented during construction to ensure that dust emissions are minimized during construction.

Normal operation of the Terminal will generate air emissions. One source is the diesel generator, which is operated only during the time that tanker trucks are being loaded and the flare is being used. The generator will be powered with ultra-low sulfur diesel fuel. The principal concerns are carbon monoxide, NO_x, SO_x, $PM_{2.5,}$ and PM_{10}, lead, and VOCs. Another source is the flare. The anticipated emissions are those associated with the thermal destruction of VOCs associated with fuel vapors, particularly those from gasoline. The principal concerns are VOCs, in particular those that are HAPs.

As part of the new CSP application for the Terminal, emissions modeling was conducted to assess the air pollutants that are anticipated to be generated. The results confirm that the generator and the flare are the main sources of air pollution at the Terminal. The total HAPs emissions are below federally regulated levels. Based on the results of the modeling, the DOH CAB approved the CSP application and, in December 2014, the DOH CAB issued the Terminal CSP No. 0370-02-C.

Potential Noise Impacts

To determine if noise generated at the Terminal would adversely affect noise quality in the area, potential noise impacts were evaluated. Construction of the two future ASTs at the Terminal has the potential to generate short-term noise impacts. The main source of noise during construction likely will be from heavy trucks that transport materials. Based on information regarding the propagation and attenuation of noise from diesel trucks, the 90 to 100 dBA source noise levels characteristic of those trucks will be attenuated to approximately 62 dBA at a distance of 700 feet, which is less than the distance to the nearest sensitive receptor (820 feet). This 62 dBA noise level is likely to be drowned out by the noise from the neighboring Matson truck traffic and

the noise from trucks and other vehicles on the roadways between the harbor area and the receptor. In addition, the surrounding building structures, vegetation, and cliffs separating the harbor and the resort will act to further mitigate noise from the Terminal to below maximum permissible sound levels prior to reaching the receptor.

The most significant source of noise during normal Terminal operations is the generator. Estimates were made of noise levels at the five closest noise-sensitive areas that would be resulting from generator operation. The estimated levels range from 48 to 60 dBA. With the exception of Kauai High School and Community School, these levels are at or below the maximum permissible sound levels. Surrounding structures, vegetation, and cliffs will be noise-mitigating and likely will reduce the levels further. Therefore, the noise generated at the Terminal should not be apparent at these noise-sensitive areas. Although the noise levels calculated for Kauai High School and Community School exceed the maximum permissible sound level by 1 dBA, the calculation is based on conservative and likely unrealistic assumptions. It is highly unlikely that the noise from the generator will be apparent at that location.

Land Use

The Terminal has not had a significant impact on existing land use in the Nawiliwili Harbor area. Future improvements to the Terminal do not involve changes in its principal operations and, therefore, are not expected to have a significant impact on existing land use. The State Land Use Commission designates the area as zoned as *I-G Industrial-General* and the Kauai General Plan Land Use Designation is for *Transportation*. The Terminal's current and future use are consistent with the types of operations conducted at surrounding businesses and facilities. The Terminal will aid in the implementation of the Kauai General Plan and the Lihue Community Plan, as the common goal of both plans is for continued use of Nawiliwili Harbor as one of the State's most important industrial areas.

Social and Economic Issues

There have been no apparent social impacts related to Terminal operations since its original construction. The Terminal has had a positive economic impact by providing fuel to the Kauai island business and residential community. In addition, by providing fuel to the Lihue Airport, the Terminal contributes to the facilitation of business and visitor traffic to the island. The visitor industry provides the largest number of jobs on Kauai, and visitors are in need of transportation while on the island, raising the demand for fuel. With the estimated annual increase in population and visitors, there is expected to be an accompanying increase in fuel demand by Kauai residents, businesses, and visitors.

It is not anticipated that future planned improvements to the Terminal will have a social impact on the harbor area because the improvements will not change the nature of Terminal operations. Future planned improvements to the Terminal likely will have a positive economic impact. The addition of the two ASTs will improve the Terminal's storage capacity, which will enable it to meet the higher demands for fuel projected by the future increase in Kauai residents, visitors, and businesses. Also, the additional storage capacity is expected to reduce

the number of fuel barge deliveries, thus reducing the traffic at Pier 2 and allowing for additional cargo deliveries and cruise ship anchorages.

Archeological and Historical Sites

Potential impacts to cultural and historic sites were considered in the preparation of most of the ten EAs and EISs conducted for projects at the Nawiliwili Harbor area. The cultural assessments all reached similar conclusions, that the construction projects in question would not have significant negative cultural impacts. Cultural sites in the area were destroyed during the development of the area following the arrival of Captain James Cook, the introduction of foreign agricultural practices and industry, and the development of western infrastructure. What few cultural sites might have remained would have been destroyed during the construction of Nawiliwili Harbor, the development of harbor infrastructure, commercial and infrastructure development in the area, and the construction of the hotel and resort complex at Kalapaki.

Based on an assessment of the history, cultural background, and existing cultural and historical sites in the Nawiliwili Harbor area, we have concluded that there are no significant historical or cultural sites at or in the immediate vicinity of the Terminal; that Terminal operations, both past and present, have not threatened or impacted any significant historical or cultural sites; and that future Terminal improvements will not threaten or impact any significant historical or cultural sites.

Visual and Aesthetic Appeal

The Terminal does not and will not have a significant impact on the visual and aesthetic appeal of Nawiliwili Harbor. Nawiliwili Harbor already has a heavy industrial appearance and the tallest structures at the Terminal are lower than other structures in the immediate vicinity (i.e., the Hawaiian Cement silos). The principal features at the harbor are the piers with barges and cruise liners docking, a small boat harbor, two bulk fuel terminals, a former bulk fuel terminal that still contains large ASTs, the DOT Harbor's Pier 2 shed, the Hawaiian Cement yard, the Matson cargo container yard, DOT Harbors offices, several warehouses, and the empty parcel occupied formerly by the Lihue Sugar Plantation molasses storage facility.

Recreational Activities and Areas

The Terminal has not had an adverse impact on recreational activities in the harbor area and future improvements to the Terminal will not have an adverse impact on current recreational activities. There are no recreational activities in the area of the Terminal. As stated in the Kauai Commercial Harbors 2025 Master Plan, the Nawiliwili Harbor area and the area surrounding the Terminal have been designated for future industrial development.

Transportation

Traffic associated with the Terminal has not and will not adversely affect traffic conditions in the area for the following reasons. First, following construction of the Terminal improvements, the amount of vehicular traffic associated with the Terminal is expected to be equivalent or similar to the current traffic. Thus, there should be no net increase in Nawiliwili Harbor traffic. Second, the barge traffic associated with fuel delivery is anticipated to decrease, thus relieving barge traffic

at the harbor. Therefore, there should be no net increase in traffic at Nawiliwili Harbor as a result of the addition of the two future ASTs at the Terminal.

Utilities

There will be no significant impacts to utility use in the area resulting from Terminal improvements, including installation of the future ASTs. Water, electricity, and sanitary sewer already are used at the Terminal and additional use of these utilities will be minimal. The potential additional power requirements for the Terminal are modest.

Consultation Activities

In preparing the EA, consultation meetings were held with federal and state agencies. In addition, neighboring facilities and community groups also were contacted. The following parties were contacted or attempts were made to contact them.

- DOT Harbors Division, Honolulu Office.
- DOT Harbors Division, Nawiliwili Office.
- DOH SHWB.
- DOH HEER Office.
- The Office of Hawaiian Affairs.
- The Bishop Museum.
- The Department of Geology and Geophysics, University of Hawaii.
- The Department of Anthropology, University of Hawaii.
- The Historic Preservation Program, University of Hawaii.
- State Historic Preservation Division, DLNR.
- The Historic Hawaii Foundation.
- Kumu Pono Associates LLC.
- Honua Consulting.
- Kauai Museum.
- Lihue Public Library.
- Kauai Historical Society.
- The Center for Hawaiian Studies, University of Hawaii.
- Na Pali Coast Ohana.
- Aloha For All.
- County of Kauai Department of Planning and Permitting.
- DLNR, Division of State Parks.
- Kauai Petroleum.
- Summit Terminaling Services, LLC.
- PAR Petroleum.
- Bike Path Project, County of Kauai.
- DAGS State Survey Office.
- OEQC.
- Cultural Surveys Hawai‘i, Inc.

Findings and Conclusions

The results of the EA were compared with the *significance criteria* established by the State under HRS 343 (HAR 11-200-12). It is concluded that the operation of the Terminal and proposed improvements do not meet any of the thirteen criteria. By not meeting these criteria, it is appropriate that the proposed Terminal project be issued a FONSI and that an EIS not be required.

SECTION 1 – GENERAL DESCRIPTION

This report describes the Environmental Assessment [EA] performed by Environmental Science International, Inc. [ESI], on behalf of Kauai Petroleum Company, Ltd. [Kauai Petroleum], for the Kauai Petroleum Fuel Terminal, which is located at Nawiliwili Harbor in Nawiliwili, Kauai, hereinafter referred to as the "Terminal" (Figure 1). The Terminal property is owned by the State of Hawaii and is managed and controlled by the Department of Transportation [DOT] Harbors Division. The Terminal property is identified by the County of Kauai Property Assessment Division as Tax Map Key [TMK] No. (4) 3-2-004:016 (Figure 2). It is located on land zoned as urban (State Land Use Commission [SLUC], 2000) (Figure 3).

1.1 PURPOSE

This assessment was undertaken to determine if potential environmental impacts associated with the operation of the Terminal and with planned future construction at the Terminal are significant enough to warrant an Environmental Impact Statement [EIS]. The assessment was conducted in accordance with the requirements of the Hawaii EIS Law, which are contained in Hawaii Revised Statutes [HRS] Chapter 343 (HRS 343; State of Hawaii Department of Health [DOH], 1974) and in Hawaii Administrative Rules [HAR] Title 11, Chapter 200 (HAR 11-200; DOH, 1996a).

1.2 GENERAL INFORMATION

Kauai Petroleum currently operates the Terminal and is planning on constructing two additional above-ground storage tanks [ASTs] to increase its capacity. The agency most directly involved in the proposed activity is the DOT Harbors Division, which manages and controls the land through executive orders. Therefore, DOT will be the approving agency. A copy of the current lease (DOT, 1988) is included in Appendix B. This information is summarized in Table 1.1.

TABLE 1.1
General Information and Anticipated Finding
Kauai Petroleum Fuel Terminal
Draft Environmental Assessment

Applicant:	Kauai Petroleum Company, Ltd. 3185 Waapa Road Nawiliwili, Hawaii 96766
Approving Agency:	State of Hawaii Department of Transportation Harbors Division 79 South Nimitz Highway Honolulu, Hawaii 96813
Anticipated Determination:	FONSI

Under specified conditions, HRS 343 allows a previously accepted EA to be used in evaluating a proposed project to determine whether an EIS is required (DOH, 1974, 1996a). The previously accepted EA must be pertinent to the decision at hand and must have logical relevancy and bearing to the action being considered. Furthermore, the previously accepted EIS must be substantially similar to and relevant to the action being considered.

Several EAs and EISs have been prepared for projects in the Nawiliwili Harbor area. These are listed in Table 1.2. Although these reports address projects of different scope and intent, they each address potential impacts to the environment. Some focus primarily on potential impacts to marine flora and fauna, while others focus on potential social and economic impacts. Information and determinations from these reports regarding sensitive ecological receptors and environmental conditions that are relevant to the Kauai Petroleum Terminal project are incorporated by reference, in whole or in part, in this EA.

TABLE 1.2
EAs and EISs Conducted for Nawiliwili Harbor Area Projects
Kauai Petroleum Fuel Terminal
Draft Environmental Assessment

Project Type	Year	Project	Reference
Draft EA	2008	Nawiliwili-Ahukini Shared-Use Path	R.M. Towill [Towill]
Final EA	2005	Segmented Pier 3 Improvements	Arnold Okubo & Associates [Okubo]
Final EA	1998	Realignment of Waapa Road	NKN Project Planning [NKN]
Final EA	1996	Nawiliwili Reservoir and Transmission Line	Belt Collins Hawaii [Belt Collins]
Final EA	1993	Pier 1 Improvements	DOT Harbors Division
Final EA	1993	Nawiliwili Pier Cargo Pipelines	Gasco Inc. [Gasco]
Final EA	1993	Drainage Outlet for the NNCP	Case & Lynch
Final EA	1991	Nawiliwili Road-Waapa Road Improvements	Environmental Communications
Revised EIS	1978	Coral Fill Industrial Subdivision	VTN Pacific [VTN]
Final EIS	1973	Nawiliwili Small Boat Harbor	Department of the Army

With the exception of the Draft EA for the Nawiliwili-Ahukini shared-use path (Towill, 2008), each of the projects listed in Table 1.2 has received a Finding of No Significant Impact [FONSI]. In accordance with our understanding of the stipulations regarding using prior assessments (i.e., in HRS 343, HAR 11-200), the determinations from the Nawiliwili-Ahukini shared-use path Draft EA will not be incorporated in this EA. However, information contained in the cultural impact assessment (Cultural Surveys Hawai‘i, Inc. [CSH], 2008) that was included as an appendix to that report will be incorporated in this EA.

Other than recent improvements, which are described in this EA, no significant changes have occurred at the Terminal since 1989, when the last of the current large ASTs (Tank 2; see Section 2.3) was constructed. The only significant change in the immediate area has been the removal of the molasses tanks on the adjacent former Kauai Sugar Plantation property

sometime between October 2012 and December 2013. Thus, based on the results of the projects listed in Table 1.2 and the lack of a change in the type of operations conducted at the Terminal since its construction (sometime in the 1930s or early 1940s), it is anticipated that this EA will result in a FONSI and that an EIS will not be required.

1.3 TERMINAL DESCRIPTION

The Terminal occupies 1.3154 acres of land at Nawiliwili Harbor, approximately 225 feet north of Pier 2, and it lies within the Special Management Area [SMA] (Figure 4). The Terminal's primary function is to store and distribute gasoline, jet fuel, and diesel fuel. Ethanol also is stored at the Terminal. In the future, the Terminal potentially could store and distribute naphtha. The fuel is shipped to Nawiliwili Harbor by barge and is transferred to the Terminal via three underground cargo lines that run from Pier 2 to the Terminal. A site map depicting the layout of the Terminal is provided in Figure 5.

The Terminal consists of an office/warehouse building, a fuel loading area (which includes the tanker truck loading rack [TTLR]), and a tank yard. Located in the tank yard are ten ASTs used to store regular unleaded gasoline (87 octane), supreme unleaded gasoline (92 octane), jet fuel (Jet A), and ultra-low sulfur diesel [ULSD] fuel. Six of the ASTs are portable tanks. As part of the planned improvements to the Terminal, two additional ASTs will be constructed in the tank yard. One will be used to store jet fuel, and the other will be used to store either diesel fuel or naphtha. The future ASTs will be constructed in accordance with American Petroleum Institute [API] Standard 650. A summary of the ASTs at the Terminal, planned future ASTs, their contents, and their capacities is provided in Table 1.3. The locations of the ASTs are shown in Figure 5.

TABLE 1.3
Summary of ASTs at the Terminal
Kauai Petroleum Fuel Terminal
Draft Environmental Assessment

Status	Tank Number	Capacity (bbl)	Contents
Current Tanks	1	7,300	87 octane gasoline
	2	7,200	Jet A fuel
	4	7,500	92 octane gasoline
	9	3,100	87 octane gasoline
	10	645	ethanol
	11	645	ultra-low sulfur diesel fuel
	12	645	ultra-low sulfur diesel fuel
	13	645	ultra-low sulfur diesel fuel
	14	645	ultra-low sulfur diesel fuel
	15	645	ultra-low sulfur diesel fuel
Future Tanks	16*	9,000	Jet A fuel
	17*	4,500	diesel fuel / naphtha

bbl barrels.
* tank number designations not finalized.

The tank yard is surrounded by a concrete containment wall, and the floor of the main portion of the tank yard, the one that contains the four large ASTs, is lined with an impermeable polyurea liner. The portion of the tank yard that contains the portable ASTs has a concrete floor. In conjunction with the installation of the two additional ASTs, the containment wall will be expanded and additional liner will be installed. The concrete containment walls and the liner provide secondary containment for the tank yard.

Access to the Terminal is provided by two gates. The entrance gate is located at the southeast corner of the Terminal, at the corner of Kanoa Street and Waapa Road. The exit gate is located on the south side of the Terminal, along Waapa Road. For typical loading operations, tanker trucks approach the Terminal along Kanoa Street, enter at the entrance gate, load fuel at the TTLR, and leave at the exit gate onto Waapa Road.

The Terminal off-loads fuel from barges at Pier 2. From the dock hook-ups, the fuel is pumped to the Terminal through the underground cargo lines, which become above-ground pipelines on the north side of the TTLR, and into the ASTs. The fuel is pumped from the ASTs to the TTLR for the loading of tanker trucks.

The office and warehouse building occupies the southwest corner of the Terminal. The south end of the building is used as office space and the north end is used as a warehouse. North of the warehouse, along the west side of the Terminal, are a generator and a flare. The flare is used to combust vapors generated during fuel loading at the TTLR in order to mitigate potential emissions. It was installed as part of the recent Terminal improvements and associated modifications to the facility's air permit.

1.4 OPERATIONAL PROCEDURES, TRAINING, AND INSPECTIONS

1.4.1 Transfer of Fuels From Barges to the Terminal

Fuel for off-loading to the Terminal is transported by delivery barges to Pier 2. Typically, the Terminal receives two to three barge deliveries each week. The barges are operated by Par Petroleum and by Chevron. Each week, one barge delivery is for jet fuel and diesel fuel and the second barge delivery is for gasoline, ethanol, diesel fuel, and jet fuel. It is anticipated that, following construction of the two planned ASTs, the number of barge deliveries will be reduced to one every ten days.

To prevent overfilling and spills, loading and transfer operations are supervised closely by Terminal personnel. The loading and transferring procedures follow the requirements set forth by the DOT (49 Code of Federal Regulations [CFR] 130 and 49 CFR 172; DOT, 2005a, 2005b) and the United States Coast Guard [USCG] (33 CFR 154; USCG, 2005a).

1.4.2 Fuel Loading Operations at the Terminal

Typically, 19 to 23 tanker trucks are loaded each day. Twelve of the trucks are operated by Senter Petroleum, which supplies fuel to commercial, farming, and industrial users. Four to eight trucks are used to transport jet fuel to the Lihue Airport. Three or more of the trucks are operated by Aloha Petroleum. In addition, twice monthly, Aloha Petroleum has six to eight additional trucks loaded for 87 octane and 92 octane gasoline. It is not anticipated that the number of trucks loaded will change following construction of the two planned ASTs. The primary goal for constructing the ASTs is to create additional storage capacity for the existing products stored and distributed at the Terminal. Construction of the new ASTs will allow Kauai Petroleum to reduce the number of barge shipments the Terminal requires.

1.4.3 Storm Water Controls

Due to the Terminal's proximity to Nawiliwili Harbor and its upgradient location, it is important to prevent potentially contaminated storm water from discharging from the Terminal and entering Nawiliwili Harbor. Storm water controls have been engineered at each principal area in the Terminal. The purpose of the controls is to prevent a discharge of storm water runoff from the Terminal. The controls are described below. Storm water is managed under a storm water pollution control [SWPC] plan (ESI, 2013a), which will be revised once the Terminal improvements have been completed.

1.4.3.1 Storm Water Control in the Tank Yard

The tank yard secondary containment has a capacity sufficient to contain the contents of the largest AST and an additional 10 percent or greater capacity for accommodating rainfall. The concrete containment wall also is designed to prevent storm water from discharging from the tank yard. There is a sump with an attached valve that is connected to the northeast side of the tank yard. Normally, the valve is maintained in the closed position.

If the tank yard becomes filled with water following a storm event, the water in the tank yard is inspected for evidence of petroleum contamination (e.g., the presence of a petroleum hydrocarbon sheen, free-phase petroleum product floating on the water's surface, petroleum hydrocarbon odors). Once it has been determined that contamination is not present, the valve is opened and storm water is released from the tank yard. Each inspection and release event is documented and the record is retained at the Terminal office.

1.4.3.2 Storm Water Control at the TTLR

The TTLR is partially covered by a canopy and is surrounded by a curb. Inside the curbed area is a drain that leads to a sump. These features are designed to prevent accidental releases of fuel from discharging out of the TTLR area and provide a means of capturing released fuel in the sump for later recovery. This system also acts to prevent storm water runoff from leaving the TTLR area. If the sump becomes filled with water following a storm event, the water in the sump is inspected for evidence of petroleum contamination. Once it has been determined that

contamination is not present, the water is pumped out of the sump and allowed to infiltrate on-site.

1.4.4 Training

Terminal personnel are trained in the proper use, operation, and maintenance of equipment and materials used at the Terminal. These personnel also are trained to prevent and respond to spills of petroleum fuels and other materials used and stored at the Terminal. Terminal personnel are familiar with applicable pollution control laws and regulations.

Annual spill prevention and response training are provided to Terminal personnel for all areas of the Terminal in which they work. The training incorporates the requirements set forth in the plans described in Section 3 of this EA. The training programs are designed to increase awareness of the health and environmental risks associated with the release of petroleum-based products and hazardous substances.

Spill prevention briefings are conducted at the Terminal at regular intervals. The purpose of these briefings is to make Terminal personnel and management aware of changes or modifications to existing operations that could influence the potential for spills. Such changes include, but are not limited to, the installation of new equipment, the modification of existing equipment, the use of new petroleum-based products or hazardous substances, and changes in general operating procedures.

1.4.5 Inspections

ASTs, piping, valves, machinery, and other equipment at the Terminal are inspected on a regular basis to ensure proper functioning. Any sign of deterioration or leakage that could lead to a spill or unanticipated release of petroleum-based products or hazardous substances are reported immediately to the Terminal Manager.

Under Environmental Protection Agency [EPA] regulations, it is necessary for the Terminal to have a Spill Prevention Control and Countermeasure [SPCC] Plan (40 CFR 112; EPA, 2015). SPCC requirements include inspections. General site inspections are performed monthly and documented on an SPCC Plan inspection report form. These forms are retained at the Terminal. Formal storage tank and valve leak testing are performed as required.

1.5 Petroleum Products and Hazardous Materials at the Terminal

The nature of the Terminal and its operations require that petroleum products be stored and distributed at the Terminal. The following principal types of petroleum product are stored and distributed at the Terminal: (1) gasoline, (2) diesel fuel, and (3) jet fuel. In addition to these petroleum products, the following materials are stored and used at the Terminal: (1) ethanol, (2) fuel additives, and (3) lubricating oil. The most significant of these materials, their physical properties, and the potential hazards they pose are summarized in Table 1.4. The Safety Data Sheets [SDSs] are provided in Appendix A.

The procedures for handling the petroleum products and hazardous materials that are stored and used at the Terminal have been implemented to reduce the potential for risks to human health and the environment. The potential for environmental impacts is not anticipated to be significant. The potential for human health impacts is mitigated by best management practices and training. Descriptions of these mitigative measures are included in the sections below.

TABLE 1.4
Petroleum Products and Fuel Additives Stored at the Terminal
Kauai Petroleum Fuel Terminal
Draft Environmental Assessment

Petroleum Product	CAS No. / Principal CAS No.	Flash Point (°F)	Boiling Point (°F)	Melting Point (°F)	Specific Gravity	Significant Hazards
Gasoline[1]	8006-61-9	-5.8	85-392	-150	0.8	explosion, fire
Jet Fuel[2]	8008-20-6	100	310-702	-15	0.8	explosion, fire
Diesel Fuel[3]	68476-34-6	125	310-702	-15	0.86	explosion, fire
Ethanol[4]	64-17-5	-5.8	85-392	-150	0.8	explosion, fire
Diesel Additive[5]	1330-20-7	94	n/a	n/a	0.947	fire
Fuel Additive[6]	64742-95-6	111.2	n/a	n/a	n/a	fire
Diesel Fuel Dye[7]	1330-20-7	>83	279-302	n/a	1.0	fire

CAS Chemical Abstracts Service.
°F degrees Fahrenheit.
1 Hawaii Independent Energy Unleaded Gasoline.
2 Hawaii Independent Energy Jet Fuel.
3 Hawaii Independent Energy Ultra Low Sulfur Diesel Fuel.
4 Hawaii Independent Ethanol.
5 Innospec Diesel Fuel Additive.
6 HiTEC Fuel Additive.
7 United Color Manufacturing UNISOL Liquid Red B.
n/a not available.

1.5.1 Petroleum Fuels

1.5.1.1 General Description of Petroleum Fuels

The petroleum fuels stored and distributed at the Terminal are petroleum refinery products produced during the distillation of crude oils. These are distillate fuels that are complex mixtures of low- and middle-molecular weight, petroleum hydrocarbons. These hydrocarbons consist of paraffins, isoparaffins, aromatics, and, to a lesser extent, naphthenes and olefins. The aromatics include volatile aromatics, such as benzene, toluene, ethylbenzene, and xylenes [BTEX].

1.5.1.2 Use of Petroleum Fuels

The petroleum fuels at the Terminal are sold to commercial, farming, and industrial users, including petroleum companies for use at marketing sites (e.g., service stations), agricultural

companies for use at agricultural sites, and to the Lihue Airport for use in aircraft.

1.5.1.3 Potential Hazards of Petroleum Fuels

The petroleum fuels at the Terminal are either ignitable (gasoline) or combustible (jet fuel, diesel fuel) liquids and thus pose a potential fire and explosion hazard. Vapors from these fuels can catch fire and burn with explosive violence. These fuels may cause eye and skin irritation, and prolonged or repeated contact with skin can be harmful. Also, they are an inhalation hazard and combustion can produce carbon monoxide. When heated, these fuels may form hydrogen sulfide gas, and dangerous fumes can collect in confined spaces. Petroleum fuels can be fatal if swallowed.

1.5.1.4 Mitigation of Hazards of Petroleum Fuels

Petroleum fuels stored at the Terminal do not pose a human health or ecological risk to populations outside the Terminal. The two most significant human health and safety concerns for Terminal personnel working with these fuels are fire and the inhalation of vapors.

The fuels within the Terminal are contained in tanks and piping. Therefore, the possibility of direct contact with the material is limited essentially to transfer operations, principally the loading of fuel into tanker trucks at the TTLR. Personnel directly involved in the transfer and storage of fuel are trained to handle the material and are provided with the appropriate personal protective equipment.

1.5.2 Fuel Additives

1.5.2.1 General Description of Fuel Additives

The ethanol additive used at the Terminal consists of 90 to 95 percent ethanol mixed with gasoline and other petroleum hydrocarbons. The HiTEC fuel additive consists of a mixture of a proprietary chemical compound (a complex amine), naphtha, and other petroleum hydrocarbons. The diesel fuel additive consists primarily of polymers with up to 40 percent petroleum hydrocarbons. The diesel fuel dye consists of 68 percent Solvent Red 164 (an azo dye) mixed with petroleum hydrocarbons.

Future Use of Ethanol. It is possible that ethanol may not be stored or used at the Terminal in the future. Both the Hawaii State House of Representatives (H.B. No. 743) and the Hawaii State Legislature (S.B. 717) have introduced bills to repeal the requirement that gasoline for motor vehicles include 10 percent ethanol.

1.5.2.2 Use of Fuel Additives

Ethanol, which is used to increase the octane rating of gasoline, is the most significant fuel additive used at the Terminal. HiTEC fuel additive is an engine valve and injector cleaner that is added to gasoline. The diesel fuel additive is used to improve the lubricating qualities of the fuel

to reduce engine wear. The diesel fuel dye is added to fuels used in off-road vehicles and equipment.

1.5.2.3 Potential Hazards of Fuel Additives

The fuel additives at the Terminal are either ignitable (ethanol, diesel fuel additive, diesel fuel dye) or combustible (fuel additive) liquids and thus pose a potential fire and explosion hazard. Vapors from these additives can catch fire and burn with explosive violence. These additives may cause eye and skin irritation, and prolonged or repeated contact with skin can be harmful. Also, they pose a moderate (chronic) health hazard and are an inhalation hazard. These additives can be fatal if swallowed.

1.5.2.4 Mitigation of Hazards of Fuel Additives

Fuel additives stored at the Terminal do not pose a human health or ecological risk to populations outside the Terminal. The two most significant human health and safety concerns for Terminal personnel working with these additives are fire, direct contact, and the inhalation of vapors.

The fuel additives within the Terminal are stored in 330-gallon tote containers and 55-gallon storage drums. Therefore, the possibility of direct contact with the material is limited essentially to transfer operations, principally the blending of additives into the fuels. Personnel directly involved in the transfer and storage of additives are trained to handle the material and are provided with the appropriate personal protective equipment.

1.6 POTENTIAL FUTURE OPERATIONS AT THE TERMINAL

The basic operations at the Terminal will remain unchanged. The storage and distribution of petroleum fuels have constituted the basic operation of the Terminal since its construction, which was sometime in the 1930s or early 1940s. The only confirmed future changes to the Terminal are the completion of the remainder of the planned improvements. These changes include the construction of the two new ASTs, the installation of the associated product piping, the construction of the additional containment wall, and the installation of the additional tank yard liner.

SECTION 2 – PROPERTY INFORMATION

The Terminal site is located within an urban area in the Lihue District of Kauai. There is no residential housing in the immediate vicinity and the majority of the land in the area has been developed for industrial use.

2.1 PROPERTY LOCATION AND SETTING

The Terminal is approximately 0.5 miles southeast of and below the underground injection control [UIC] line, on the southeast coast of Kauai, at a surface elevation of approximately 8 feet above mean sea level [amsl] (Figure 6). The nearest surface water body is Nawiliwili Harbor, approximately 225 feet to the south. Locally, the topographic surface gradient is relatively flat. Nawiliwili Harbor is zoned as *I-G Industrial-General* by the State Land Use Commission (Okubo, 2005).

The Terminal occupies 1.3154 acres of land owned by the State of Hawaii. It is bounded on the north by the Reynolds Recycling facility, on the east by Kanoa Street, on the south by Waapa Road, and on the west by the former Lihue Sugar Plantation molasses storage facility property, which presently is a vacant parcel following the recent removal of the molasses tanks and associated structures (Figure 4). The DOT Harbors Division Pier 2 shed is across Waapa Road from the Terminal. The Matson overseas cargo container yard is across Kanoa Street.

Nawiliwili Harbor is a modern construction and the pier areas occupy fill land constructed on spoil dredged from the harbor. The former north coastline of Nawiliwili Bay crossed what is now the north boundary of the Terminal property and extended northeast to what is now the northwest corner of Kalapaki Beach (Figure 7). In conjunction with the construction of the Pier 0 jetty in 1930, the area of Piers 1 and 2, including the land upon which the Terminal resides, was backfilled and developed into harbor facilities. A description of the development of Nawiliwili Harbor and the Terminal property is provided in Section 2.3.

2.2 PROPERTY DESCRIPTION

The property is located on a portion of Governor's Executive Order 509, on land that became Lots A-2 and A-3. Later, it was designed Parcel C. The property now is identified as TMK Fourth Taxation Division, Zone 3, Section 2, Plat 004, Parcel 016. It is located at latitude 21°57'21.06", longitude 159°21'20.82".

The property is occupied by the Kauai Petroleum bulk fuel terminal. There is no record of the property ever having permanent structures prior to construction of the Terminal, which was sometime in the 1930s or early 1940s. Structures at the Terminal include an office/warehouse building, a TTLR, and a tank yard. Inside the tank yard are ten ASTs used to store gasoline, jet fuel, diesel fuel, and ethanol (Figure 5). Most of the area on the south side of the Terminal, bounded by the warehouse, the TTLR, and the fence line next to Waapa Road, is paved with asphalt. The TTLR area is paved with concrete. The area surrounding the west, north, and east sides of the tank yard are unpaved. The Terminal is surrounded by a chain link fence.

The Terminal is under environmental oversight by the DOH and has been issued Case No. 20110721-1528 by the DOH Hazard Evaluation and Emergency Response [HEER] Office. Environmental investigations currently are being conducted in response to the discovery of a release at the Terminal in 2011 during an initial environmental assessment. The release response actions conducted thus far have included soil and groundwater sampling, the installation of groundwater monitoring wells, and performing an environmental hazard evaluation (Element Environmental [EE], 2012b, 2013). The results of environmental investigations conducted within the Terminal property and the environmental condition of the property are described in Section 4.2.1.3 of this EA.

2.3 NAWILIWILI HARBOR AND DEVELOPMENT OF THE TERMINAL PROPERTY

Information contained in the following narrative was taken from several sources, including historical and cultural assessments (CSH, 2004, 2008), DOT Harbors Division documents (e.g., DOT, 2001), environmental investigations (Earth Tech, 2004; EE, 2012b, 2013), Phase I environmental site assessments (Earth Tech, 2001; EE, 2012a), books (Damon, 1931; Wilcox et al., 1981; Joesting, 1984; Rice, 1991, Griffin, 2014), and websites (University of Hawaii [UH], 2015; Kalapaki, 2015).

Nawiliwili Harbor is one of two deep-draft commercial harbors on Kauai, the other being Port Allen. Nawiliwili Harbor is the more important of the two harbors. It is used for handling general cargo (e.g., containers, lumber, machinery, automobiles), dry bulk cargo (e.g., cement, aggregate, grain, feed, building materials, scrap metal), and liquid bulk cargo (e.g., gasoline, diesel fuel, jet fuel, ethanol).

Nawiliwili Harbor is a man-made harbor that was constructed in Nawiliwili Bay. Prior to the arrival of Captain James Cook in Hawaii, Nawiliwili Bay was home to a native Hawaiian community subsisting on fishing and agriculture. The Bay was surrounded by houses and agricultural plots. Following the *Great Mahele* of 1848, which divided lands between the King, the government, and the people, and the Kuleana Act of 1850, which enabled foreigners to own land, the lands surrounding the bay were acquired by private ownership.

In 1849, a boat landing, capable of handling small boats, was constructed at Kalapaki. Larger vessels anchored off Kukii (Kukii Point) and ferried cargo and people to the landing by longboat. In 1919, the River and Harbor Act authorized the construction of a modern harbor at Nawiliwili Bay. From 1921 to 1926, the breakwater was constructed to protect the harbor entrance from trade wind swells that entered the bay. The breakwater extended from the south side of the bay to nearly two-thirds of the way across the bay's entrance.

In 1927, the seawall was constructed and the dredged spoil was used to fill in the bay behind the west side of the seawall. Following construction of the seawall, the bay was dredged; backfilling of the bay continued in the current area of Piers 1 and 2; and Pier 0 (the jetty pier) and Pier 1 were constructed. Construction was completed in 1930, creating Nawiliwili Harbor

and allowing for deep-draft traffic. The resulting harbor entrance channel was 600 feet wide, 2,400 feet long, and 35 feet deep. The finished breakwater was 2,150 long.

The construction of harbor facilities continued throughout the 1930s, which included the extension of Pier 1 and, by 1936, the construction of Pier 2. Sometime after completion of the construction of Piers 1 and 2, in the 1930s or early 1940s, the Terminal property was developed into a fuel terminal by the U.S. Government. The terminal contained nine ASTs. By 1947, the Territory of Hawaii had taken over the Terminal and, in September 1947, a license to operate the Terminal was issued to Wallace Otsuka, Katsuyuki Kuboyama, and Jay Otsuka. See Section 2.4 for a description of property ownership and of lease and license owners.

In March 1951, a new license to operate the Terminal was issued to Kauai Consolidated Terminals, Ltd. By July 1956, Kauai Consolidated Terminals, Ltd., was operating as Kauai Petroleum. At that time, Kauai Petroleum was a distributor of Union Oil petroleum products. In October 1956, the Board of Harbor Commissioners issued a twenty-year lease to Kauai Petroleum.

From 1954 to 1956, additional dredging of the harbor was performed to increase the controlling depth from 35 to 40 feet and to expand the harbor basin. The dredged spoil was used to fill in the west end of Nawiliwili Bay, creating a new, artificial land area. In 1973, the small boat harbor was built on the south side of the backfilled area. In the mid-1990s, Pier 3 was constructed on the new land area and currently is used for Young Brothers operations.

Over the years, since the Terminal property was first occupied by Kauai Petroleum, the only significant changes have been the replacement of the original U.S. Government ASTs. Beginning in 1957 and continuing up to 1989, the original nine ASTs were removed and the four largest tanks currently operating at the Terminal were constructed. Based on interviews conducted in 2001 (Earth Tech, 2001), Tank 4 was constructed in 1957, Tank 9 was constructed in 1965, Tank 1 was constructed in 1966, and Tank 2 was constructed in 1989.

2.4 TERMINAL PROPERTY OWNERSHIP

Prior to the creation of the Terminal property through backfilling the north side of Nawiliwili Bay in order to construct Piers 0, 1, and 2, the property was part of the bay and was not above sea level. The land in the area of the Terminal was owned by the Republic of Hawaii up until 1898, when the Hawaiian government was overthrown. After July 1898, the land was owed by the U.S. Federal Government. From 1928 to 1931, the U.S. Government transferred ownership of the land to the Territory of Hawaii. In March 1959, following statehood, the land ownership was transferred to the State of Hawaii, which is the current owner of the land, including the Terminal property. A summary of land owners between 1898 and present time is provided in Table 2.1.

Since the 1930s or early 1940s, the Terminal property has been occupied by a bulk fuel terminal. Following the return of the property to the Territory of Hawaii in the mid-1940s, licenses to operate the Terminal and leases to the property have been issued by Territory of

Hawaii and, later, by the State of Hawaii. A summary of licensees and leasees is provided in Table 2.2.

TABLE 2.1
Summary of Property Owners
Kauai Petroleum Fuel Terminal
Draft Environmental Assessment

Property Owner	Date Acquired	Acquired From	Information
U.S. Federal Government	7/7/1898	Republic of Hawaii	30 Statute 750
Territory of Hawaii	2/28/1928	U.S. Federal Government	Presidential Proclamation 1830
Territory of Hawaii	11/14/1930	U.S. Federal Government	Presidential Proclamation 1926
Territory of Hawaii	10/27/1931	U.S. Federal Government	Presidential Proclamation 1972
State of Hawaii	3/18/1959	Territory of Hawaii	Hawaii Statehood Admissions Act

TABLE 2.2
Summary of Lease and License Holders
Kauai Petroleum Fuel Terminal
Draft Environmental Assessment

Leasee	Lessor	Date	Information
Wallace Y. Otsuka, Katsuyuki Kuboyama, and Jay J. Otsuka	Territory of Hawaii	9/17/1947	License and Agreement
Kauai Consolidated Terminals	Territory of Hawaii	3/5/1951	License No. 43
Kauai Petroleum Co., LTD.	Territory of Hawaii	10/18/1956	License No. 101
Kauai Petroleum Co., LTD.	Territory of Hawaii	1/1/1957	Lease No. 100
Kauai Petroleum Co., LTD.	State of Hawaii	1/1/1978	Lease No. H-78-683
Kauai Petroleum Co., LTD.	State of Hawaii	1/1/1988	Lease No. H-87-29
Kauai Petroleum Co., LTD.	State of Hawaii	3/19/1990	Amendment to Lease No. H-87-29

SECTION 3 – PLANS, PERMITS, POLICIES, AND CONTROLS

The operation of the Terminal is in compliance with required government and community plans, permits, policies, and controls. These are described below.

3.1 ENVIRONMENTAL POLICIES, PLANS, PERMITS, AND CONTROLS

3.1.1 Environmental Review Policy

The requirements for performing an EA are contained within the Hawaii EIS Law, which is set forth in HRS 343 (DOH, 1974) and HAR 11-200 (DOH, 1996a). According to HRS 343, the purpose of the Hawaii EIS Law is to establish a system of environmental review to ensure that environmental concerns are considered in decisions made by the State of Hawaii. The intent of the law was to implement the requirements under the federal National Environmental Policy Act [NEPA].

The Hawaii EIS Law is administered and regulated by the State of Hawaii Office of Environmental Quality Control [OEQC]. The OEQC oversees the implementation of these regulations in order to assess the environmental, social, and economic consequences of a proposed development project prior to allowing construction to begin. The Hawaii EIS Law ensures the public the right to participate in planning projects that may affect their communities. The OEQC has issued guidelines for the environmental review process (OEQC, 2012).

Nine types of actions trigger the environmental review process under the Hawaii EIS Law. One of the triggers is projects that propose the use of State of Hawaii or County lands. The Terminal is being operated on land that is owned by the State of Hawaii. Therefore, the Terminal is subject to the requirements of the Hawaii EIS Law. In accordance with the Hawaii EIS Law, if an EA does not result in a FONSI, an EIS is required.

3.1.2 Special Management Area

The SMA is administered and regulated by the County of Kauai Planning Department. The requirements and regulations can be found in HRS 205A and Hawaii Revised Ordinances [HRO] Chapter 25. The purpose of these requirements is to regulate development along shorelines to avoid permanent losses of valuable resources and to ensure that access to publicly owned and publicly used beaches, recreational areas, and natural reserves is provided. Projects within the SMA must undergo the procedural steps set forth in HRS 343 prior to an SMA use permit being issued.

For improvements to the Terminal, Kauai Petroleum has obtained two SMA permits, one in June 1988 and one in January 2014, and received one negative determination of applicability in September 2014. Kauai Petroleum is in the process of preparing a permit application for the installation of the two future ASTs. The permit application will be submitted following the acceptance of this EA. A summary of the SMA permits and permit applications is provided in

Table 3.1. Copies of the SMA permits, the negative determination of applicability, and the current draft SMA permit application are included in Appendix C.

TABLE 3.1
Summary of SMA Permits and Permit Applications
Kauai Petroleum Fuel Terminal
Draft Environmental Assessment

Permit No.	Date	Project	Status
SMA(U)-88-14	June 1988	Replace One AST and Four Underground Fuel Lines	project completed
SMA(M)-2014-5	January 2014	Construction of Terminal Improvements	project completed
DD-2015-4	September 2014	Installation of Portable ASTs	ruled not pursuant under SMA rules
not issued	n/a	Installation of Two ASTs	waiting for completion of this EA

3.1.3 Oil Pollution Prevention

Oil pollution prevention requirements and regulations are administered and regulated by the EPA. The requirements and regulations can be found in 40 CFR 112 (EPA, 2015). The purpose of these regulations is to prevent the discharge of oil from non-transportation-related onshore and off-shore facilities into or upon the navigable waters of the United States or adjoining shorelines. The Terminal is subject to the rules and regulations set forth in 40 CFR 112 because of the following reasons.

- The Terminal is a non-transportation-related onshore facility [40 CFR 112, Appendix A(1)(F)] engaged in storing, using, distributing, and consuming oil and oil products. The appurtenant equipment used to transfer petroleum fuels from vessels to the Terminal is considered to be transportation-related (40 CFR 112, Appendix A(2)(B)).

- Due to its proximity to Nawiliwili Harbor, the Terminal (in the absence of sufficient engineered controls) has a reasonable potential to discharge oil in harmful quantities to navigable waters or adjoining shorelines.

- The Terminal stores oil in aboveground storage containers whose aggregate storage capacity is greater than 1,320 gallons.

Facilities that fall under these regulations are required to prepare and implement an SPCC Plan. The purpose of the plan is to form a comprehensive spill prevention program that minimizes the potential for discharges. An SPCC Plan for the Terminal has been prepared and implemented, as required (O'Brien's Response Management Inc. [O'Brien's], 2011). A description of the Terminal design and operational procedures that meet these requirements is included in Sections 1.3 and 1.5, respectively. The SPCC Plan will be revised following the completion of Terminal improvements.

3.1.4 Facilities Transferring Oil or Hazardous Materials in Bulk

The requirements and regulations governing facilities transferring oil or hazardous materials in bulk are administered and regulated by the USCG (33 CFR 154 and 156; USCG, 2005a, 2005b). The purpose of these regulations is to prevent the discharge of oil or other hazardous materials from transferring operations into or upon the navigable waters of the United States or adjoining shorelines. The Terminal is subject to these regulations because it has the capability of transferring oil or other hazardous materials, in bulk, to or from a vessel that has a total capacity of 250 barrels [bbl].

The Terminal has an operations manual and a response plan, as required under USCG regulations. The Terminal and cargo line are designed and were constructed in accordance with requirements set forth in 33 CFR 154 and 156. The future ASTs also will be designed and constructed in accordance with these requirements. A description of the Terminal design and operational procedures that meet these requirements is included in Sections 1.3 and 1.5, respectively.

3.1.5 Water Pollution Control

Water pollution control requirements and regulations governing the Terminal are administered and regulated by the DOH. The requirements and regulations can be found in HAR 11-54 and HAR 11-55 (DOH, 2014c, 2014d). The purpose of these regulations is to prevent the discharge of contaminated storm water into the navigable waters of the United States or adjoining shorelines.

Storm water will be discharged from the Terminal in accordance with the procedures described in Section 1.4.3. Engineered controls have been constructed to retain storm water within the tank yard. Accumulated storm water is released from the tank yard only under controlled situations. If the tank yard becomes filled with storm water, the water in the tank yard is inspected for evidence of petroleum contamination. Only after it has been determined that contamination is not present is the valve at the discharge sump opened and storm water allowed to be released from the tank yard. Each inspection and release event is documented and the records are retained.

A National Pollutant Discharge Elimination System [NPDES] Permit is not required for the Terminal for the following reasons (ESI, 2013b).

1. The Terminal falls in Standard Industrial Classification [SIC] Code 5171, which is for petroleum bulk stations and terminals. Federal regulations [40 CFR 122.26(b)(14)(viii)] stipulate that “[o]nly those portions of the facility that are either involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, airport deicing operations, or which are otherwise identified under paragraphs (b)(14)(i)-(vii) or (ix)-(xi)” are covered under NPDES

regulations. Because the Terminal does not perform these activities, it is not subject to NPDES regulations and, therefore, does not need to obtain an NPDES permit.

2. DOH regulations (HAR 11-55, Appendix H) require that an NPDES permit be obtained for discharges of treated *process wastewater* associated with petroleum bulk stations and terminals. These regulations define process wastewater as "tank water draws; product displacement process wastewater; wash down and fire hydrant system test waters; service station tank draws; recovered groundwater; and contaminated storm water runoff from the product storage and handling areas." The storm water discharge procedure for the Terminal allows for only uncontaminated storm water to be discharged. Because the discharge is not contaminated storm water runoff, it does not meet the definition of process wastewater. Therefore, the Terminal does not need to obtain an NPDES permit.

The DOH Clean Water Branch [CWB] has confirmed that an NPDES permit is not required for the Terminal as long as discharged storm water is not contaminated. Although not required, as a conservative measure, the Terminal operates under an SWPC plan (ESI, 2013a) to ensure that storm water management operational procedures are followed and maintained. The SWPC Plan will be revised once the Terminal improvements have been completed.

3.1.6 Wastewater System

Wastewater system requirements and regulations are administered and regulated by the DOH CWB. The requirements and regulations can be found in HAR Title 11, Chapter 62 (HAR 11-62; DOH, 2004b). The purpose of these regulations is to ensure that the use and disposal of wastewater and wastewater sludge do not contaminate or pollute valuable water resources, do not give rise to public nuisance, and do not become a hazard or potential hazard to public health, safety, and welfare. The Terminal is connected to the municipal sewer system that services Nawiliwili Harbor and is in compliance with HAR 11-62.

3.1.7 Hawaii Emergency Planning and Community Right-to-Know Act

Facilities that store certain chemicals, including petroleum products, in significant quantities have reporting requirements on both state government and county levels. The requirements for these facilities are contained within the Hawaii Emergency Planning and Community Right-to-Know Act [HEPCRA], which is set forth in HRS 128E (DOH, 1993). The purpose of HEPCRA was to set up a framework for preparing for responses to releases of hazardous materials. The intent of the law was to implement the requirements under the federal Emergency Planning and Community Right-to-Know Act [EPCRA].

The reporting requirements under HEPCRA include the annual submittal of a Chemical Inventory Form to the DOH. The purpose of the Chemical Inventory Form is to provide the DOH with information concerning the specific chemicals stored at a facility that fall under HEPCRA and their quantities. The Terminal stores petroleum products in quantities that require reporting under HEPCRA. Completed Chemical Inventory Forms are submitted to the DOH on an annual basis.

3.1.8 Hawaii Environmental Response Law

To establish the legal requirements for responding to releases of hazardous substances, the Hawaii Environmental Response Law [ERL] was enacted. The requirements of the ERL are set forth in HRS 128D (DOH, 1988). The ERL is administered and regulated by the DOH HEER Office. The rules for implementing the ERL can be found in HAR Title 11, Chapter 451 (HAR 11-451; DOH, 1995), also called the *State Contingency Plan* [SCP]. Part of the intent of the law was to create a Hawaii version of the federal Comprehensive Environmental Response, Compensation and Liability Act [CERCLA] (aka *Superfund*).

The procedures for responding to releases at the Terminal are contained within the SPCC Plan (see Sections 3.1.3 and 4.2.2.2 of this report), the General Response Plan (see Section 4.2.2.3 of this report), and the SWPC Plan (see Sections 3.1.5 and 4.2.2.1 of this report). The release response and reporting requirements under the SCP are followed strictly.

3.1.9 Air Quality Standards

Air quality standards are administered and regulated by the DOH Clean Air Branch [CAB]. The requirements and rules can be found in HAR Title 11, Chapters 59 (HAR 11-59; DOH, 2001) and 60.1 (HAR 11-60.1; DOH, 2014a). The purpose of these standards is to protect public health and welfare and to prevent significant deterioration of air quality.

The Terminal is not a significant source of air pollution. The main source of air pollution at the Terminal is vapors escaping from the fuel storage and transfer (i.e., piping) system, particularly during gasoline unloading at the TTLR. The other sources of emissions are the diesel generator and the flare. The flare was installed to serve as a control device for gasoline, naphtha, and ethanol vapors generated at the TTLR. The generator was installed as a supplemental power source, which will be replaced, in whole or in part, by a permanent power supply during future Terminal improvements. The generator is powered by ultra-low sulfur diesel fuel to mitigate potential sulfur oxide [SO_x] emissions.

In conjunction with the Terminal improvements, a covered source permit [CSP] for air emissions (DOH, 2014e) was obtained from the DOH CAB to replace the non-covered source permit formerly in place. The CSP addresses the increased volume of fuel stored in the six portable tanks, the volume of fuel that will be stored in the two future larger tanks, emissions from the diesel generator, and emissions reductions by the flare. A compliance plan, an air quality assessment, emissions calculations, and air modeling are contained in the permit application (Mid Pac Petroleum [MPP], 2014), which is included in Appendix E. The CSP application was approved by the DOH CAB and the Terminal was issued CSP No. 0370-02-C. A copy of the CSP is included in Appendix E.

3.1.10 Transportation of Hazardous Materials

The transportation of hazardous materials, including petroleum products, is regulated by the DOT. The requirements and rules can be found in 49 CFR 130 and 49 CFR 172 (DOT, 2014a, 2014b). The purpose of these regulations is to protect public health and welfare and to prevent releases at transportation-related facilities and from vehicles transporting hazardous materials.

The Terminal is required to provide and implement a Spill Response Plan (see Section 4.2.2.5 of this EA) in accordance with the DOT regulations set forth in 49 CFR 130.31 (DOT, 2014a). The DOT Spill Response Plan serves as both a written response plan and an emergency response plan for the transportation of hazardous materials (e.g., gasoline, jet fuel, diesel fuel).

3.2 SOCIAL AND ECONOMIC POLICIES, PLANS, AND CONTROLS

3.2.1 Kauai Commercial Harbors 2025 Master Plan

The Kauai Commercial Harbors 2025 Master Plan (DOT, 2001) is a guide to develop, maintain and enhance Kauai's commercial harbor system to ensure its efficient, safe, accessible and economical operations. The Terminal is consistent with the objectives of the plan and it supports the continued development of Nawiliwili Harbor. The objectives, as stated in the plan, are as follows.

The objectives of the 2025 Master Plan are to:

- To plan the proper development of Nawiliwili Harbor and Port Allen Harbor, facilitating maritime shipments of the essential commodities required by Kauai's citizenry.

- To optimize the utilization of land and water resources committed to marine cargo and passenger operations in an economically responsible manner.

- To provide terminals, other harbor resources, and access to these facilities in locations within Nawiliwili Harbor and Port Allen Harbor in a manner that best relates to and serves Kauai in an efficient, safe, and secure manner.

- To minimize the impact on environmental quality and recreational opportunities contiguous with Kauai's port facilities.

3.2.2 Hawaii State Land Use Controls

Land in the State of Hawaii is divided into the following four classifications: (1) urban, (2) agriculture, (3) rural, and (4) conservation. Nawiliwili Harbor is designated as an urban district that operates commercial harbor activities. The Terminal and its planned activities are consistent with the prescribed land use classification for the area.

3.2.3 Kauai General Plan

The County of Kauai General Plan (County of Kauai, 2000) is a comprehensive statement of objectives and policies that outline the long-range aspirations of Kauai's residents, as well as the strategies and actions to achieve them. It is the center of a comprehensive planning process that addresses physical, social, economic, and environmental concerns affecting the County of Kauai. The plan is in the process of being updated. Numerous supporting documents have been prepared (e.g., MS Research & Marketing Services, Inc. [SMS], 2014; PBR Hawaii & Associates, Inc. [PBR], 2015; SSFM International Inc. [SSFM], 2015; Towill, 2015) and public comment is being solicited.

The General Plan and its update encourage the continued development infrastructure improvement of Nawiliwili Harbor as a major industrial center and aim to maintain sufficient land in appropriately located commercial and industrial areas to help ensure a favorable business and socioeconomic climate on Kauai. Current Terminal operations and the improvements to the Terminal are consistent with the objectives of the General Plan and they will support the policy of developing and maintaining Nawiliwili Harbor, which in turn will help alleviate the stress on Kauai's largest and most important deep water harbor.

3.3 BUILDING, GRADING, AND FIRE PERMITS

Prior to construction of the future ASTs at the Terminal and the grading associated with preparing the extension to the tank yard, building and grading permits will be obtained from the County of Kauai. If required, fire permits for the future ASTs at the Terminal will be obtained from the Kauai Fire Department prior to placing them into operation.

3.4 SECURITY

Facilities that are subject to the regulations set forth in 33 CFR 154 are also subject to USCG security requirements (33 CFR 105; USCG, 2006). In addition, because the Terminal is subject to 40 CFR 112, it also must comply with the EPA security requirements (EPA, 2015). To satisfy these requirements, an 8-foot high chain link fence surrounds the perimeter of the Terminal. Barbed wire lines the top of the fence. Steel sliding gates are located at the entrance and exit of the Terminal. The gates are locked when the Terminal is not in operation. The Terminal meets federal and state security requirements.

As part of Terminal improvements, twelve security lights have been installed. Two lights were installed at each of the four large ASTs, two lights were installed for the six portable ASTs, and two lights were installed at the TTLR.

SECTION 4 – PHYSICAL ENVIRONMENT

Industrial facilities potentially can have negative impacts on the physical environment in which they are constructed and operated and on the surrounding area. One of the principle objectives of an EA is to assess whether such impacts could be significant. The areas of potential concern that have been identified regarding the construction of Terminal improvements and the operation of the Terminal are as follows: (1) land impacts, (2) water impacts, (3) biological impacts, (4) air quality impacts, and (5) noise impacts.

4.1 CLIMATOLOGICAL CONDITIONS

Climatological conditions in the area of the Terminal consist of warm to moderate temperatures and moderate rainfall. The Terminal is windward of the prevailing northeasterly trade winds. The average annual precipitation in the area is approximately 49 inches, occurring mainly between November and April (State of Hawaii Department of Land and Natural Resources [DLNR], 1986). The adjusted mean pan evaporation rate is approximately 80 inches (DLNR, 1985). Average temperatures range from the low 60s to high 80s (degrees Fahrenheit [ºF]) (Atlas of Hawaii, 1983).

4.2 POTENTIAL LAND IMPACTS

For the purposes of the EA, potential land impacts have been divided into geological and agricultural impacts. Geological impacts are those that affect the surface and subsurface geology, such as surface and subsurface soil, surface sediment, and rock. Agricultural impacts are those that affect the land surface and shallow subsurface in those areas where agricultural activities are conducted.

4.2.1 Existing Geological, Agricultural, and Environmental Conditions

4.2.1.1 Existing Geological Conditions

The Island of Kauai is a single, highly-dissected, shield volcano, the *Kauai Shield*. Lavas erupted during the principal shield-building phase of volcanism on Kauai belong to the *Waimea Volcanic Series* (Macdonald et al., 1960, 1983). Following formation of the shield, there was a protracted period of volcanic quiescence and erosion, after which volcanism was renewed. Lavas erupted during the post-erosional stage of volcanism belong to the *Koloa Volcanic Series* (Macdonald et al., 1960).

During shield-building volcanism, a small caldera about 1.9 miles long formed on the southeastern flank of the Kauai Shield. This caldera, known as the *Haupu Caldera*, filled with Waimea Series lava flows. A later collapse on the eastern flank of the shield, also occurring during shield-building volcanism, formed the sub-circular caldera known as the *Lihue Basin*. The Lihue Basin filled with Koloa Volcanic Series lava flows (Macdonald et al., 1960). The Terminal lies over lavas of the Koloa Volcanic Series.

The soils in the area of the Terminal belong to the *Lihue Series* and are termed *Lihue silty clay* (Foote et al., 1972). These are well-drained soils that developed in material weathered from basic igneous rock. In a representative profile, the upper foot is dusky-red silty clay, which is underlain by four feet of subsoil consisting of a darker-red compact silty clay with a sub-angular blocky structure. Permeability is moderately rapid. Runoff is slow and the erosion hazard is slight.

In August 2012, twelve borings were drilled at the Terminal as part of an ongoing environmental investigation (EE, 2013). The borings were drilled to 10 feet below ground surface [bgs]. The subsurface sediments consisted of fine- to medium-grained sands with gravel and coralline clasts. From 2001 to 2004, a geotechnical investigation was conducted at Nawiliwili Harbor to assess the engineering properties of subsurface rock (Ernest K. Hirata & Associates, Inc. [EKH], 2004). In one of the borings drilled nearest the Terminal, the upper 22 feet of sediment consisted of silty sand with coral fragments. Underlying the silty sands down to 69 feet bgs were cobbles and boulders in a silty sand matrix. From 69 feet bgs to the bottom of the boring (84 feet bgs) was moderately weathered, highly fractured basalt.

We interpret the results of these two investigations to be consistent with the documented development of Nawiliwili Bay into Nawiliwili Harbor. The upper 22 feet of silty sand and coral fragments likely are backfill consisting of dredged spoil emplaced during the development of the Pier 2 area. The underlying 47 feet of silty sand intermixed with cobbles and boulders may be the original sediments in Nawiliwili Bay prior to backfilling. Beneath these sediments are lavas of the Koloa Volcanic Series.

4.2.1.2 Existing Agricultural Conditions

Prior to the emergence of the sugar cane industry and the development of Nawiliwili Harbor, the area of the Terminal was used for agricultural purposes by native Hawaiians, probably for the cultivation of taro (*kalo*). Niumalu, the land area adjoining the west side of the Pier 3 harbor extension, also was used for agricultural purposes. With the development of Nawiliwili Harbor, agricultural practices in the immediate area of Nawiliwili Harbor ceased.

4.2.1.3 Existing Environmental Conditions

Based on available information, the first environmental investigation within the Terminal property was conducted in 2011. Descriptions of the environmental investigations conducted to date are provided below.

July 2011 Preliminary Site Investigation

In June 2011, a preliminary site investigation (EE, 2012b) was conducted at the Terminal property in conjunction with the sale of the Terminal by Kauai Petroleum to Senter Petroleum. As part of the investigation, ten test pits were excavated using a backhoe (four outside the tank yard and six inside the tank yard), and soil and groundwater samples were collected from each pit. The groundwater samples were collected from the backhoe bucket.

The samples were analyzed for total petroleum hydrocarbons as gasoline [TPH-g] and as diesel fuel [TPH-d]; benzene, toluene, ethylbenzene, and xylenes [BTEX]; methyl-tert butyl ether [MTBE]; polycyclic aromatic hydrocarbons [PAHs]; and lead. In addition, the samples were analyzed for petroleum hydrocarbons quantitated against several other petroleum product standards, including Jet A, JP-5, kerosene, paint thinner, and transformer oil.

TPH-d, TPH-g, and PAHs were detected at concentrations above DOH environmental action levels [EALs] in both soil and groundwater (EE, 2012b). The analytical results likely under-represent the actual concentrations of these contaminants in soil and groundwater at the Terminal because the samples were improperly collected and improperly preserved. In response to the discovery of contamination, a release notification form was submitted to the DOH HEER Office and the DOH issued the release DOH Case Number 20110721-1528.

July 2012 Work Plan for Additional Investigation

In July 2012, a work plan to perform additional environmental investigation was submitted to the DOH HEER Office (EE, 2012b). The purpose of the investigation was to evaluate the nature, extent, and magnitude of gasoline- and diesel fuel-related contamination; to determine if contamination was migrating off-site; and to prepare an environmental hazard evaluation and an environmental hazard management plan.

August 2012 Release Response Investigation

In August 2012, less than 25 gallons of gasoline were released from a pressure valve at Tank 4 (EE, 2013). In response to the release, gasoline-impacted soil was excavated to 1 foot bgs and two borings were drilled at the release site to evaluate potential residual subsurface contamination. The borings were drilled to the capillary fringe of the water table (3 feet bgs), soil samples were collected from the borings, and the samples were analyzed in the field for volatile organic compound [VOC] vapors using a photo-ionization detector [PID]. VOCs were detected in all of the samples. The highest VOC vapor concentrations (791 to 1,408 parts per million [ppm]) were in the samples from the capillary fringe of the water table.

August 2012 Environmental Site Investigation

In August 2012, the proposed investigation described in the July 2012 work plan (EE, 2012b) was conducted (EE, 2013). To conduct the investigation, the Terminal property was subdivided into six lateral decision units and two vertical decision units, borings were drilled and multi-increment soil samples were collected from each decision unit, twelve monitoring wells were installed, and groundwater samples were collected from the wells. The samples were analyzed for TPH-g, TPH-d, BTEX, MTBE, and PAHs. TPH-d and PAHs were detected at concentrations above DOH EALs in both soil and groundwater (EE, 2013).

Post-August 2012 Groundwater Monitoring

Based on information provided by the DOH project manager for the release investigation, more than one additional round of groundwater sampling has been conducted at the Terminal (John Peard, DOH, personal communication). However, the analytical results for those samples have not yet been provided to the DOH and, thus, are unavailable and not part of the public record.

September 2015 Soil Assessment

Prior to the planned future installation of the two ASTs, the DOH is requiring that soil samples be collected from the areas that will be disturbed prior to initiating construction (John Peard, DOH, personal communication). Because one of the ASTs will be constructed inside the existing tank yard, an area in which soil contamination has been assessed (EE, 2013) and a liner installed, additional soil sampling at that area is not required. However, the other AST will be constructed outside of the existing tank yard. Therefore, a soil assessment in that area is required.

In September 2015, the soil assessment was conducted in the area where the AST will be constructed outside of the existing tank yard. To conduct the investigation, the area was subdivided into one lateral decision unit and three vertical decision units, borings were drilled, and multi-increment soil samples were collected from each decision unit. Evidence of petroleum hydrocarbon contamination (i.e., soil staining, petroleum hydrocarbon odors, a petroleum hydrocarbon sheen) was encountered in the borings. The samples were analyzed for TPH-g, TPH-d, VOCs, PAHs, and lead. The analytical results are being evaluated and a report is in preparation (ESI, 2015).

Summary and Evaluation of Environmental Conditions at the Terminal Property

Although environmental investigations are ongoing, general conclusions can be made based on the results of the investigations conducted thus far. We conclude that there is subsurface soil and groundwater contamination across the Terminal property that likely resulted from historical releases of petroleum products stored at the Terminal. There is insufficient information available to determine the ages of the releases. However, the relatively low concentrations of BTEX compounds are consistent with the releases not being recent.

The absence of obvious petroleum hydrocarbon contamination in vadose zone soils observed during the September 2015 soil assessment (ESI, 2015), the presence of soil contamination at the capillary fringe of the water table, and the presence of a petroleum hydrocarbon sheen on groundwater are consistent with past releases having reached groundwater and spread laterally across the property.

Free-phase petroleum product has not been detected on groundwater at the Terminal property, which reduces the potential risk of contaminants migrating off-site at concentrations that pose a significant human health or ecological risk. The low concentrations observed for the volatile compounds of greatest human health and environmental concern (i.e., BTEX) because of their relatively high solubility in groundwater also reduces this potential risk. The presence of naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene at concentrations above DOH EALs likely poses the most significant human health and environmental risk.

Based on the results of the 2012 environmental site assessment, it was concluded that petroleum hydrocarbon contamination at the Terminal property poses a potential risk to human health and the environment through direct exposure to contaminated soil and groundwater should these media be exposed during construction activities, through exposure to vapors entering buildings at the Terminal, and through contaminant migration to Nawiliwili Harbor (EE,

2013). These conclusions have not been evaluated by the DOH because only the draft report describing the results of the 2012 assessment (EE, 2013) has been submitted to the HEER Office.

4.2.2 Potential Environmental Impacts and Mitigation

Future Tank Construction. Construction of the future tanks at the Terminal is not expected to pose a significant environmental risk to the Terminal or the surrounding area. The construction will require limited excavation, grading, and compaction. It is estimated that the final grade will be the same as the current tank yard. It is not expected that there will be excavated material that will require off-site disposal.

Terminal Operations. Operations at the Terminal have not changed significantly since it was constructed sometime in the 1930s or early 1940s. Planned improvements, including installation of the two future tanks, will not change the operation of the Terminal. Thus, Terminal operations do not pose a significant environmental risk to the Terminal property or the surrounding area. The potential for adverse environmental impacts exists in the event that there is a release of oil at the Terminal or from the cargo lines. Controls have been implemented to mitigate or eliminate the potential for such releases. These controls are described in the following sections (Sections 4.2.2.1 to 4.2.2.4).

4.2.2.1 Storm Water Control

As discussed in Section 3.1.5, an NPDES permit is not required for the Terminal. However, as a conservative measure, the Terminal operates under an SWPC plan (ESI, 2013a) to ensure that storm water management operational procedures are followed and maintained. The SWPC plan identifies potential sources, sites, and causes of pollution; outlines procedures, methods, equipment, and best management practices [BMPs] to prevent the discharge of oil; and outlines response measures for dealing with releases of oil and other hazardous substances. The two principal areas of potential concern are the tank yard and the TTLR.

Engineered controls have been constructed to retain storm water within the tank yard. Accumulated storm water is released from the tank yard only under controlled situations. If the tank yard becomes filled with storm water, the water in the tank yard is inspected for evidence of petroleum contamination. Only after it has been determined that contamination is not present is the valve at the discharge sump opened and storm water allowed to be released from the tank yard.

The drain and sump collection system at the TTLR prevents storm water runoff from leaving the area. If the sump becomes filled with water following a storm event, the water in the sump is inspected for evidence of petroleum contamination. Once it has been determined that contamination is not present, the water is pumped out of the sump and allowed to infiltrate on-site.

4.2.2.2 SPCC Plan

As described in Section 3.1.3 of this report, an SPCC Plan has been prepared and implemented for the Terminal, in accordance with federal requirements (EPA, 2015). The SPCC plan identifies potential sources, sites, and causes of pollution; outlines procedures, methods, equipment, and BMPs to prevent a discharge of oil; and outlines response measures for dealing with releases of oil and other hazardous substances.

Secondary containments and divisionary structures have been constructed at the Terminal, in accordance with EPA (EPA, 2015) and USCG (USCG, 2005a, 2005b) regulations. In the event of a release of oil, the secondary containments at the tank yard and the TTLR will contain any release and prevent it from discharging from the Terminal and from reaching the underlying soil and groundwater.

4.2.2.3 Operations Manual and General Response Plan

An operations manual and general response plan has been prepared and implemented for the Terminal, in accordance with USCG regulations (USCG, 2005a, 2005b). These plans address transporting oil from a vessel to the Terminal via the cargo lines. The operations manual identifies potential sources, sites, and causes of pollution and outlines the procedures, methods, equipment, and BMPs to prevent a discharge of oil. In addition, the operations manual details the daily activities at the Terminal. The general response plan outlines the response measures for dealing with releases of oil from the cargo lines.

4.2.2.4 DOT Spill Response Plan

As described in Section 3.1.10 of this EA, a DOT Spill Response Plan has been prepared and implemented for the Terminal, in accordance with federal requirements. The intent of the plan is to provide response information for on-site and off-site releases or spills and to act as a practical easy-to-use guide. The plan includes the following information.

- For transporting oil, the DOT Spill Response Plan includes a written plan that contains the procedures and safety practices for responding to discharges that occur during transportation, the maximum potential discharge, the individuals responsible for responding to discharges, and the appropriate persons and agencies to be contacted in the event of a discharge.

- For transporting hazardous materials, the Spill Response Plan serves as an *emergency response guidance document* (49 CFR 172.602) that includes the appropriate response for each hazardous material being transported.

The DOT Spill Response Plan stresses best management practices aimed at minimizing harmful health and environmental effects associated with the release of petroleum-based products and hazardous materials. It includes the procedures for unanticipated releases, the

procedures for personnel training, a listing of the minimum necessary emergency response equipment, and outside resources.

4.3 POTENTIAL WATER IMPACTS

Waters of potential concern in the area of the Terminal include (1) shallow groundwater, (2) coastal waters, and (3) deep, basal, drinking water. Of these, shallow groundwater and the coastal waters at Nawiliwili Harbor are the principal concerns.

4.3.1 Existing Hydrogeological Conditions

Groundwater in Hawaii exists in two principal types of aquifers. The first and most important type, in terms of drinking water resources, is the basal aquifer. The basal aquifer exists as a lens of fresh water floating on and displacing seawater within the pore spaces, fractures, and voids of the basalt that forms the underlying bulk of each Hawaiian island. In parts of Kauai, groundwater in the basal aquifer is confined by the overlying caprock and is under pressure. Water that flows freely to the surface from wells that tap the basal aquifer is referred to as *artesian*.

The second type of aquifer is the caprock aquifer, which consists of various kinds of unconfined and semi-confined groundwater. Typically, the caprock consists of alternating sequences of nearly impermeable clays and coral, typified by the Honolulu-Pearl Harbor area of Oahu. This sequence separates the caprock aquifer from the basal aquifer. The impermeable nature of these materials and the artesian nature of the basal aquifer severely restrict the downward migration of groundwater from the upper caprock aquifer.

Groundwater in the area of the Terminal, which belongs to the *Hanamaulu Aquifer System* of the *Lihue Aquifer Sector*, is a basal, unconfined aquifer residing in flank lavas (Mink and Lau, 1992). It is not currently used as a drinking water source. Based on records of the drilled wells (DLNR, 1993), the basal drinking water aquifer in the area of the Terminal probably is greater than 100 feet bgs. The direction of groundwater flow in the area probably is to the south, towards Nawiliwili Harbor. Groundwater at the terminal is tidally influenced owing to its proximity to the ocean.

The nearest drinking water supply well is approximately 1.14 miles northwest and upgradient of the Terminal, and there are no water wells of any kind downgradient. Based on the distance and direction to the nearest drinking water supply wells and the depth to the basal (drinking water) aquifer, it is unlikely that contaminants originating at the terminal have impacted or could impact drinking water sources.

4.3.2 Potential Hydrogeological Impacts and Mitigation

4.3.2.1 Shallow Groundwater

In the absence of engineered controls and institutional controls (e.g., BMPs), shallow groundwater could be impacted at the Terminal should releases of oil occur. As described in Sections 1.3 and 4.2.2 of this report, engineered controls (e.g., secondary containments, tank yard liner) and BMPs (e.g., spill response plans, training) have been implemented at the Terminal to prevent and mitigate potential releases within the Terminal.

4.3.2.2 Coastal Waters

In the absence of engineered controls, the coastal waters at Nawiliwili Harbor could be impacted should releases of oil at the Terminal occur in sufficient quantity. As described in Sections 1.3 and 4.2.2 of this report, engineered controls (e.g., secondary containments, diversionary structures) and BMPs (e.g., spill response plans, training) have been implemented at the Terminal to contain possible releases within the Terminal and prevent releases from reaching coastal waters.

4.3.2.1 Basal, Drinking Water Aquifer

Based on the direction and distance to the nearest drinking water well, the probable depth to the basal (drinking water) aquifer, and the presence of shallow groundwater that is hydraulically connected to the harbor water, it is highly unlikely that releases of oil or other hazardous substances at or in the vicinity of the Terminal could impact drinking water sources.

4.4 POTENTIAL BIOLOGICAL IMPACTS

There are numerous recognized ecosystems in Hawaii. Because so many Hawaiian species are highly specialized, populations are small and many of Hawaii's plants and animals are listed as threatened or endangered species by the United States Fish and Wildlife Service. For the purposes of this EA, the following three biological communities of potential concern in the area of the Terminal have been identified: (1) floral, (2) faunal, and (3) marine.

Potential impacts to flora, fauna, and marine organisms were considered in the preparation of the ten EAs and EISs conducted for projects at the Nawiliwili Harbor area (see Table 1.2). Most of these projects involved significantly more intrusive construction work than do the future improvements at the Terminal. In addition, most of the projects were adjacent to or within Nawiliwili Harbor and, therefore, had significantly more potential to impact marine flora and fauna than will future improvements at the Terminal.

The Terminal occupies fill land that was created from spoil dredged from Nawiliwili Bay during the construction and development of the harbor (see Section 2). The native species habitats, native agricultural plots, and native (and later residential) dwellings were destroyed during the

construction of Nawiliwili Harbor. Dredging removed the massive twin reefs that formerly were in the bay. There are no identified native species remaining in the immediate area of the Terminal.

The information regarding biological organisms at Nawiliwili Harbor described below is incorporated by reference from past studies (Table 1.2).

4.4.1 Existing Biological Conditions

4.4.1.1 Floral (Plant Communities)

The Terminal property was entirely graded during its development in the 1930s or early 1940s. Only widely scattered, sparse patches of grasses and weeds are present. These conditions are consistent with the results of previous botanical surveys conducted in the Nawiliwili Harbor area. Based on the results of the 2005 botanical survey for a project conducted at Pier 3 (Okubo, 2005), which, like the Terminal property, is fill land that was constructed from dredged spoil, the following observations were made regarding the floral environment.

> "Nawiliwili Harbor is an industrial port and the project site (Pier 2 and Pier 3) is largely paved over with concrete and asphalt and hosts numerous industrial structures including fuel tanks. Therefore, plants are not expected to be found in this industrial environment. The only noteworthy vegetation seen in the project area was a lone *noni* shrub, a plant native to Polynesia and purported to have medicinal properties. Its scientific name is *Morinda citrifolia* or commonly called the Indian mulberry. It probably rooted by chance. This plant will be removed as it is not part of any landscaping scheme. The edges of the paved areas are infested with weeds: coat buttons, finger grass, and garden spurge. The weeds are controlled and eradicated from time to time."

Similarly, for the 1998 Waapa Road realignment project (NKN, 1998), which was located just west of the Terminal, the following observations were made. The Nature Conservancy reference cited in the excerpt below is from a 1997 fax memorandum (NKN, 1998).

> "Vegetation in the project area includes grasses, weeds, and koa haole."

> "No rare, threatened and/or endangered species of flora and fauna are known to inhabit the project area (The Nature Conservancy, Hawai'i Natural Heritage Program, 1997)."

For the 1991 Nawiliwili Road and Waapa Road improvements project (Environmental Communications, 1991), which was located just northeast of the Terminal, the following observations were made.

> "No endangered or threatened species of flora or fauna are found on the project site. The urban nature of the area (Residential, Industrial, and Open) preclude the existence of indigenous species of either plant or animal species.

Implementation of the proposed project will not jeopardize the existence of any endangered species, or result in the destruction or adverse modification of existing habitats in the surrounding area. The natural vegetation that is to be found include lantana, koa haole, bermuda grass, kikuyu grass, and guinea grass."

4.4.1.2 Faunal (Animal Communities)

The 2005 faunal survey (Okubo, 2005) for the Pier 3 project was conducted on land that was constructed of fill from dredged spoil, like the Terminal property. Based on the results of the survey, the following observations were made regarding the faunal environment.

> "The project site is extensively paved and graveled and is devoid of trees and plants. As such, it is not a habitat for animal wildlife except for unwelcome rodents, common to wharf areas, and stray animals that may enter the property.
>
> A number of native birds on Kauai, some classified as endangered or threatened, may be found near or fly over the project site. … Introduced birds are common to the low level community areas where food is easy to find. The absence of mongoose on Kauai has benefitted the avifauna population.
>
> Two protected mammal species may be seen in this or nearby areas. The rare Hawaiian Bat occasionally flies over the project area in search of food. The protected Hawaiian Monk Seal has been seen in various coastal areas of the Hawaiian Islands in recent years. It may enter the Nawiliwili Bay area by chance. Since it, too, is a protected species, it may not be disturbed. But the busy Nawiliwili Harbor with its industrial activities does not lend itself as a habitat for these two mammals.
>
> The green sea turtle, *honu* in Hawaiian, is another protected species that is sometimes found in waters and beaches of Kauai. The busy Nawiliwili Harbor with its ships and other sea-going crafts make this a poor habitat for the green sea turtle. It has been found on sandy beaches of Kauai shores which have provided nesting sites.
>
> Of particular concern is the Newell's Shearwater, a seabird. This endemic seabird nests in burrows in the interior highlands of the island. This bird is attracted by bright urban lights and every year several hundred of them fly into wires and buildings. While some die, others that are injured are sometimes rescued and returned to the wild. Wildlife biologists on Kauai, with the support of the public, have developed a program which has a 90% recovery rate for these injured birds. Since bright lights attract these seabirds, a procedural guide has been developed by wildlife biologists. This calls for the installation of outdoor lights to be shielded and faced downward to minimize the allure of lights. The recommendations of wildlife biologists are found in this guide: "The Newell's

> Shearwater Light Attraction - A Guide for Architects, Planners and Resort Managers" available at the Department of Land and Natural Resources. These recommendations will be included in this project."

For the 1998 Waapa Road realignment project (NKN, 1998), located just west of the Terminal, the following observations were made. The Nature Conservancy reference cited in the excerpt below is from a 1997 fax memorandum (NKN, 1998).

> "Fauna species that typically inhabit the near shore environment include the gull, cardinal, dove, sparrow, feral cat, feral dog, mouse, and rat."

> "No rare, threatened and/or endangered species of flora and fauna are known to inhabit the project area (The Nature Conservancy, Hawai'i Natural Heritage Program, 1997)."

For the 1993 Pier 1 improvements project (DOT, 1993b), which was located just southeast of the Terminal, the following observations were made.

> "The proposed improvements will be done in the water within the existing harbor and on land within the existing container yard. It will not endanger any marine life or other wildlife in the area."

> "The construction of the project will not … Affect any rare, threatened, or endangered species of animals, plants, or habitats"

For the 1991 Nawiliwili Road-Waapa Road improvements project (Environmental Communications, 1991), located just northeast of the Terminal, the following observations were made.

> "No endangered or threatened species of flora or fauna are found on the project site. The urban nature of the area (Residential, Industrial, and Open) preclude the existence of indigenous species of either plant or animal species. Implementation of the proposed project will not jeopardize the existence of any endangered species, or result in the destruction or adverse modification of existing habitats in the surrounding area."

4.4.1.3 Marine (Ocean Floral and Faunal Communities)

The 2004 marine environmental assessment (Sea Engineering and AECOS, Inc. [SE&A], 2004) for the Pier 3 project (Okubo, 2005) identified numerous marine organisms in Nawiliwili Harbor. Based on the results of the assessment, the following observations were made regarding the marine environment (Okubo, 2005).

> "A biological marine survey resulted in recording of 53 taxa within the survey area. These were identified as being 4 algae, 26 invertebrates and 23 fishes

genus or species. …. Invertebrates included rock mussel and fanworm; rarely observed were tube-sponge, banded shrimp, lobster, octopus, black urchin and sea cucumber. Two benthic environments were examined: 1) the pier pilings of the docks; and 2) the rock and ruble (*sic*) bottom. Thirty five species occurred in the pier habitat and thirty one in the bottom with seventeen species common to both.

Some of the common fishes observed during the survey included the *mamo*, Abudefduf abdominalis; *aholehole*, Kuhilia sandvicensis; *moana*, Parupeneus multifasciatus: *to'au*, Lutjanus fulvus: *weke'ula*, Mulloidichthys vanicolensis; *ulua*, Carangoides orthogrammus; and *kahala*, Seriola dumerili. The *akule*, Selar crumenophthalmus also can be found here.

Additional fish species observed were; Mulloidichthys flavolineatus, Parupeneus porphyreus, Chaetodon auriga, Stegastes fasciolatus, Thalassoma duperrey, Scarus sp. juveniles, Acanthurus dussumieri, Acanthurus triostegus, Ctenochaetus strigosus, Arothron hispidus, Canthigaster jactator and a large specimen of the introduced grouper, Cephalopholis argus."

In the marine environmental assessment, the following observations were made (SE&A, 2004).

"Most of the organisms observed were confined to the shallow depths. The biota in the harbor became noticeably sparse below 2 m (6 ft) where rocks were covered with blue-green algae or fine sediment with increasing depth. At the west end of the study area the bottom is apparently more exposed to waves and the substratum consists of scoured boulders on a flat bottom to 1 m (3 ft) depth and coral rubble and sand at depths below 2 m (6 ft)."

"Biologically, the project site is a typical harbor environment, with a high proportion of introduced invertebrates and an almost total lack of reef corals or other sensitive marine organisms that would be adversely impacted by construction related sedimentation and turbidity. Upon completion of pier construction there would follow a period of rapid settlement of new surfaces provided by the pier pilings, resulting in a dense fouling community similar to that which now occurs on the existing pilings. Other bottom substrata such as dredged reef and rock rubble would most likely assume a similar assemblage of benthic organisms as presently occur, with hardy species of corals and other reef organisms in low abundance. The fish community, which is presently quite abundant and diverse, would likely be temporarily disturbed by construction activities but thereafter would recover to its present composition.

Endangered Species - No State of Hawaii or federally protected species (Federal Register, 1999, 2001; DLNR, 1981) are regarded as normally occurring in the project area. The honu or Pacific green sea turtle (*Chelonia mydas agassizi*) is the only listed species that might be observed occasionally within Nawiliwili

> Harbor, although the project area does not provide even feeding habitat for this threatened species. The honu is protected by both State and Federal endangered species laws: listed as a threatened species by both the Department of Land and Natural Resources (DLNR, 1981) and U.S. Fish and Wildlife Service (CFR, 1999).
>
> Given the lack of contaminants in the sediments, the lack of sensitive marine organisms, and the periodic influx of turbid, brackish waters from the river, the proposed project should have minimal adverse impacts on the local marine environment."

The 1993 environmental assessment for improvements to Pier 1 (DOT, 1993b) was a project located just southeast of the Terminal. Based on the results of the assessment, the following observations were made regarding the effect of the project on the marine environment.

> "The proposed improvements will be done in the water within the existing harbor and on land within the existing container yard. It will not endanger any marine life or other wildlife in the area."
>
> "No endangered wildlife live in the harbor."

The 1973 environmental assessment for construction of the small boat harbor (Department of the Army, 1973) was a project located on the south side of the fill land constructed from dredged spoil and later developed into Pier 3. Based on the results of the assessment, the following observations were made regarding the effect of the project on the marine environment.

> "The proposed construction will not alter the contributions of fresh water flow and nutrient sources of the Huleia River, nor will it significantly alter the transport and mixing characteristics of the inner harbor and Kalapaki Bay. Therefore, the estuarine conditions in the bay as a whole should be unchanged and the estuarine biological communities should not be adversely affected, with the exception of the crab community in the immediate project area."

4.4.2 Potential Biological Impacts and Mitigation

Probably the most important potential biological impact identified in the EAs and EISs conducted in the Nawiliwili Harbor area is the danger to the Newell's Shearwater bird posed by night lighting (Okubo, 2005). This species is attracted to coastal lights and can crash into overhead power lines, other overhead lines, and vertical man-made structures. As of 1997, only about 20 colonies were known in Hawaii (Ainley et al., 1997). These birds are particularly susceptible to night lighting because they fly to and from their colonies only at night.

To mitigate the potential hazard to the Newell's Shearwater, the security night lighting at the Terminal conforms to the guidelines for wildlife lighting issued by DLNR and the State of Hawaii Department of Forestry and Wildlife [DOFAW] (DLNR, 2015). The lights used at the Terminal

are *downlights* that are shielded and mounted on poles substantially shorter than the surrounding ASTs.

Based on information contained in the floral, faunal, and marine biota assessments that have been conducted at Nawiliwili Harbor as part of EAs and EISs, there are no threatened, endangered, or endemic floral or faunal species in the area of the Terminal. The floral and faunal communities observed in the assessments indicate that the Nawiliwili Harbor area is a highly degraded environment. Of these assessments, those conducted as part of the environmental assessment for the Pier 3 improvements (SE&A, 2004; Okubo, 2005) are the most comprehensive.

We conclude that the Terminal has not, does not, and will not have a significant impact on the already significantly modified biological conditions in the Nawiliwili Harbor area. The findings of the 2005 EA (Okubo, 2005) support this conclusion and are provided below.

> "Being an industrial site for harbor uses, it is not considered a habitat for animal or plant species. The area is highly utilized for harbor operations and does not support any animal or plant species. However, animal species such as the green sea turtle may occasionally venture into the harbor."

Although the green sea turtle may occasionally enter the harbor, the Nawiliwili Harbor area, the Terminal in particular, does not provide this animal a feeding habitat. The possibility that Terminal operations or future terminal improvements pose a threat to this species is discounted.

4.5 POTENTIAL AIR QUALITY IMPACTS

Air pollution is caused by many different man-made and natural sources. To determine if emissions generated at the Terminal would adversely affect air quality conditions, potential air quality impacts were evaluated in accordance with national and state air quality standards.

4.5.1 Existing Air Quality Conditions

The DOH CAB has identified the following four potential sources of air pollution: (1) industrial sources, such as power plants and refineries, (2) mobile sources, such as motor vehicles, (3) agricultural sources, such as cane burning, and (4) natural sources, such as wind-generated dust and volcanic activity (DOH, 2013, 2014b, 2015b). Air pollution at Nawiliwili Harbor consists primarily of vessel exhaust, vehicle and heavy equipment exhaust, emissions from cargo, and dust generated from unpaved ground. The predominant air pollution concerns have been related to cruise ship exhausts (DOH, 2015a). Prevailing trade winds in the area tend to result in air pollutants migrating onshore, impacting nearby residences (DOH, 2015a).

Ambient air in Hawaii is monitored for gaseous and particulate air pollutants by the DOH CAB. The EPA has set National Air Quality Standards [NAQS] for air pollutants, including carbon monoxide, nitrogen dioxide, sulfur dioxide, lead, ozone, and particulate matter. The Niumalu monitoring station, which is in the vicinity of Nawiliwili Harbor, measures SO_x, nitrogen oxides

[NO_x], and particulate matter [PM] ($PM_{2.5}$; less than 2.5 microns in diameter). The most recent air quality data from the Niumalu monitoring station indicates that the federal NAQS and the State Ambient Air Quality Standards [SAAQS] are being met in the vicinity of the Terminal, with annual trends remaining stable since 2012. Air quality data collected from 2012 to 2014 at the Niumalu monitoring station are summarized in Table 4.1.

4.5.2 Potential Air Quality Impacts and Mitigation

Potential negative air quality impacts at the Terminal can be divided into two principal concerns. The initial concern will be those potential impacts associated with construction of the two ASTs at the Terminal. The long-term concern will be those potential impacts associated with normal operation of the Terminal.

4.5.2.1 Air Quality Impacts and Mitigation During Construction

Construction of the two ASTs at the Terminal has the potential to generate short-term air quality emissions in the form of dust. BMPs will be implemented during construction to ensure that dust emissions are minimized during construction.

4.5.2.2 Air Quality Impacts and Mitigation During Normal Terminal Operation

Diesel Generator. Normal operation of the Terminal will generate air emissions. A source of emissions is the diesel generator. The generator is operated only during the time that tanker trucks are being loaded and the flare is being used. It is anticipated that the generator will be powered with ultra-low sulfur diesel fuel. The anticipated emissions are those associated with the combustion of diesel fuel. The principal concerns are carbon monoxide, NO_x, SO_x, $PM_{2.5,}$ and PM_{10} (particulate matter less than 10 microns in diameter), lead, and VOCs.

Flare. Another source of emissions is the flare. These emissions are comparable to those from the generator. The anticipated emissions are those associated with the thermal destruction of VOCs associated with fuel vapors, particularly those from gasoline. The principal concerns are VOCs, in particular those that are hazardous air pollutants [HAPs].

Emissions Testing and Modeling. In September 2014, as part of the new CSP application for the Terminal (MPP, 2014), emissions modeling was conducted to assess the air pollutants that are anticipated to be generated. The results confirm that the generator (Magna Plus 1800 Kilowatt Generator) and the flare (John Zink LHT Trailer Mounted Air Flare System) are the main sources of air pollution at the Terminal. The total HAPs emissions are below federally regulated levels (MPP, 2014). The results of the modeling are summarized in Table 4.2.

Based on the results of the modeling, the DOH CAB approved the CSP application. In December 2014, the DOH CAB issued the Terminal CSP No. 0370-02-C (DOH, 2014e).

4.6 POTENTIAL NOISE IMPACTS

Noise pollution can result from industrial operations. To determine if noise generated at the Terminal would adversely affect noise quality in the area, potential noise impacts were evaluated in accordance with state noise control standards (DOH, 1996b).

The maximum permissible sound level (daytime) for areas zoned as industrial is 70 decibels [dBA], for areas that are public space or zoned as residential 55 dBA, and for areas used as resorts or for business/commercial use 60 dBA. This means that sound levels generated at a facility within that zoning district should not exceed 70 dBA at or beyond the property line (DOH, 1996b). The maximum permissible sound level can be exceeded for short periods but not for more than ten percent of the time within any twenty minute period. The maximum permissible sound level for impulsive noise is 10 dBA above the maximum permissible sound level. Backup alarm devices on vehicles are exempt from the maximum permissible sound levels, where such devices are required by the Occupational Safety and Health Administration [OSHA], (DOH, 1996b).

4.6.1 Existing Noise Conditions

In 2003, a noise study was conducted as part of the Segmented Pier 3 Improvements at Nawiliwili Harbor (Okubo, 2005). Ambient noise levels were measured at five areas that were identified as the closest areas considered to be sensitive to noise (i.e., residences, parks, recreational areas, and resorts).

TABLE 4.1
Air Quality Data for the Niumalu Monitoring Station (2012 to 2014)
Kauai Petroleum Fuel Terminal
Draft Environmental Assessment

Air Pollutant	2012	2013	2014	SAAQS	NAQS
Carbon Monoxide					
Number of Measurements (1-hour occurrences)	8,784	2,760	-		
Valid Measurements (1-hour occurrences)	7,570	2,670	-		
Highest Value Recorded (ppm)	1.2	2.4	-	9	35
Annual mean (ppm)	0.5	0.5[1]	-	n/a	n/a
Number of Times SAAQS Exceeded	0	0	-		
Number of Times NAQS Exceeded	0	0	-		
Nitrogen Dioxide					
Number of Measurements (annual occurrences)	8,784	8,760	8,760		
Valid Measurements (annual occurrences)	7,430	8,074	7,756		
Highest Value Recorded (ppm)	0.042	0.040	0.045	n/a	0.100
Annual mean (ppm)	0.003	0.002	0.002	0.04	0.053
Number of Times SAAQS Exceeded	0	0	0		
Number of Times NAQS Exceeded	0	0	0		
$PM_{2.5}$					
Number of Measurements (24-hour occurrences)	366	365	365		
Valid Measurements (24-hour occurrences)	346	356	326		
Highest Value Recorded (µg/m³)	16.2	13	14.5	n/a	35
Annual mean (µg/m³)	6.8	3.9	4.5	n/a	12
Number of Times SAAQS Exceeded	0	0	0		
Number of Times NAQS Exceeded	0	0	0		
Sulfur Dioxide					
Number of Measurements (3-hour occurrences)	2,928	2,920	2,920		
Valid Measurements (3-hour occurrences)	2,541	2,748	2,478		
Highest Value Recorded (ppm)	0.057	0.029	0.046	0.5	n/a
Annual mean (ppm)	0.002	0.001	0.002	0.03	n/a
Number of Times SAAQS Exceeded	0	0	0		
Number of Times NAQS Exceeded	0	0	0		

Sources: DOH, 2013, 2014b, 2015b.

$PM_{2.5}$	Particulate Matter less than 2.5 microns in diameter.
SAAQS	State Ambient Air Quality Standard.
NAQS	National Air Quality Standard.
[1]	Does not meet summary criteria, < 75% data recovery in year.
µg/m³	micrograms per cubic meter.
ppm	parts per million.
-	Value not recorded.
n/a	not applicable – no standard.

TABLE 4.2
Calculated Emission Rates for Anticipated Air Pollutants
Kauai Petroleum Fuel Terminal
Draft Environmental Assessment

Air Pollutant	Diesel Generator					Flare				
	1-hour	3-hour	8-hour	24-hour	Annual	1-hour	3-hour	8-hour	24-hour	Annual
Carbon Monoxide	769.39	-	692.45	-	-	137.11	-	123.40		-
Lead										
NO_2	79.15	-	-	-	15.83	93.58	-	-	-	18.72
SO_2	1.42	1.42	-	0.85	0.28	-	-	-	-	-
PM_{10}	-	-	-	2.63	0.88	-	-	-	11.07	3.69
$PM_{2.5}$	-	-	-	2.63	0.88	-	-	-	11.07	3.69

Source: MPP (2014). Emission rates are maximum concentrations in micrograms per cubic meter.
NO_2 Nitrogen Dioxide.
SO_2 Sulfur Dioxide.
PM_{10} Particulate Matter <10 microns in diameter.
$PM_{2.5}$ Particulate Matter <2.5 microns in diameter.
- Value not recorded.

TABLE 4.3
Summary of Ambient Noise Levels at Sensitive Receptors
Kauai Petroleum Fuel Terminal
Draft Environmental Assessment

Area	Description	Median Sound Levels (dBA)	Sound Level Exceeded 10% of the Time (dBA)	Maximum Sound Level (dBA)
1	Niumalu Residences	47	52	76
2	Nawiliwili Small Boat Harbor	50	57	79
3	Niumalu Inn Area	50	61	79
4	Banyan Harbor Resort	58	63	94
5	Kauai High School and Community School	52	55	68

Data from Okubo (2005).
dBA Decibel.

The following areas are considered to be sensitive to noise: (1) Niumalu residential area, (2) Nawiliwili Small Boat Harbor, (3) Niumalu Inn area, (4) the resort area north of the Matson container yard (i.e., Banyan Harbor Resort), and (5) the Kauai High School and Community School for Adults area. These areas also are the closest noise-sensitive areas to the Terminal. The locations of the areas are shown in Figure 3. The measured ambient noise levels are summarized in Table 4.3. The following noise sources and levels for ambient noise were identified:

> "Measured background ambient noise levels were controlled by motor vehicle traffic, equipment within the Young Brothers Pier area, tour helicopters, jet aircraft departing Lihue Airport, birds, roosters, and mechanical equipment. In the areas removed from roadways, such as at Locations A, B, and E, background ambient noise levels were relatively low, and typically ranged between 43 and 68 dBA. In the area near roadways, such as at Locations C and D, motor vehicle traffic noise controlled the background ambient noise levels, which typically ranged between 43 and 72 dBA."

4.6.2 Potential Noise Impacts and Mitigation

Currently, there are no significant noise sources at the Terminal. The potential future negative noise impacts will be the short-term concerns associated with construction of the two future ASTs and the long-term concerns associated with the future normal operation of the Terminal.

4.6.2.1 Noise Impacts and Mitigation During Construction

Construction of the two future ASTs at the Terminal has the potential to generate short-term noise impacts. BMPs will be implemented to ensure that noise is minimized during construction. It is anticipated that noise generated during construction will not exceed the maximum

permissible sound level. The construction will be taking place above-ground and no pile driving is planned. Therefore, no noise or ground vibration from pile driving is anticipated.

The main source of noise during construction likely will be from heavy trucks that transport materials. Other short-term sources of noise likely will be related to welding and crane operation. The closest noise-sensitive area is the resort north of the Matson container yard (Area 4, Figure 3), which is approximately 740 feet northeast of the Terminal. The area immediately surrounding the Terminal is industrial and Nawiliwili Harbor is the major shipping hub on the island with major truck traffic.

Based on information regarding the propagation and attenuation of noise from diesel trucks (Okubo, 2005), the 90 to 100 dBA source noise levels characteristic of diesel trucks will be attenuated to approximately 62 dBA at a distance of 700 feet. This 62 dBA noise level is likely to be drowned out by the noise from the neighboring Matson truck traffic and the noise from trucks and other vehicles on the roadways between the harbor area and the resort. In addition, the surrounding building structures, vegetation, and cliffs separating the harbor and the resort will act to further mitigate noise from the Terminal to below maximum permissible sound levels prior to reaching the resort.

4.6.2.2 Noise Impacts and Mitigation During Normal Terminal Operation

Following construction of the two future ASTs, it is anticipated that noise levels will return to current levels. The long-term concern associated with future noise levels during normal Terminal operations can be dismissed because the two new ASTs are not significant sources of noise and, therefore, will not increase noise levels at the Terminal. The most significant source of noise during normal Terminal operations is the generator.

Noise Levels at the Nearest Sensitive Receptors. Estimates were made of noise levels at the five closest noise-sensitive areas that would be the result of operating the generator. These noise-sensitive areas are 820 to 3,040 feet away. In addition to the assumptions listed above, calculated noise levels were made using the conservative assumptions listed below.

- There is no attenuation of noise by surrounding man-made structures, vegetation, or terrain.
- There is no attenuation of noise by atmospheric conditions.
- The source of the noise directly faces each of the sensitive areas.

The estimated noise levels at the five nearest noise-sensitive areas range from 48 to 60 dBA (Table 4.4). With the exception of Kauai High School and Community School, these levels are at or below the maximum permissible sound levels, which range from 55 to 70 dBA. The calculated sound levels are close to the previously determined ambient median sound levels. Surrounding structures, vegetation, and the cliffs separating the harbor and the resort will be noise-mitigating and likely will reduce the noise levels from the Terminal further. Therefore, the noise generated at the Terminal should not be apparent at these noise-sensitive areas.

TABLE 4.4
Calculated Sound Levels at the Nearest Sensitive Receptors
Kauai Petroleum Fuel Terminal
Draft Environmental Assessment

Area	Description	Distance (feet)	Calculated Sound Level (dBA)	Ambient Median Sound Level (dBA)*	Maximum Permissible Sound Level (dBA)
1	Niumalu Residences	3,040	48	47	55
2	Nawiliwili Small Boat Harbor	2,270	51	50	70
3	Niumalu Inn Area	2,950	48	50	60
4	Banyan Harbor Resort	820	60	58	60
5	Kauai High School and Community School	1,350	56	52	55

* Data from Okubo (2005).
dBA decibel.

Although the noise levels calculated for Kauai High School and Community School exceed the maximum permissible sound level by 1 dBA, note that the calculation is based on conservative and likely unrealistic assumptions. The propagation of noise is attenuated by competing noise from other sources and by man-made structures, vegetation, terrain, and atmospheric conditions. Attenuation of the generator noise by significantly more than 1 dBA is expected because all of these features are present between the Terminal and the High School and Community School. Thus, it is highly unlikely that the noise from the generator will be apparent at the High School and Community School.

SECTION 5 – SOCIAL ENVIRONMENT

5.1 LAND USE

To determine if the Terminal would adversely affect land use in the area, current land use in the vicinity of the Terminal was evaluated and compared with the use of the Terminal and its operations.

5.1.1 Existing Land Use

The Terminal property and surrounding land to the north, west, south, and east are zoned as *Urban* by the State of Hawaii (Figure 3). The State Land Use Commission designates the area as zoned as *I-G Industrial-General* (County of Kauai, 2015; Okubo, 2005) and the Kauai General Plan Land Use Designation is for *Transportation* (County of Kauai, 2015).

The Terminal property and the surrounding Nawiliwili Harbor parcels are owned by the State of Hawaii. The area surrounding the property is occupied by heavy industrial operations, including the Matson overseas cargo container yard to the east, the DOT Harbors Division Pier 2 shed to the south, an empty parcel (formerly occupied by the Kauai Sugar molasses storage facility) to the west, and the Reynolds Recycling facility to the north. Further west is the Aloha Petroleum Kauai Fuel Terminal and the pier frontage.

According to the Kauai General Plan Land Use Designation (County of Kauai, 2015), the area to the east, at Kalapaki, is zoned as *Resort*. The area to the north and west are zoned as *Urban Center*. The area to the south is zoned as *Transportation*. The nearest area that is zoned *Residential* is approximately 800 feet to the west; however, the land is undeveloped and not occupied. The closest residences are in Niumalu, approximately 0.6 miles to the southwest.

According to the Lihue Community Plan (County of Kauai, 2015), the recommended future land use for the Nawiliwili Harbor area is industrial, with an urban center to the north of the Terminal. Based on available planning documents, the Terminal property and surrounding area will continue to be used for heavy industry, and that it is likely that heavy industrial use of the Nawiliwili Harbor parcels will continue for the foreseeable future.

5.1.2 Potential Land Use Issues

The Terminal has not had a significant impact on existing land use in the Nawiliwili Harbor area. Future improvements to the Terminal do not involve changes in its principal operations and, therefore, are not expected to have a significant impact on existing land use. The area of the Terminal is zoned for urban and industrial use, and its current and future use are consistent with the types of operations conducted at surrounding businesses and facilities. The Terminal will aid in the implementation of the Kauai General Plan and the Lihue Community Plan, as the common goal of both plans is for continued use of Nawiliwili Harbor as one of the State's most important industrial areas.

5.2 SOCIAL AND ECONOMIC ISSUES

To determine if the Terminal adversely affects social and economic conditions in the surrounding area and across the State, current conditions were examined and compared with projected future conditions.

5.2.1 Existing Social and Economic Conditions

Nawiliwili Harbor serves as the primary commercial harbor for Kauai and is one of the State's most important heavy industrial harbors and fuel transfer points. Several of the most important industrial companies doing business on Kauai, including Hawaii Independent Energy (formerly Tesoro Hawaii), Chevron, Aloha Petroleum, Kauai Petroleum, Hawaiian Cement, Young Brothers, and Matson, use Nawiliwili Harbor to transfer oil or cargo from vessels to their facilities. The harbor is also the primary cruise terminal on Kauai. According to a 2002 study, Kauai's harbors appear to be budget-constrained and at capacity (Carter & Burgess, 2002).

The Terminal is economically important because it provides fuel to the neighboring Lihue airport and to agricultural and commercial businesses on Kauai. The Terminal can deliver fuel on demand with short notice to Lihue businesses in need. The visitor industry provides the largest number of jobs on Kauai (30 to 35 percent), and visitors are in need of transportation while on the island, raising the demand for fuel.

According to the Kauai General Plan Update on Socioeconomic Analysis and Forecast (SMS, 2014), the projected population growth on Kauai between 1990 and 2035 is 31.2 percent (from 51,676 in 1990 to 88,013 in 2035). The Lihue District is projected to experience the largest growth on the island (County of Kauai, 2015). The estimated annual increase in the number of visitors on Kauai is 1 percent. With this increase in population and visitors, there is expected to be an accompanying increase in fuel demand by Kauai residents, businesses, and visitors.

5.2.2 Potential Social and Economic Impacts

There have been no apparent social impacts related to the Terminal since its original construction in the 1930s or early 1940s. The Terminal has had a positive economic impact by providing fuel to the Kauai island business and residential community. In addition, by providing fuel to the Lihue Airport, the Terminal contributes to the facilitation of business and visitor traffic to the island.

It is not anticipated that future planned improvements to the Terminal (e.g., the addition of two ASTs) will have a social impact on the harbor area because the improvements will not change the nature of Terminal operations. Future planned improvements to the Terminal likely will have a positive economic impact. The addition of the two ASTs will improve the Terminal's storage capacity, which will enable it to meet the higher demands for fuel projected by the future increase in Kauai residents, visitors, and businesses. Also, the additional storage capacity is expected to reduce the number of fuel barge deliveries, thus reducing the traffic at Pier 2 and allowing for additional cargo deliveries and cruise ship anchorages.

5.3 SITE HISTORY AND CULTURAL BACKGROUND

5.3.1 General Physio-Cultural Setting

The Terminal is located in the *ahupuaa* (a strip of land stretching typically from the mountains to the sea) of Nawiliwili, which lies within the *moku* of Puna. Puna is now designated the Lihue District. The five southernmost ahupuaa in Puna are (from south to north, along the coast) Kipu, Haiku, Niumalu, Nawiliwili, and Kalapaki. Nawiliwili is bounded on the south by Niumalu, on the west by Haiku, and on the northeast by Kalapaki.

Nawiliwili Bay (and Harbor) can be thought of as a junction where three ahupuaa intersect. Niumalu encompasses the south and west sides of the bay, Nawiliwili encompasses the northwest side of the bay, and Kalapaki encompasses the north and northeast sides of the bay. Nawiliwili Bay also is a confluence of sorts for five streams, all of which flow into or formerly flowed into the bay.

The largest stream that enters Nawiliwili Bay is Huleia (formerly known as Hulaia, a name that refers to a legend involving Pele and Kamapuaa), which enters the west end of the bay. Puali Stream enters the bay north of Huleia, next to Niumalu Park. Papalinahoa Stream formerly entered the bay in an area that was backfilled and now is covered by Pier 2. Nawiliwili Stream enters the bay at the northwest corner of Kalapaki Beach. Koenaawanui formerly entered the bay at the middle of Kalapaki Beach. It has been re-channeled underground beneath the hotels. There are some references that cite two streams in that area, Koenaawanui and Koenaawaiki.

This productive setting of fresh water resources, fertile land, and plentiful ocean resources provided a rich setting for the native population to thrive. Loi for growing taro (*kalo*) and fish ponds populated the west and north sides of Nawiliwili Bay. The abundant fish population in the bay created a strong fishing tradition and culture that is still present today. The bay area is prominent in Hawaiian legends (e.g., the Menehune, Pele and Kamapuaa) and with historical figures (e.g., Kawelo, Kaikioewa, Kamamalu).

5.3.2 Cultural and Historical Background

By ancient custom, lands in the Hawaiian Islands were controlled by conquering chiefs, who in turn made assignments to lesser chiefs, and so on down to commoners. After Kamehameha I conquered the islands near the end of the eighteenth century, he controlled almost all the land in the kingdom. By the time of his death in 1819, problems were beginning to arise concerning ownership of land. Newcomers who wanted ownership in fee of the lands where they resided brought much of this pressure. Little was done about land during the reign of Liholiho (Kamehameha II), but during that of Kauikeaouli (Kamehameha III) a revolution occurred. The *Great Mahele*, or division of 1848, divided lands between the King, the government, and the people. In 1850, the Kuleana Act was enacted, which enabled foreigners to own land.

Following enactment of the Kuleana Act, much of Nawiliwili, Niumalu, and Kalapaki were awarded to Kamamalu, the wife of Liholiho. It appears that land commission awards were made to individuals for land currently occupied by Nawiliwili Harbor improvements, including the area of the Terminal. Eventually, much of the area around the bay was acquired by the Territory of Hawaii, possibly in the early 1900s. The U.S. Government took possession of the harbor property, possibly at or sometime before the bombing of Pearl Harbor in 1941. By 1947, the land had been returned to the Territory of Hawaii. Following statehood, the harbor property has been owned by the State of Hawaii.

Comprehensive cultural assessments (CSH, 2004, 2008) were performed in conjunction with two of the EAs (Okubo, 2005; Towill, 2008) for projects at Nawiliwili Harbor. The 2008 cultural impact assessment is the more complete and comprehensive of the two. Information regarding the cultural background at Nawiliwili Harbor, as described and cited below, is incorporated by reference from these two assessments.

The cultural impact assessment for the 2008 EA (CSH, 2008) provides considerable detail regarding the Nawiliwili Harbor area prior to development, the cultural and historical background of the area, and past and present cultural practices. It includes the findings from previous cultural assessments, including the one performed for the 2005 EA (CSH, 2004; Okubo, 2005). The findings of the 2008 cultural impact assessment are cited below.

1. “The ahupua‘a of Nāwiliwili, Niumalu, and Kalapakī were permanently inhabited and intensively used in pre-Contact and early historic times, based on a large amount of archaeological, historical, and oral-history documentation. The coastal areas were the concentration of permanent house sites and temporary shelters, heiau, including shrines to fishing gods, and numerous trails. There were fishponds at Kalapakī and Nāwiliwili. There were numerous house sites and intensive cultivation areas within the valley bottoms of Nāwiliwili and Hulē‘ia Streams.”

2. “The archaeological record indicates a date range of c. A.D. 1100 to 1650 for pre-Contact Hawaiian habitations. A radiocarbon date of A.D. 1170-1400 was obtained from excavated sediments near the mouth of Hanamā‘ulu Stream. It is likely that the earliest settlements in and around the project area are considerably older than these dates. With the exception of subsurface fishpond or agricultural field sediments, the project area is unlikely to contain any as-yet undiscovered and intact historic/cultural properties or deposits, given the extent of historic and modern development and construction.”

3. “Land Commission documents indicate a unique land use pattern in which lo‘i (irrigated terraced gardens) and kula lands are described in the same ‘āpana (portion of land), with houselots in a separate portion. Also, according to Hammatt and Creed (1993:23), “there are several [LCA] references to…lo‘i next to the beach which indicate wetland cultivation extending right to the shoreline.” This is another type of land use that seems to be fairly unique.”

4. “In addition to the well-known Menehune Fishpond at Niumalu, Land Commission documents also describe several other (now destroyed) loko (fishponds) within or immediately adjacent to the proposed project area. Land Commission documents also indicate the shoreline location of several house lots in Nāwiliwili Ahupua‘a were known as Papalinahoa.”

5. “Several historic maps show multiple heiau along the seashore and stream mouths in and near the proposed project area (see Figures 6 and 7). These heiau appear to have been largely destroyed. Despite this, however, many people still appreciate the sacred nature of the landscape areas in and around these heiau (e.g., the rocky points at Ninini, Ahukini, and Kūki‘i), and many people still frequent these locations for spiritual reasons.”

6. “By virtue of its location within portions of Kalapakī, Nāwiliwili and Niumalu Ahupua‘a, the project area is associated with a great number of mo‘olelo (oral histories) and wahi pana (legendary or storied places), including: Alekoko and Kahalalehue (shark guardian spirits); Kalanipu‘u (a pu‘u kāhea, or “calling hill” for fishermen) and Pele’s older sister Nā-maka-o-Kaha‘i; Kawelo (the late 17th to early 18th century chief of Kaua‘i); Kilohana, a boy named Lahi and his uncle; Hā‘upu and Pōhaku-o-Kaua‘i; Hi‘iaka’s chanting of the winds of windward Kaua‘i; Ahukini-a-la‘a (a son of La‘a-mai-kahiki), Pele and Ahukini; the menehune; Kuhiau and Paukini (an important marker stone); mokihana lei; and more.”

7. “The project area is also associated a number of persons, events and locations from the historic era, including Kaikioewa; Kekauonohi and her husband Kealiiahonui (son of King Kaumuali‘i); Paulo Kanoa; William Hyde Rice and Līhu‘e Plantation; Victoria Kamāmalu; Princess Ruth Ke‘elikōlani; Ahukini Port and village; the development of Nāwiliwili Harbor in the 1920s and ‘30s; and more.”

The findings of the 2004 cultural assessment (CSH, 2004) are similar to those of the 2008 cultural impact assessment (CSH, 2008). The 2004 findings are cited below.

> “The historic documentation reviewed in this study indicates that, in pre-contact Hawaiian times, the physical landscape of Nawiliwili ahupua'a - especially in its broader makai lands - provided an ideal location for the cultivation of wetland taro. Nawiliwili Stream, which provided water for the lo'i emptied into Nawiliwili Bay, which provided an ideal canoe landing and fishing grounds. Heiau and other sacred sites identified in Nawiliwili and the adjacent ahupua’a further indicate the significance of the area in Hawaiian culture.
>
> Mahele documents record that taro lo’i and habitation sites continued to be present in the vicinity of the present harbor study area up to the mid-19th

century. Taro cultivation diminished during the remainder of the 19th century as commercial agriculture - rice and sugar - increased within Nawiliwili. The growth of Lihue Town and the sugar plantation further distorted traditional settlement patterns as people moved to these focuses of the developing economy.

At Nawiliwili Bay itself, the economic forces impelled the construction of a modem harbor facility in the 1920s and 1930s. As documented in historic photographs and maps, the present Pier 3 project area comprises landfill that includes material dredged from the bay during the harbor's development in the 1920s.

As identified by the informants queried for this study, within the Nawiliwili harbor, fishing and canoeing comprise the principal activities which continue traditional Hawaiian cultural practices into the present. Robert Crowe, the harbormaster at Nawiliwili, indicated that the Pier 3 project is unlikely to affect the canoeing activities. Regarding fishing, Mr. Crowell noted that security issues following the terrorist attacks of September 11, 2001 may have a more long-term impact on public access - for fishing and other recreational activities - to the harbor facility, irrespective of the pier improvement project. However, concerns on the impact of the Pier 3 project to fishing and canoeing should be resolved through consultation and coordination with the local community.

Cheryl Loveii-Obatake stressed how rich the area is in mythology and legend, much of it focused on the abundance of fish and ritual practices related to Hawaiian fishing. Ms. Loveii-Obatake identified a culturally significant pohaku (stone) in the Pier 2 area:

> My uncle & I often visited the pohaku site which Papalinahoa Stream discharges under pier 2 at the harbor. There is a pohaku which the moi would rub their belly or feed on certain nutrients during certain seasons. Besides moi, aholehole, palani, papio, oama, weke, menpachi, aweoweo, akule, halalu were caught by pole fishing under and off the pier.

Further investigation of the location and nature of this pohaku site may have to be undertaken to determine how it may be impacted by the Pier 3 project."

Based on the results of the 2008 cultural impact assessment (CSH, 2008), the 2004 cultural assessment (CSH, 2004), and previous cultural assessments, it is apparent that the Nawiliwili Harbor area formerly was a robust community having a strong cultural sense of place and of stewardship to the land. Following development of the harbor area, there is no evidence that any of the cultural sites described in the 2008 cultural impact assessment (CSH, 2008) or described in other sources have survived.

The two *heiau*, Kuhiau and Ninini, described by Thrum in his survey of heiau (Thrum, 1906a, 1906b) and by Bennett in his 1928-1929 archaeological survey of Kauai (Bennett, 1931), were destroyed prior to Thrum's visit, along with Paukini, the rock (*pohaku*) heiau associated with Kuhiau. No mention is made in the 2008 assessment of the fate of the petroglyphs at Papalinahoa, which was just north of the Pier 2 area, described by Bennett (Bennett, 1931), but it is likely that they have been destroyed.

5.4 Historical Sites and Cultural Impact Assessments

The Terminal occupies fill land that was created from spoil dredged from Nawiliwili Bay during the construction and development of the harbor (see Section 2). Cultural sites, including, but not limited to, heiau and native (and later residential) dwellings, were destroyed during the development of the area following the arrival of Captain James Cook, the introduction of foreign agricultural practices and industry (e.g., rice cultivation, sugar cane cultivation), and the development of western infrastructure (e.g., roads, government jail, government court house, residential homes). What few cultural sites might have remained would have been destroyed during the construction of Nawiliwili Harbor, the development of harbor infrastructure, commercial and infrastructure development in the area, and the construction of the hotel and resort complex at Kalapaki.

5.4.1 Findings

Potential impacts to cultural and historic sites were considered in the preparation of most of the ten EAs and EISs conducted for projects at the Nawiliwili Harbor area (see Table 1.2). Most of these projects involved significantly more intrusive construction work and were more extensive in aerial scope than are the future improvements at the Terminal. Thus, those projects had significantly more potential to impact cultural and historic sites than will future improvements at the Terminal. The cultural assessments all reached similar conclusions, that the construction projects in question would not have significant negative cultural impacts.

The 2008 cultural impact assessment, while comprehensive and focused on Nawiliwili Harbor, did not include conclusions regarding the potential cultural impacts the Nawiliwili-Ahukini shared-use path project might have. Such conclusions are contained in the EA for that project (Towill, 2008). However, the EA remains in draft format, to the best of our knowledge, and thus has not been accepted by the approving agency. Moreover, the conclusions provided in the EA reflect concerns over the entire length of the path, of which only a small portion is in the vicinity of Nawiliwili Harbor and the Terminal.

Based on the results of the 2005 cultural assessment for the Pier 3 improvement project (Okubo, 2005), the following conclusions and observations were made regarding cultural and historic sites and cultural practices in the Nawiliwili Harbor area. It is apparent from this description that cultural and historic sites are of little concern and that only cultural practices remain of potential concern.

> "It is highly improbable that there will be any appreciable cultural impacts from the Pier 3 segmented pier project since the work will be in an existing industrial site which dates back more than 70 years. The use of the sea for sustenance and recreation is a feature of Hawaiian life. Until the September 11, 2001 attack on the United States by terrorists, fishing was permitted from the piers and within the harbor. However, new security regulations prohibit fishing from the pier areas.
>
> While fishing within the bay is permitted, there is a conflict between pole or hand fishermen and the commercial fishermen using gill nets within the bay. It appears that this confrontation may be eliminated or minimized by new regulations which may be developed by the Department of Land and Natural Resources.
>
> Besides fishing, the use of canoes within the bay is a normal occurrence. This vestige of Hawaiian history is an important part of the renaissance of the Hawaiian culture today. There is no regulation, save the national security measures, governing the use of canoes within the harbor area save the common sense practice of those paddling canoes not to encroach upon the path of ocean-going ships. Since the ship schedule is published for each year ahead of time, the canoe enthusiasts will be able to schedule events without undue conflicts with the shipping industry."

For the 1998 Waapa Road realignment project (NKN, 1998), located just west of the Terminal, the following conclusions were made.

> "There are no known archaeological or historic resources in the project area due to the heavy impacts of the harbor and prior sugarcane cultivation. The proposed project, therefore, will have "no effect" on significant historic sites (Department of Land and Natural Resources, 1997)."

For the 1993 Pier 1 improvements project (DOT, 1993b), which was located just southeast of the Terminal, the following conclusions were made.

> "The construction of the project will not … Involve an irrevocable commitment to loss or destruction of any natural or cultural resources, except for the labor and materials related to the construction of the improvements."

The 1973 environmental assessment for construction of the small boat harbor (Department of the Army, 1973) came to the following conclusions.

> "There are no historical or archaeological sites in the vicinity which will be affected by the project."

5.4.2 Conclusions

Based on an assessment of the history, cultural background, and existing cultural and historical sites in the Nawiliwili Harbor area, the following conclusions are made.

- There are no significant historical or cultural sites at or in the immediate vicinity of the Terminal.

- Terminal operations, both past and present, have not threatened or impacted any significant historical or cultural sites.

- Future Terminal improvements (e.g., the construction of the two new ASTs) will not threaten or impact any significant historical or cultural sites.

5.5 VISUAL AND AESTHETIC APPEAL

To determine if the Terminal would adversely affect the visual and aesthetic appeal of Nawiliwili Harbor, visual and aesthetic conditions at Nawiliwili Harbor were examined and compared with the design of the Terminal and with changes to the Terminal resulting from future improvements.

5.5.1 Existing Visual and Aesthetic Appeal

Nawiliwili Harbor has a heavy industrial appearance consisting largely of paved areas with a few unpaved locations. The principal features at the harbor are the piers with barges and cruise liners docking, a small boat harbor, two bulk fuel terminals (i.e., the Terminal, the Aloha Petroleum terminal), a former bulk fuel terminal that still contains large ASTs (i.e., the former Lihue Plantation bunker fuel terminal), the DOT Harbor's Pier 2 shed, the Hawaiian Cement yard with its two cement silos, the Matson cargo container yard, DOT Harbors offices, several warehouses, and the empty parcel occupied formerly by the Lihue Sugar Plantation molasses storage facility. The tallest structures at the harbor are the two Hawaiian Cement silos.

Nawiliwili Harbor can be seen from several locations along Nawiliwili Road, Niumalu Road, Waapa Road, and Kalapaki Circle. It can also be seen from Niumalu Beach Park.

5.5.2 Potential Impacts to the Visual and Aesthetic Appeal

The tallest structure at the Terminal is Tank 4, which has a height of 36 feet. The future tanks will have the same height. The 9,000-bbl AST will be located between Tanks 2 and 4 (Figure 5) and the 4,500-bbl AST will be located west of the 9,000-bbl AST. Thus, they will be no more visible to people in the surrounding harbor area than the other tanks. The portable ASTs are 32 feet in height. The flare is significantly shorter than the ASTs.

The current height limitation for areas zoned as *I-G Industrial-General*, which includes Nawiliwili Harbor and the Terminal, is 50 feet (County of Kauai, 2015). The new ASTs are well within the I-G Zone height limitation.

The Terminal does not and will not have a significant impact on the visual and aesthetic appeal of Nawiliwili Harbor. Nawiliwili Harbor already has a heavy industrial appearance and the tallest structures at the Terminal are lower than other structures in the immediate vicinity (i.e., the Hawaiian Cement silos).

5.6 RECREATIONAL ACTIVITIES AND AREAS

5.6.1 Existing Recreational Activities and Areas

Nawiliwili Harbor is an active commercial harbor. Recreational activities in the harbor include canoe paddling and fishing. These activities, however, are restricted to areas outside of the waters off Piers 1, 2, and 3, where cruise ships, Young Brothers barges, and cargo ships operate and dock. Recreational activities outside the breakwater include fishing, boating, and surfing. There is active beach recreation at Kalapaki Beach. The Kauai Athletic Club is approximately 430 feet northwest of the Terminal and Nawiliwili Park is located approximately 980 feet northeast of the Terminal. The Nawiliwili Small Boat Harbor is more than 2,000 feet southwest from the Terminal.

Shore fishing is not allowed in Nawiliwili Harbor and any boat used for fishing has to remain outside of 100 yards from cruise ships (Okubo, 2005). There are no recreational activities in the area of the Terminal.

5.6.2 Potential Impacts to Recreational Activities and Areas

The Terminal has not had an adverse impact on recreational activities in the harbor area and future improvements to the Terminal will not have an adverse impact on current recreational activities. As stated in the Kauai Commercial Harbors 2025 Master Plan, the Nawiliwili Harbor area and the area surrounding the Terminal have been designated for future industrial development (DOT, 2001).

SECTION 6 – PUBLIC SERVICES

The Terminal has the potential to impact the following two public services: (1) transportation and (2) utilities. Owing to the location of the Terminal and the nature of its operations, it is not expected that other public services will be affected.

6.1 TRANSPORTATION

Nawiliwili Harbor serves as the primary commercial harbor for Kauai and currently handles approximately 90 percent of all cargo transported to or leaving Kauai (Towill, 2015). Cruise ships arrive at Pier 2 and the cruise market is anticipated to grow. Freight tonnage is expected to increase approximately 20 percent by 2035 (Towill, 2015). It has been suggested that Kauai's existing harbors appear to be at capacity and budget-constrained (Carter & Burgess, Inc. [Carter & Burgess], 2002). However, from a yard capacity perspective, there is ample yard space at Nawiliwili Harbor. From a berth capacity perspective, Nawiliwili Harbor may be closer to capacity. It is predicted that vessel traffic associated with Nawiliwili Harbor will worsen and potentially could have an economic impact on freight operations. Therefore, it is essential that changes at the Terminal are analyzed in the light of traffic impact.

Other than recent improvements, which are described in this EA, no significant changes have occurred at the Terminal since 1989, when the last of the four large ASTs were constructed. It is not anticipated that the addition of the six portable ASTs or construction of the two future ASTs will significantly alter the traffic flow or traffic volume at the Terminal and in the surrounding area. Daily vehicle traffic to and from the Terminal will consist of the 19 to 23 tanker trucks (see Section 1.4) and the commuter traffic generated by Terminal employees.

6.1.1 Existing and Future Transportation Infrastructure

Primary vehicle access to the Terminal is from Nawiliwili Road via Kanoa Road. The entrance gate is located at the southeast corner of the Terminal, at the corner of Kanoa Road and Waapa Road (Figure 8). Kanoa Road traffic is slowed by dividers that narrow the road. Tanker trucks use the blocked-off roadway area between the dividers and the Terminal to await fueling at the TTLR and they do not, and are not anticipated to, interfere with Kanoa Road traffic flow. The exit gate is located on the south side of the Terminal, along Waapa Road. For typical loading operations, tanker trucks approach the Terminal along Kanoa Street, enter at the entrance gate, load fuel at the TTLR, and leave at the exit gate onto Waapa Road (see Section 1.4; Figure 8).

Currently, 19 to 23 tanker trucks are loaded each day. Twelve of the trucks supply fuel to commercial, farming, and industrial users. Four to eight trucks are used to transport jet fuel to the Lihue Airport. Three or more of the trucks are operated by Aloha Petroleum. In addition, twice monthly, Aloha Petroleum has six to eight additional trucks loaded for 87 octane and 92 octane gasoline. It is not anticipated that the number of trucks loaded will change following construction of the two planned ASTs.

The Terminal off-loads fuel from barges at Pier 2 through underground cargo lines; therefore there is no truck traffic associated with off-loading. There is no tanker truck traffic between the pier and the Terminal.

Typically, the Terminal receives two to three barge deliveries each week. It is anticipated that, following construction of the two planned ASTs, the number of barge deliveries will be reduced to one every ten days because of the enhanced storage capability of fuel. Therefore, the Nawiliwili Harbor barge traffic likely will be improved by the addition of two ASTs. This is consistent with the transportation goals and objectives of the Kauai General Plan and with those of the General Plan Update, which is based on the 2015 Kauai infrastructure analysis (Towill, 2015).

In 2002, a traffic impact assessment was conducted as part of the EA for the Segmented Pier 3 Improvements at Nawiliwili Harbor (Okubo, 2005). It was estimated that traffic volume on Waapa Road will increase by 42 percent by the year 2022 during peak hours. However, despite this increase, it was not anticipated that the capacity of the intersection of Waapa Road with Nawiliwili Road will be exceeded to necessitate traffic lights in the area.

6.1.2 Potential Impacts to Transportation Infrastructure and Mitigation

The heavy truck traffic associated with the Terminal is minimal, averaging 19 to 23 trucks daily. No increase in the volume of vehicle traffic associated with the Terminal is expected to occur following construction of the future ASTs. The primary goal for constructing the ASTs is to create additional storage capacity for the existing products stored and distributed at the Terminal.

Traffic associated with the Terminal will not adversely affect traffic conditions in the area for the following reasons. First, the amount of vehicular traffic associated with the Terminal is expected to be equivalent or similar to the current traffic. Thus, there should be no net increase in Nawiliwili Harbor traffic. Second, the barge traffic associated with fuel delivery is anticipated to decrease, thus relieving barge traffic at the harbor. Therefore, there should be no net increase in traffic at Nawiliwili Harbor as a result of the addition of the two future ASTs at the Terminal.

6.2 UTILITIES

The Terminal currently uses water, electrical power, and the sanitary sewer system. The water is used for general housekeeping purposes. The electrical power is used to run some of the equipment and machinery at the Terminal.

6.2.1 Existing Utilities in the Area

6.2.1.1 Electrical Supply

Electrical service to the Terminal is supplied by the Kauai Island Utility Cooperative. It is not anticipated that significant additional electricity will be needed for operation of the future ASTs.

6.2.1.2 Water Supply

Water is supplied to Nawiliwili Harbor by the County of Kauai Department of Water as part of the Puhi-Lihue-Hanamaulu service area (Towill, 2015). The service area is supplied by ten active sources. It is not anticipated that significant additional water will be needed for operation of the future ASTs.

6.2.1.3 Wastewater

The County of Kauai provides sanitary sewer service to the Lihue-Hanamaulu community. However, the Nawiliwili Harbor area is located outside of that community and service at the harbor is provided by a small private wastewater system (Towill, 2015). In the future, new sewer lines will be installed that will be connected to the Lihue treatment system (Towill, 2015). It is not anticipated that significant additional wastewater will be generated as a result of the construction of the future ASTs.

6.2.2 Potential Impacts to Utilities in the Area

There will be no significant impacts to utility use in the area resulting from Terminal improvements, including installation of the future ASTs. Water, electricity, and sanitary sewer already are used at the Terminal and additional use of these utilities will be minimal. The potential additional power requirements for the Terminal are modest.

SECTION 7 – CONSULTATION ACTIVITIES

7.1 MEETINGS, INTERVIEWS, AND REQUESTS FOR INFORMATION

In preparing the EA, consultation meetings were held with the Department of Transportation [DOT]. In addition, other state agencies, local agencies, and community groups were contacted.

The persons and organizations contacted during the research of records performed as part of this EA are summarized in Table 7.1. Many of these people and organizations either were unavailable or could not provide information about the Terminal, the cultural background, or the potential environmental impact of the Terminal to the Nawiliwili Harbor area. Information provided by those knowledgeable about the Nawiliwili Harbor Area and the Terminal is summarized below.

TABLE 7.1
Interviews and Requests for Information for Environmental Assessment
Kauai Petroleum Fuel Terminal
Draft Environmental Assessment

Contact	Organization/Affiliation	Biographical / Additional Information	Contacted
Amy Susana Liana	Department of Health, Solid and Hazardous Waste Branch	Environmental Impact Assessment; provided public records	☑
Mae Rose Domingo	Department of Health, Hazard Evaluation and Emergency Response Office	Environmental Impact Assessment; provided public records	☑
Office	Office of Hawaiian Affairs		☐
Mara Mulrooney	Bishop Museum, Anthropology Department	Cultural Resource Division; Anthropologist, Archaeology; Secretary for the Society of Hawaiian Archaelology	☐
Charmaine Wong	Bishop Museum, Anthropology Department	Archaeology Collections Manager; Research interest in Hawaiian archaeology	☐
Scott Rowland	Department of Geology & Geophysics, University of Hawaii	Professor of Geology; Information on geology and potential environmental impacts	☑
John Sinton	Department of Geology & Geophysics, University of Hawaii	Emeritus Professor of Geology; Information on geology and potential environmental impacts	☑

☑ The person was contacted and was able to provide additional information or provided a reference to another knowledgeable person.
■ The person was contacted and could not provide any additional information.
☐ An attempt was made to contact the person, but that person was unavailable or no one was available.

TABLE 7.1 (continued)
Interviews and Requests for Information Environmental Assessment
Kauai Petroleum Fuel Terminal
Draft Environmental Assessment

Contact	Organization/Affiliation	Biographical / Additional Information	Contacted
James Bayman	Department of Anthropology, University of Hawaii	Professor of Anthropology; Archaeological research on organization of traditional societies in the Hawaiian Islands, published book on Hawaii	☑
William Chapman	Historic Preservation Program, Department of American Studies, University of Hawaii	Professor & Director of the Historic Preservation Program of the University of Hawaii	☑
Mary Jane Naone	State Historic Preservation Division, DLNR	Kauai Archeologist	☐
Tanya Gumapac-McGuire	Historic Hawaii Foundation, Preservation Resource Center	Information on historic properties and sites	☐
Kepa Maly	Kumu Pono Associates LLC	OEQC-recommended cultural expert for cultural history, cultural sites, Mo‘olelo Hawaiian language, cultural assessments and research, land grant research	☑
Puanani Rodgers		OEQC-recommended cultural practitioner	☐
Dr. Trisha Kehaulani Watson	Honua Consulting	OEQC-recommended cultural expert for cultural impact assessments (including environmental assessments and ethnographic studies), cultural landscape reports, traditional cultural properties, Section 106 consultation	☐
Office	Kauai Museum	Potential information for cultural knowledge, or contacts for cultural practitioners	☑
Dean Watase, Sandra Rosetter, Calvert Chun, Patti Miyashiro	State of Hawaii Department of Transportation – Harbors Division, Honolulu	Provided information and documents regarding environmental and cultural assessment	☑

☑ The person was contacted and was able to provide additional information or provided a reference to another knowledgeable person.
■ The person was contacted and could not provide any additional information.
☐ An attempt was made to contact the person, but that person was unavailable or no one was available..
DLNR Department of Land and Natural Resources.
OEQC Office of Environmental Quality Control.

TABLE 7.1 (continued)
Interviews and Requests for Information Environmental Assessment
Kauai Petroleum Fuel Terminal
Draft Environmental Assessment

Contact	Organization/Affiliation	Biographical / Additional Information	Contacted
Robert Crowell	State of Hawaii Department of Transportation – Harbors Division, Kauai	Provided information on Terminal operations impact on the harbor and infrastructure	☑
Research Desk	Lihue Public Library	Potential information on Nawiliwili Harbor	☑
Helen Wong Smith	Kauai Historical Society	Provided information for website source and Kauai history books	☑
Lilikala Kameeleihiwa	Center for Hawaiian Studies, University of Hawaii	Professor & Director of Center for Hawaiian Studies	☐
Sabra Kauka	President of Na Pali Coast Ohana	OEQC-recommended cultural expert for Lihue and Kalapaki	☐
Kenneth Conklin	Non-profit corporation Aloha For All	Information on race-based claims to land, political power, and government entitlements	☑
Jodie Galinato	Department of Planning & Permitting, County of Kauai	Provided past SMA permit	☑
Alan Carpenter	DLNR, Division of State Parks	Kauai Archaeologist; referred to by James Bayman	■
Chris Tamura	Kauai Petroleum	Terminal Manager; provided information on Terminal	☑
Mike Turchi	Summit Terminaling Services, LLC	Provided material related to Terminal and air permits	☑
David Harjo	PAR Petroleum	Provided information on Terminal lease and permits	☑
Roxanne MacDougall	Communications Coordinator Bike Path Project, County of Kauai	Information request regarding finalization of Ahukini-Nawiliwili Bike Path EA	☐
Website	DAGS State Survey Office	Information on historical maps	☑
Office	OEQC	Information request regarding finalization of Ahukini-Nawiliwili Bike Path EA	■
Office	Cultural Surveys Hawai‘i, Inc.	Referred to SHPD library	■

☑ The person was contacted and was able to provide additional information or provided a reference to another knowledgeable person.
■ The person was contacted and could not provide any additional information.
☐ An attempt was made to contact the person, but that person was unavailable or no one was available.
DAGS Department of Accounting and General Services.
DLNR Department of Land and Natural Resources.
OEQC Office of Environmental Quality Control.
SHPD State Historic Preservation Division.
SMA Special Management Area.

7.1.1 State of Hawaii Department of Transportation, Harbors Division

On August 8, 2015, a meeting was held with the DOT Harbors Division in Honolulu (Dean Watase, Sandra Rosetter, Calvert Chun, and Patti Miyashiro). The purpose of the meeting was to present the Terminal to the DOT, to explain the changes to the configuration and traffic flow at the Terminal, to obtain documents associated with the Terminal, and to discuss a new 35-year lease for the Terminal. The DOT stated that it was amendable to an extension of the lease but that the preparation of an EA and a SMA permit are required. The current configuration of the Terminal, including the recently installed portable ASTs, flare, and generator, was described. They were informed that two new additional ASTs with capacities of 8,000 and 4,000 bbl are planned to be constructed.

The DOT was concerned that the vessel traffic would increase due to fuel delivery on barges and requested that Robert Crowell from the Kauai DOT office be contacted to discuss the plans further and that the proposed traffic flow be shown in the EA. It was clarified that the new capacity of the terminal will be smaller than the original capacity. There was also a concern that road traffic could increase. Road traffic flow has recently been slowed due to road narrowing by barricades near the Terminal. It was discussed that the division of the road by barriers could be used as an advantage to temporarily park tanker trucks on the Terminal side of the barrier that are waiting in line to be fueled at the TTLR.

The DOT requested that the current fuel lines be pigged to determine if the lines have holes or imperfections or if they need to be cleaned. The DOT suggested consulting the State Historic Preservation Division [SHPD] Office to discuss the plans of the Terminal modifications. Mr. Watase provided DOT documents related to Nawiliwili Harbor and to the Terminal.

On September 9, 2015, a meeting was held with Robert Crowell, the DOT District Manager for Kauai. The purpose of the meeting was to discuss in more detail improvements to the Terminal, to obtain documents associated with Nawiliwili Harbor and with the Terminal, and to discuss potential traffic issues associated with the Terminal. It was discussed that the barges for fuel delivery arrive once or twice a week. Ship traffic will not be impacted because foreign cruise ships dominate ship traffic 50 to 60 days of the year and the fuel delivery schedule will be reduced. Mr. Crowell stated that he does not see additional impact from fuel barge delivery. A potential increase in truck traffic was discussed, but that the impact on overall traffic was judged to be minimal because the delivery trucks are anticipated to arrive during night or early morning hours, and traffic associated with passenger ships is affected only on the passenger ship arrival days (Tuesdays and Thursdays).

7.1.2 State of Hawaii Department of Health

Written requests for information were faxed to the DOH HEER Office and to the Solid and Hazardous Waste Branch [SHWB] (see Appendix D) on September 3, 2015. On September 14, 2015, the HEER Office provided electronic copies of files related to the Kauai Petroleum Terminal.

On September 16, 2015, a notice was received that there were hazardous waste records for review. No solid waste or underground storage tank records were available. Copies of the hazardous waste records were requested on September 18, 2015, and obtained on September 23, 2015.

7.1.3 Department of Geology and Geophysics, University of Hawaii

On September 4, 2015, an interview with Scott Rowland from the Department of Geology and Geophysics was conducted by phone. Dr. Rowland is a Geology Professor and teacher of Hawaiian Geology. The purpose of the interview was to learn about the geology and cultural history of the area at and surrounding the Terminal to evaluate potential environmental and cultural impacts posed by the Terminal. Dr. Rowland noted that he is not familiar with the cultural significance and archaeology of the area but that he can provide information about the geology.

Dr. Rowland described the south end of Nawiliwili Bay as part of a ridge (*Haupu Ridge*) belonging to an old shield volcano. Most of eastern Kauai is covered by post-shield, rejuvenation-stage lavas. These lavas are ponded in erosional depressions on the southeast side of the island. Multiple lava flows originated at Kilohana, a post-erosional shield volcano whose lavas filled much of the Lihue Basin. At Haupu Ridge, near the bay, post-erosional lavas ponded against the ridge, resulting in the formation of thick lava flows. These flows have columnar joints and are exposed along the north side of Waapa Road, across from Pier 2. The flows are dense and massive but, due to the columnar joints, liquids can travel easily from the surface of the flow to depth.

About a mile west of the harbor is Menehune Fishpond. This is a meander in Huleia Stream that was blocked off historically by stone and was used for agriculture. It is located above the main stream and the water in it likely is brackish.

On September 9, 2015, an interview with John Sinton from the Department of Geology and Geophysics was conducted. Dr. Sinton is an Emeritus Geology Professor and former teacher of Hawaiian Geology. The purpose of the interview was to learn about the geology and cultural history of the area surrounding the Terminal and to evaluate potential environmental and cultural impacts resulting from Terminal operations. Dr. Sinton stated that he does not know anything about the cultural significance of the Nawiliwili Harbor. Nawiliwili Harbor area lavas form thick flows, tens of meters thick, are in the form of columns, and mostly fill valleys. The dominant rock types are nephelinites.

The east side of Kauai likely is affected by large submarine landslides located off the east coast of the island. Most of the faults, however, are observed in the Lihue Depression itself and not so much in the south, by Nawiliwili Harbor. A recent publication by the United States Geological Survey [USGS] about the Lihue Basin includes information from new rock cores in the area and discusses the timeline between Koloa (rejuvenation stage) lavas and Waimea shield lavas. The publication documents that the hiatus between these formations is much shorter than previously

thought. Dr. Sinton provided the publication for our use. He suggested that further information and new maps for Kauai can be obtained from the USGS open file database. Dr. Sinton mentioned that Dr. Scott Izuka, co-author of the publication, also is involved in groundwater projects in the Nawiliwili area that might be important.

7.1.4 American Studies Department, University of Hawaii

On September 8, 2015, an interview was conducted with William Chapman from the American Studies Department. Dr. Chapman is the Director of the Graduate Program in Historic Preservation in the Department and he specializes in the management of historic districts. He also is a board member of the Hawaii History Review Board. The purpose of the interview was to learn about the archaeology and cultural history of the area surrounding the Terminal to evaluate potential cultural and archaeological impacts resulting from Terminal operations.

Dr. Chapman indicated that he is unfamiliar with the cultural significance and archaeology of the Nawiliwili Harbor area. He noted that, in general, very few historical and archaeological sites are listed in Hawaii. The usual way in which a building becomes listed as a historic site is when an archaeological site is discovered by a property owner. This is followed by an archaeological survey, which identifies the potential eligibility of the site for listing. Listing is often motivated by tax incentives. Because it is the responsibility of the property owner to initiate listing and listing requires a long paper trail and time, which can limit the owner's use of the property, many archaeological sites in Hawaii never get listed. He recommended contacting an archaeological survey consultant for further information on the area of the Terminal.

7.1.5 Department of Anthropology, University of Hawaii

On September 8, 2015, telephone and email messages were received from James Bayman from the Department of Anthropology. Dr. Bayman is an Anthropology Professor at the University of Hawaii and his research focuses on traditional societies in the Hawaiian Islands. Dr. Bayman stated that he does not know anything of substance about the Nawiliwili Harbor area. He recommended that Alan Carpenter at State Parks be consulted for relevant resource people or information. He stated that there might be maritime archaeological sites near the Terminal. He recommended that we consider consulting the research literature of Paul Johnston, from the Smithsonian Institution, who worked on the recovery of a yacht that was purchased and used by one of the native Hawaiian kings in the 19th century.

7.1.6 Kenneth Conklin

On September 18, 2015, a phone interview was conducted with Kenneth Conklin. Mr. Conklin has compiled a number of documents regarding Hawaiian sovereignty and its opposition. He is listed by the OEQC as a cultural assessment provider with expertise in race-based claims to land. Mr. Conklin said that the Terminal might spark objections from the *Kingdom of Atooi*, which claims sovereignty on Kauai. If objections are received, it may need to be proven that the land is not native land. Mr. Conklin stated that he has knowledge of jurisdiction, the annexation of Hawaii in 1898, the Hawaiian Kingdom, and other legal issues relevant to Hawaiian

sovereignty and that he can be of help during disputes. At the U.S. Marine Corps base in Waimanalo, a group of native Hawaiians challenged ownership and there was a detailed analysis conducted to prove military ownership. Mr. Conklin stated that he can provide that type of analysis, if needed. Another activist, Keanu Sai, claims that all property titles are invalid because of the Hawaiian overthrow (perfect title case).

7.2 DRAFT EA COMMENTS

Comments on the initial Draft EA have been made by one party, the approving agency. It is anticipated that other agencies receiving the final Draft EA also will provide comments. Those comments will be included in the Final EA.

7.2.1 Comments by the State of Hawaii Department of Transportation, Harbors Division

The DOT Harbors Division provided comments and recommendations for the initial Draft EA (see Appendix D). Those comments are listed below in bold italics and our responses follow. Where appropriate, changes have been made in the corresponding sections within this report.

GENERAL COMMENTS

1. ***Transfer of ownership history. I think it would be beneficial to provide an brief overview of the change in ownership over the years.***

   Section 2.4, entitled "Terminal Property Ownership," has been added to the EA. The new section includes a description of changes in property ownership and the following two tables have been added: (1) TABLE 2.1 Summary of Property Owners and (2) TABLE 2.2 Summary of Lease and License Holders.

2. ***Is there any ESA Phase I or II information for the area within the terminal?***

   No Phase I environmental site assessments have been conducted specifically for the Terminal. However, the 2001 Phase I environmental site assessment conducted for Nawiliwili Harbor, Phase I and Phase II environmental site assessments conducted for other parcels at the harbor, and other environmental investigative reports were used to obtain information about the Terminal property (see Section 2.3).

   To address environmental concerns within the Terminal, Section 4.2.1.3, entitled "Existing Environmental Conditions," has been added to the EA. The section contains descriptions of all known environmental investigations conducted within the Terminal and it includes an evaluation of the current environmental condition of the Terminal property. A summary of this section has been added to the Executive Summary.

SPECIFIC COMMENTS

1. ***Page ES-5 and Page 4-11, Section 4.4.2. Migratory birds is a major issue on Kauai. If it is technically or operationally feasible, may want to consider strengthening the description of light fixtures to include "shielded and downward oriented". Bob Crowell is probably better versed in this issue so he may have additional insights.***

   In the second paragraph of Section 4.4.2, the following text (in **bold**) has been added to the description of the lights. This change also has been made to the corresponding statement in the Executive Summary. We have used the term, *downlights*, instead of "downward oriented" because it is the term used in the DLNR and DOFAW guidance for wildlife lighting (DLNR, 2015).

   > "To mitigate the potential hazard to the Newell's Shearwater, the security night lighting at the Terminal conforms to the guidelines for wildlife lighting issued by DLNR and the State of Hawaii Department of Forestry and Wildlife [DOFAW] (DLNR, 2015). The lights used at the Terminal are *downlights* that are **shielded and** mounted on poles substantially shorter than the surrounding ASTs."

   An email inquiry has been sent to Bob Crowell but he has not responded yet.

2. ***Page 1-1, Section 1 and Page 2-1, Section 2.1. Clarification to the statement about who owns harbor lands. The State of Hawaii owns the lands (side note, I believe DOT Highways owns the right-of-ways so they are unique in that regard). Harbors manages and controls these lands through Governor's Executive Orders.***

   References to the property ownership have been corrected in the following sections: (1) the second paragraph of the Executive Summary, (2) the first paragraph of Section 1, (3) the first paragraph of Section 1.2, and (4) the second paragraph of Section 2.1.

3. ***Page 1-8, Section 1.5.2. I understand that ethanol may not be required as a gas additive starting next year? If yes, please update that ethanol may not be needed/used.***

   The following paragraph has been added to Section 1.5.2.1.

   > **"Future Use of Ethanol.** It is possible that ethanol may not be stored or used at the Terminal in the future. Both the Hawaii State House of Representatives (H.B. No. 743) and the Hawaii State Legislature (S.B. 717) have introduced bills to repeal the requirement that gasoline for motor vehicles include 10 percent ethanol."

   In addition, the following correction (in **bold**) was made to the first paragraph in Section 1.5.2.1.

"The ethanol additive used at the Terminal consists of 90 to 95 percent ethanol mixed with gasoline and other petroleum hydrocarbons. The HiTEC fuel additive consists of a mixture of a proprietary chemical compound (a complex amine), naphtha, and other petroleum hydrocarbons. The diesel fuel **additive** consists primarily of polymers with up to 40 percent petroleum hydrocarbons. The diesel fuel dye consists of 68 percent Solvent Red 164 (an azo dye) mixed with petroleum hydrocarbons."

4. ***Page 5-10, Section 5.6.1. I believe Nawiliwili Harbor is a secured facility, so the red triangle area shown below is off limits to the public. Recreational activities occur outside this area. Bob should be able to clarify this statement.***

In addition, the following sentence (in **bold**) was added to the first paragraph in Section 5.6.1.

"Nawiliwili Harbor is an active commercial harbor. Recreational activities in the harbor include canoe paddling and fishing. **These activities, however, are restricted to areas outside of the waters off Piers 1, 2, and 3, where cruise ships, Young Brothers barges, and cargo ships operate and dock.** Recreational activities outside the breakwater include fishing, boating, and surfing. There is active beach recreation at Kalapaki Beach. The Kauai Athletic Club is approximately 430 feet northwest of the Terminal and Nawiliwili Park is located approximately 980 feet northeast of the Terminal. The Nawiliwili Small Boat Harbor is more than 2,000 feet southwest from the Terminal."

5. ***Page 5-10, Section 5.6.2. Correction to the text. The 2025 Master Plan was produced by DOT Harbors.***

The reference to the County of Maui has been removed from Section 5.6.2. The section now reads as follows.

"The Terminal has not had an adverse impact on recreational activities in the harbor area and future improvements to the Terminal will not have an adverse impact on current recreational activities. As stated in the Kauai Commercial Harbors 2025 Master Plan, the Nawiliwili Harbor area and the area surrounding the Terminal have been designated for future industrial development (DOT, 2001)."

6. ***Page 6-1, Section 6.1. Clarification to the statement is needed. DOT Harbors looks at capacity from two perspectives: yard and berth. From the yard capacity perspective, I believe Nawiliwili has ample yard space. From the berth capacity perspective, Nawiliwili may be closer to capacity. Also, perhaps reference should be made to 'vessel' traffic below, i.e., vessel traffic will worsen.***

The following changes (in **bold**) have been made to the first paragraph in Section 6.1.

"Nawiliwili Harbor serves as the primary commercial harbor for Kauai and currently handles approximately 90 percent of all cargo transported to or leaving Kauai (Towill, 2015). Cruise ships arrive at Pier 2 and the cruise market is anticipated to grow. Freight tonnage is expected to increase approximately 20 percent by 2035 (Towill, 2015). **It has been suggested that Kauai's existing harbors appear to be at capacity and budget-constrained (Carter & Burgess, Inc. [Carter & Burgess], 2002). However, from a yard capacity perspective, there is ample yard space at Nawiliwili Harbor. From a berth capacity perspective, Nawiliwili Harbor may be closer to capacity. It is predicted that vessel traffic associated with Nawiliwili Harbor will worsen and potentially could have an economic impact on freight operations.** Therefore, it is essential that changes at the Terminal are analyzed in the light of traffic impact."

7. ***Page 1-4, Section 1.4.2 and Page 6-2, Section 6.1.2. Seems counter-intuitive that truck volume would remain the same despite the increased storage capacity. Suggest elaborating on this statement to support it.***

The following additional sentences (in **bold**) have been added to the Section 1.4.2.

"Typically, 19 to 23 tanker trucks are loaded each day. Twelve of the trucks are operated by Senter Petroleum, which supplies fuel to commercial, farming, and industrial users. Four to eight trucks are used to transport jet fuel to the Lihue Airport. Three or more of the trucks are operated by Aloha Petroleum. In addition, twice monthly, Aloha Petroleum has six to eight additional trucks loaded for 87 octane and 92 octane gasoline. It is not anticipated that the number of trucks loaded will change following construction of the two planned ASTs. **The primary goal for constructing the ASTs is to create additional storage capacity for the existing products stored and distributed at the Terminal. Construction of the new ASTs will allow Kauai Petroleum to reduce the number of barge shipments the Terminal requires.**"

The following additional sentence (in **bold**) has been added to the Section 6.1.2.

"The heavy truck traffic associated with the Terminal is minimal, averaging 19 to 23 trucks daily. No increase in the volume of vehicle traffic associated with the Terminal is expected to occur following construction of the future ASTs. **The primary goal for constructing the ASTs is to create additional storage capacity for the existing products stored and distributed at the Terminal.**"

Side comment. Reminder to applicant to send construction drawings to Engineering Branch for review and approval.

Prior to beginning construction of the new ASTs, construction drawings will be submitted to the Engineering Branch for review and approval.

Just some minor corrections to Page 7-4 under the heading "7.1.1. State of Hawaii Department of Transportation, Harbors Division":

1) Spelling of my name is Patti, not Pattie.

2) change to read at the end of the fourth line. "...and to discuss a~~n extension to the~~ new 35 year lease for the Terminal ~~for 35 years~~."

(1) The spelling error has been corrected. In addition, the same spelling error was found in Table 7.1 on page 7-2. That error has been corrected as well.

(2) The sentence has been revised as requested.

7.3 AVAILABILITY

The Draft EA is available for review at the Lihue Public Library.

SECTION 8 – FINDINGS AND CONCLUSIONS

In rendering a FONSI, the state is required under HRS 343 (DOH, 1974) to consider the potential negative effects, both short-term and long-term, all facets of a proposed project could have on the environment (DOH, 1996a). Accordingly, the DOH has established thirteen *significance criteria* by which to evaluate proposed projects (HAR 11-200-12; DOH, 1996a).

TABLE 8.1
Evaluation of Significance Criteria
Kauai Petroleum Fuel Terminal
Draft Environmental Assessment

No.	Significance Criterion	Yes	No	EA Section
1	Involves an irrevocable commitment to loss or destruction of any natural or cultural resource?	☐	☑	4.2, 4.3 4.4, 5.3
2	Curtails the range of beneficial uses of the environment?	☐	☑	5.5
3	Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders?	☐	☑	3.1
4	Substantially affects the economic welfare, social welfare, and cultural practices of the community or State?	☐	☑	3.2 5.2
5	Substantially affects public health?	☐	☑	3.1, 4.3, 4.5
6	Involves substantial secondary impacts, such as population changes or effects on public facilities?	☐	☑	5.1 5.2
7	Involves a substantial degradation of environmental quality?	☐	☑	Section 4
8	Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger action?	☐	☑	Section 3 Section 4 Section 5
9	Substantially affects a rare, threatened, or endangered species, or its habitat?	☐	☑	4.4
10	Detrimentally affects air or water quality or ambient noise level?	☐	☑	4.3, 4.5, 4.6
11	Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters?	☐	☑	2.2
12	Substantially affects scenic vistas and viewplanes identified in county or state plans or studies?	☐	☑	5.4.2
13	Requires substantial energy consumption?	☐	☑	6.2

The results of the EA were compared with the significance criteria. It is concluded that the operation of the Terminal and proposed improvements do not meet any of the thirteen criteria. The criteria and the relevant sections in the EA are summarized in Table 8.1. By not meeting these criteria, it is appropriate that the proposed Terminal project be issued a FONSI and that an EIS not be required.

SECTION 9 – REFERENCES

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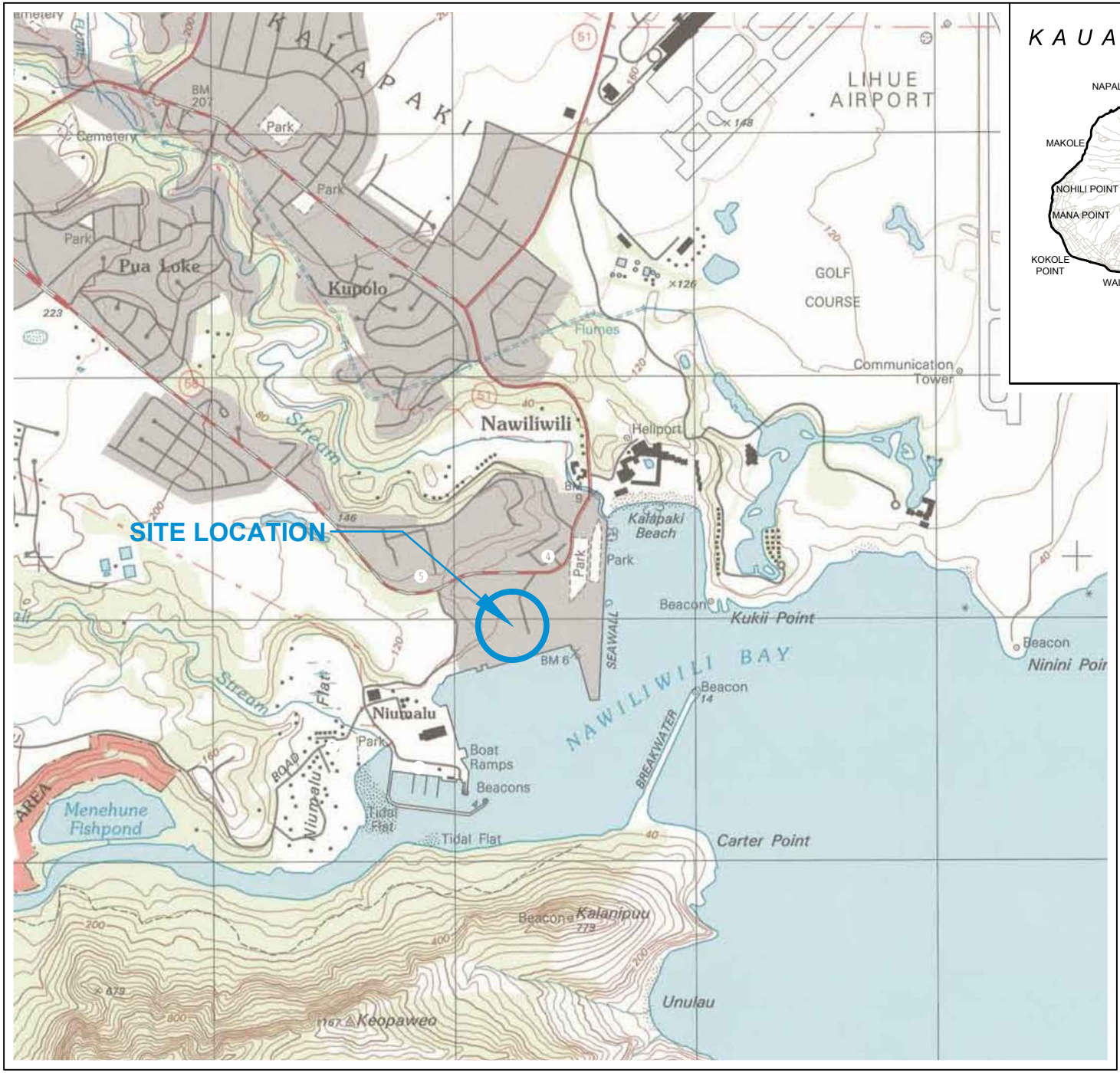
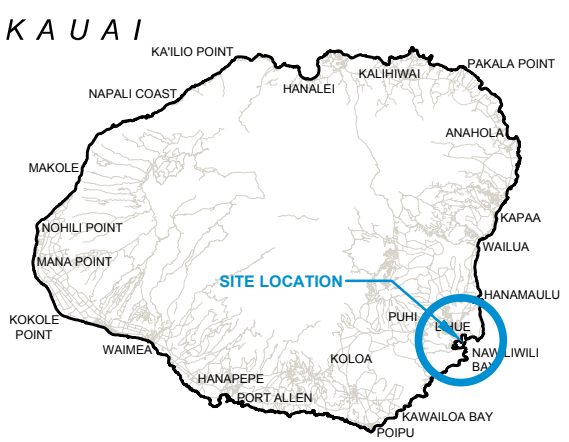
FIGURES





NOTES

The accuracy of this document is limited to the quality and scale of the source information. This document is not a legal representation of an engineered survey.

SOURCES

U.S. Geological Survey. Lihue Quadrangle, Hawaii-Kauai Co. [map]. 1996. 1:24,000. 7.5 Minute Series (Topographic). Reston, VA: United States Department of the Interior, USGS, 1998.

NORTH

GRAPHIC SCALE

1,500 0 1,500

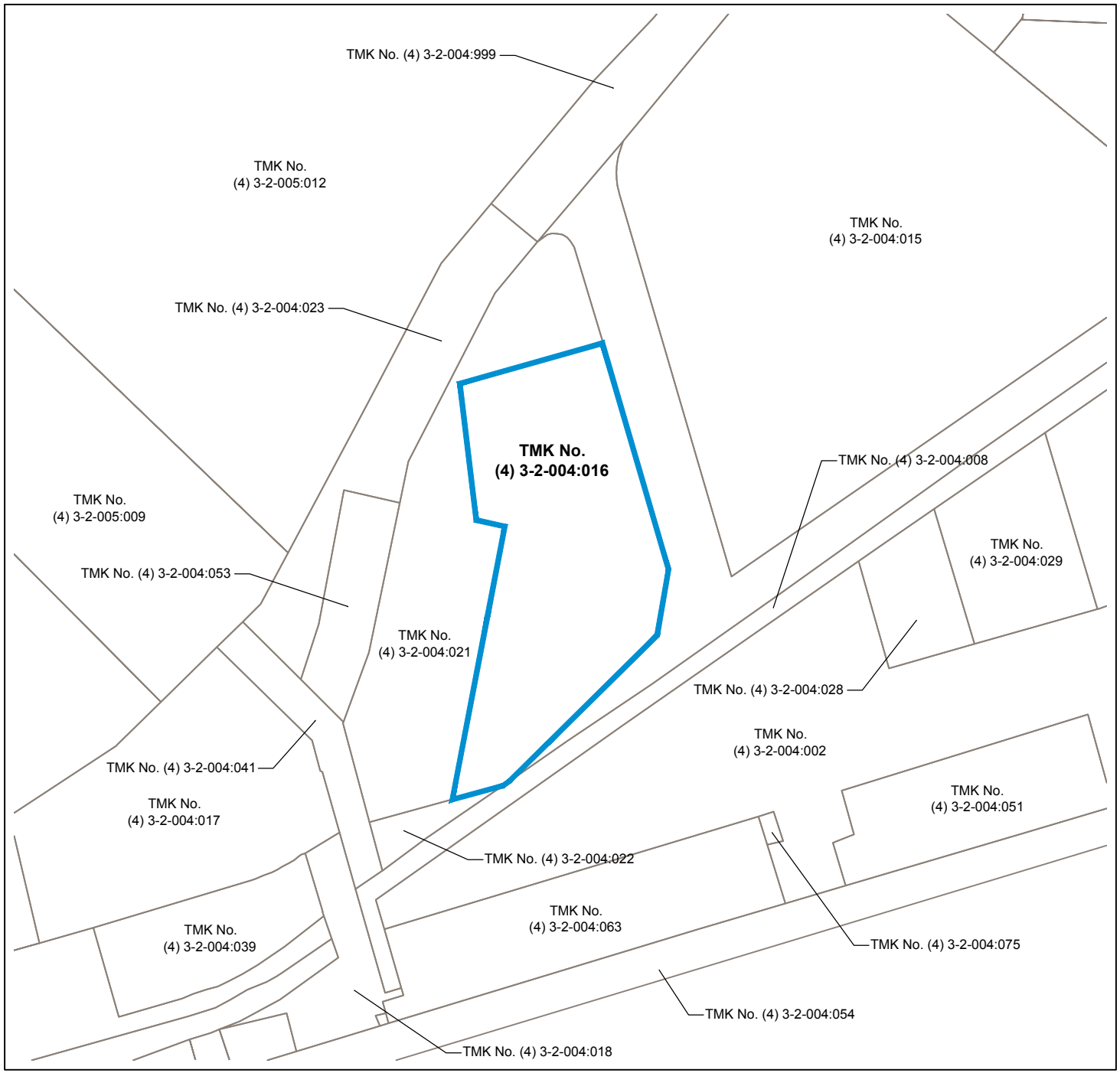
Scale in Feet

FIGURE 1

REGIONAL LOCATION & TOPOGRAPHIC MAP

ENVIRONMENTAL ASSESSMENT
Kauai Petroleum Fuel Terminal
3185 Waapa Road, Nawiliwili, Kauai
TMK No. (4) 3-2-004:016

ESI
ENVIRONMENTAL SCIENCE INTERNATIONAL



LEGEND

KAUAI PETROLEUM FUEL TERMINAL

TMK BOUNDARY

NOTES

The accuracy of this document is limited to the quality and scale of the source information. This document is not a legal representation of an engineered survey.

SOURCES

Statewide GIS Program, Office of Planning, State of Hawaii, 2009

NORTH

GRAPHIC SCALE

150 0 150

Scale in Feet

FIGURE 2

TAX MAP

[TMK No: (4) 3-2-004:016]

ENVIRONMENTAL ASSESSMENT
Kauai Petroleum Fuel Terminal
3185 Waapa Road, Nawiliwili, Kauai
TMK No. (4) 3-2-004:016

ESI

ENVIRONMENTAL SCIENCE INTERNATIONAL

LEGEND

KAUAI PETROLEUM FUEL TERMINAL

① NOISE SENSITIVE AREA

LAND USE DISTRICT BOUNDARY CODE

AGRICULTURAL

CONSERVATION

URBAN

NOTES

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SOURCES

Statewide GIS Program, Office of Planning, State of Hawaii, 2009

NORTH

GRAPHIC SCALE

1,200 0 1,200

Scale in Feet

FIGURE 3

LAND USE MAP

ENVIRONMENTAL ASSESSMENT
Kauai Petroleum Fuel Terminal
3185 Waapa Road, Nawiliwili, Kauai
TMK No. (4) 3-2-004:016

ENVIRONMENTAL SCIENCE INTERNATIONAL

LEGEND

- SITE BOUNDARY
- BUILDING
- CONTAINMENT WALL
- FENCE
- EXISTING ABOVEGROUND STORAGE TANK (AST)
- NEW AST TO BE INSTALLED
- CURRENT FUEL PIPELINE
- FORMER FUEL PIPELINE
- SPECIAL MANAGEMENT AREA BOUNDARY

NOTES

The accuracy of this document is limited to the quality and scale of the source information. This document is not a legal representation of an engineered survey.

SOURCES

C-4, Grading Plan. Esaki Surveying & Mapping, Inc., 2014

Figure 2-2, Available Current & Historic Pipeline Details, Nawiliwili Harbor, Lihue, Kauai. EarthTech, 2001

Google Map. 2015. [Nawiliwili Harbor] [Street Map]. https://www.google.com/maps/@21.9559082, -159.3552719,363m/data=!3m1!1e3

M-100, Overall Site Plan

Statewide GIS Program, Office of Planning, State of Hawaii, 2009

NORTH

GRAPHIC SCALE

100 0 100

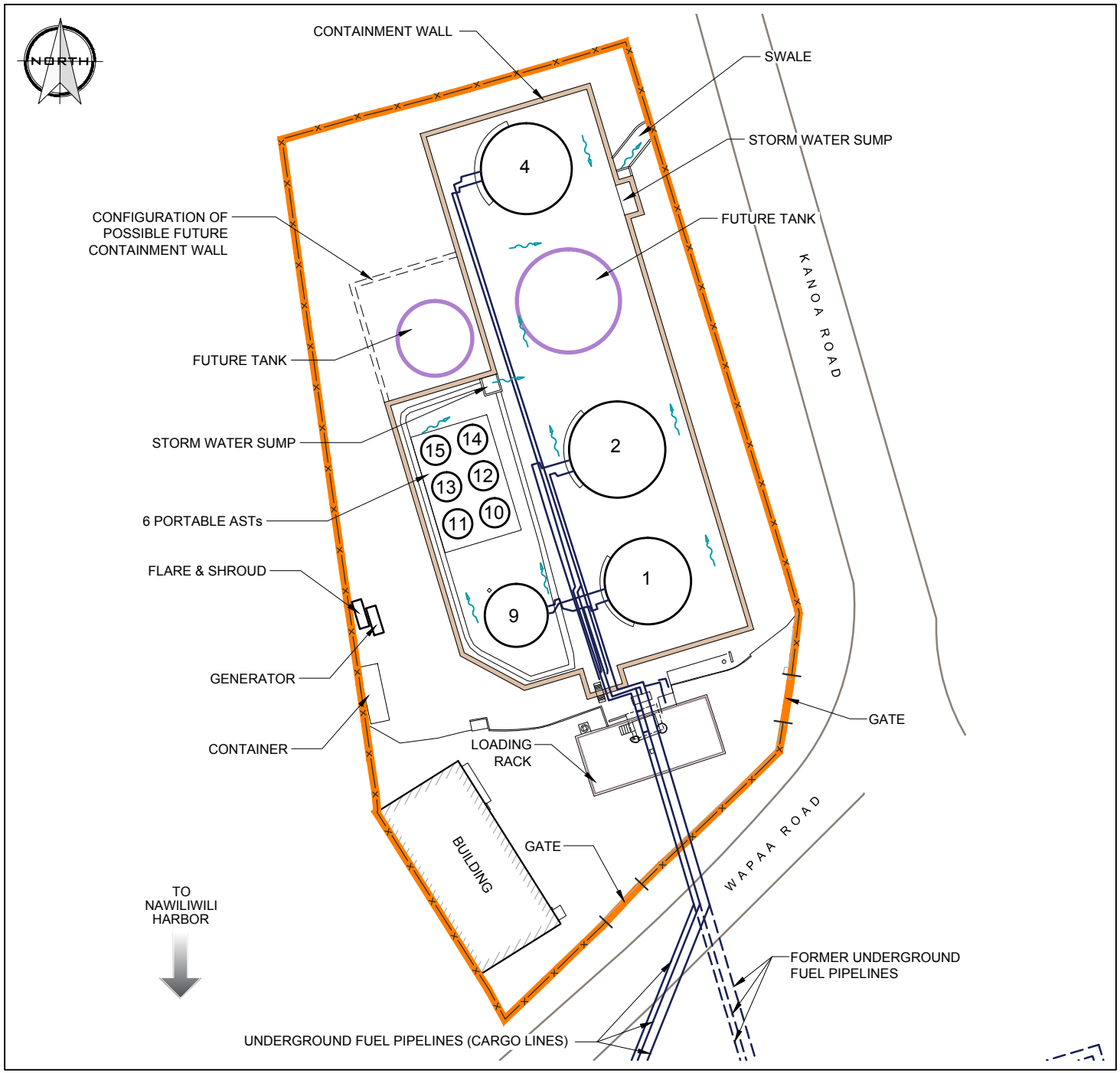
Scale in Feet

FIGURE 4

SITE LOCATION

ENVIRONMENTAL ASSESSMENT
Kauai Petroleum Fuel Terminal
3185 Waapa Road, Nawiliwili, Kauai
TMK No. (4) 3-2-004:016

ENVIRONMENTAL SCIENCE INTERNATIONAL



LEGEND

- SITE BOUNDARY
- BUILDING
- CONTAINMENT WALL
- FENCE
- EXISTING ABOVEGROUND STORAGE TANK (AST)
- NEW AST TO BE INSTALLED
- CURRENT FUEL PIPELINE
- FORMER FUEL PIPELINE
- STORM WATER FLOW DIRECTION

NOTES

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Figure 2-2, Available Current & Historic Pipeline Details, Nawiliwili Harbor, Lihue, Kauai. EarthTech, 2001

M-100, Overall Site Plan

Statewide GIS Program, Office of Planning, State of Hawaii, 2009

GRAPHIC SCALE

60 0 60

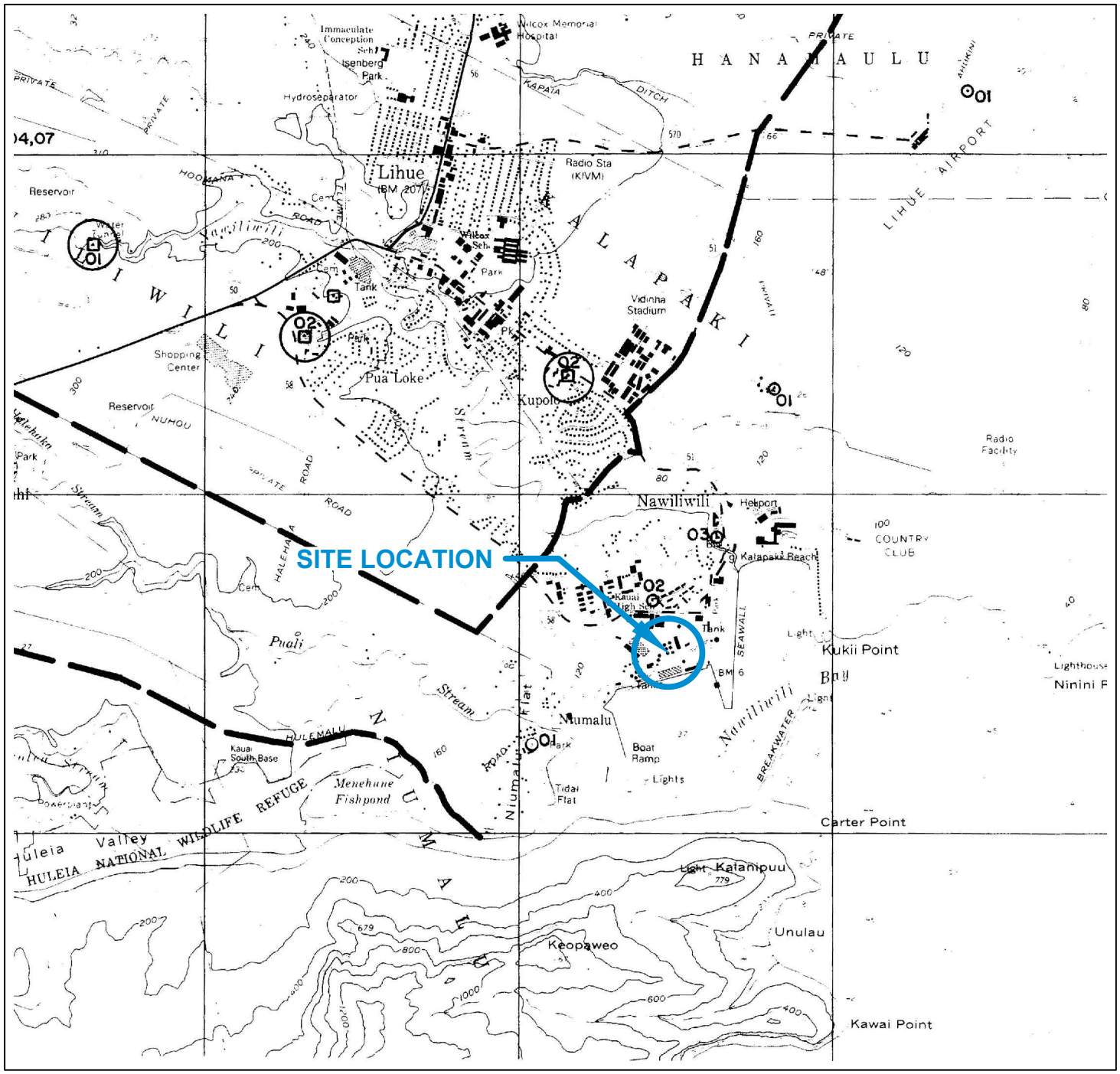
Scale in Feet

FIGURE 5

SITE MAP

ENVIRONMENTAL ASSESSMENT
Kauai Petroleum Fuel Terminal
3185 Waapa Road, Nawiliwili, Kauai
TMK No. (4) 3-2-004:016

ESI
ENVIRONMENTAL SCIENCE INTERNATIONAL



LEGEND

- UNDERGROUND INJECTION CONTROL (UIC) LINE
- INJECTION WELL
- DRINKING WATER WELL
- OTHER WELL

NOTES

The accuracy of this document is limited to the quality and scale of the source information. This document is not a legal representation of an engineered survey.

SOURCES

U.S. Geological Survey. State of Hawaii, Department of Health, Underground Injection Control Program, Kapaa Quadrangle, Hawaii-Kauai Co., Island of Kauai [map]. 1983. 1:24,000. 7.5 Minute Series (Topographic). Reston, VA: United States Department of the Interior, USGS, 1984.

U.S. Geological Survey. State of Hawaii, Department of Health, Underground Injection Control Program, Lihue Quadrangle, Hawaii-Kauai Co., Island of Kauai [map]. 1983. 1:24,000. 7.5 Minute Series (Topographic). Reston, VA: United States Department of the Interior, USGS, 1984.

NORTH

GRAPHIC SCALE

0.5 0 0.5

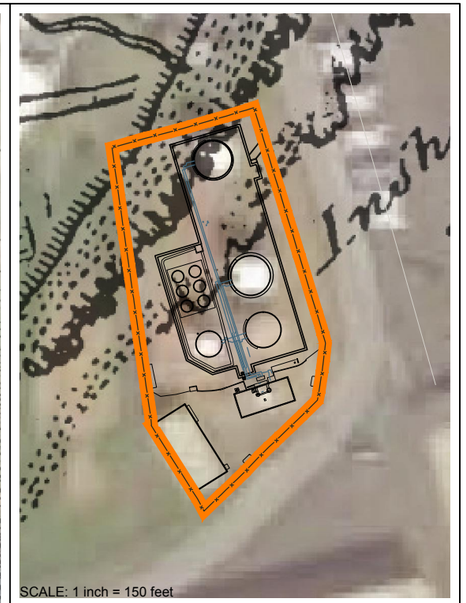
Scale in Miles

FIGURE 6

UIC LINE & WELL LOCATION MAP

ENVIRONMENTAL ASSESSMENT
Kauai Petroleum Fuel Terminal
3185 Waapa Road, Nawiliwili, Kauai
TMK No. (4) 3-2-004:016

ENVIRONMENTAL SCIENCE INTERNATIONAL



SCALE: 1 inch = 150 feet

LEGEND

PROPERTY BOUNDARY

NOTES

The accuracy of this document is limited to the quality and scale of the source information. This document is not a legal representation of an engineered survey.

SOURCES

C-4, Grading Plan. Esaki Surveying & Mapping, Inc., 2014

Google Map. 2015. [Nawiliwili Harbor] [Street Map]. https://www.google.com/maps/@21.9559082, -159.3552719,363m/data=!3m1!1e3

Nawiliwili Harbor Kauai [Map]. (1881). Hawaiian Government Survey.

NORTH

GRAPHIC SCALE

500 0 500

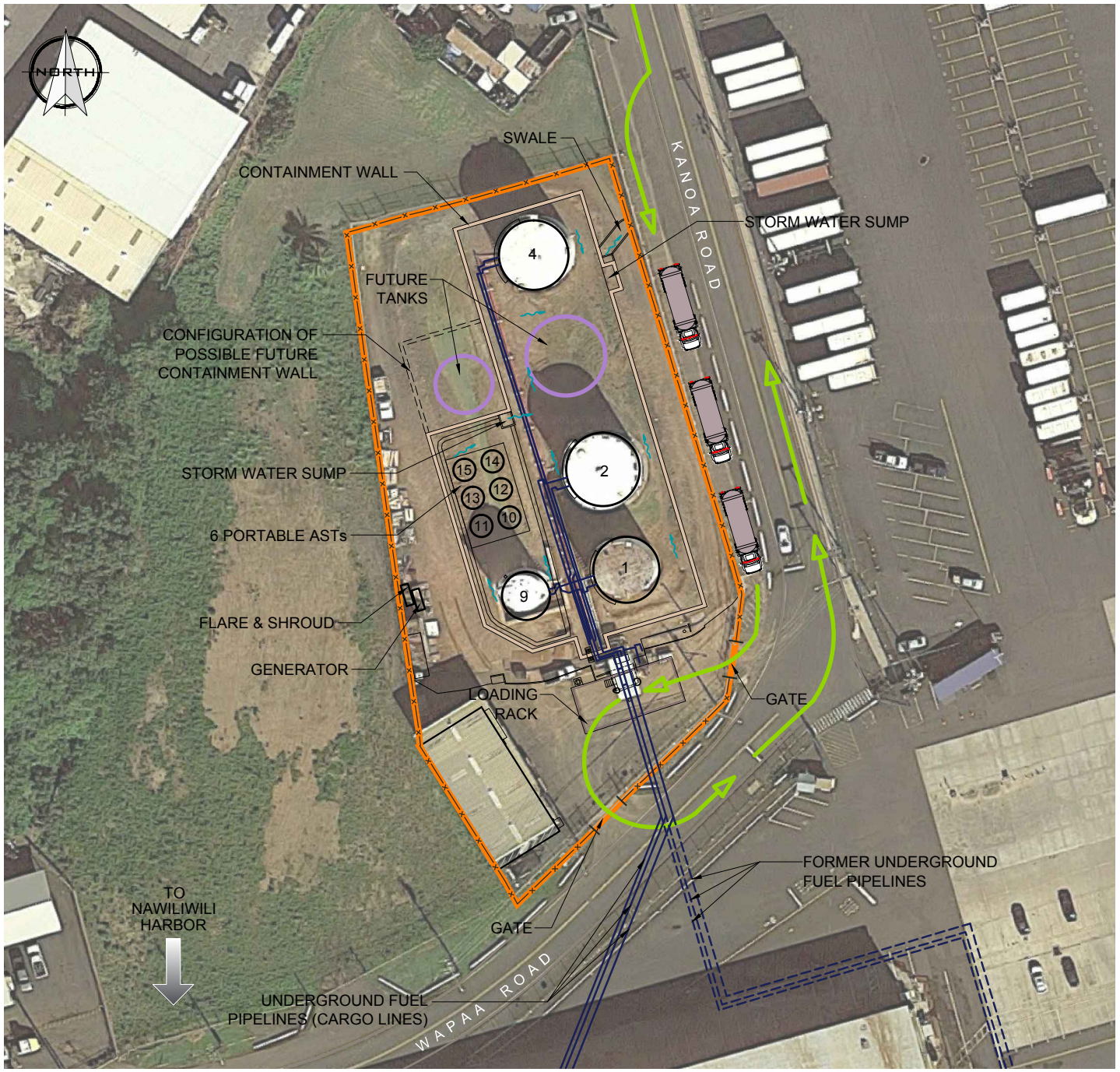
Scale in Feet

FIGURE 7

COMPARISON OF CURRENT HARBOR WITH PRE-HARBOR BAY (1881)

ENVIRONMENTAL ASSESSMENT
Kauai Petroleum Fuel Terminal
3185 Waapa Road, Nawiliwili, Kawaii
TMK No. (4) 3-2-004:016

ESI
ENVIRONMENTAL SCIENCE INTERNATIONAL



LEGEND

- SITE BOUNDARY
- BUILDING
- CONTAINMENT WALL
- FENCE
- EXISTING ABOVEGROUND STORAGE TANK (AST)
- NEW AST TO BE INSTALLED
- CURRENT FUEL PIPELINE
- FORMER FUEL PIPELINE
- STORM WATER FLOW DIRECTION
- TANKER TRUCK TRAFFIC FLOW

NOTES

The accuracy of this document is limited to the quality and scale of the source information. This document is not a legal representation of an engineered survey.

SOURCES

C-4, Grading Plan. Esaki Surveying & Mapping, Inc., 2014

Figure 2-2, Available Current & Historic Pipeline Details, Nawiliwili Harbor, Lihue, Kauai. EarthTech, 2001

M-100, Overall Site Plan

Statewide GIS Program, Office of Planning, State of Hawaii, 2009

GRAPHIC SCALE

80 0 80

Scale in Feet

FIGURE 8

TRAFFIC FLOW

ENVIRONMENTAL ASSESSMENT
Kauai Petroleum Fuel Terminal
3185 Waapa Road, Nawiliwili, Kauai
TMK No. (4) 3-2-004:016

ENVIRONMENTAL SCIENCE INTERNATIONAL

APPENDIX A

Safety Data Sheets

Material Safety Data Sheet

Air1® Diesel Exhaust Fluid -

Section 1. Chemical product and company identification -

Trade name : Air1® Diesel Exhaust Fluid

Manufacturer : Yara North America, Inc
100 North Tampa Street
Suite 3200
P.O. Box 24926
Tampa, FL 33623
USA
Tel: +1 813 222 5700
Fax: +1 813 875 5735

Validation date : **06.12.2011.**

Print date : 06.12.2011.

Responsible name : Bill Easterwood (Technical conditions of use)
Rebecca Lee (Safety and Regulatory information)

In case of emergency : Additional Product Information: 813-222-5700
or Chemtrec 24-hours Emergency Resonse: 1-800-424-9300

Section 2. Hazards identification -

Physical state : Liquid. [Clear.]

Emergency overview : NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.

Potential acute health effects

Eyes : No known significant effects or critical hazards.

Skin : No known significant effects or critical hazards.

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. -

Ingestion : No known significant effects or critical hazards. -

Potential chronic health effects

Chronic effects : No known significant effects or critical hazards.

Carcinogenic effects : No known significant effects or critical hazards.

Mutagenic effects : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Inhalation : No specific data.

Ingestion : No specific data.

Skin : No specific data.

Eyes : No specific data.

See toxicological information (Section 11)

Section 3. Composition/information on ingredients

Name	CAS number	% by weight
Urea	57-13-6	32.5
Water	7732-18-5	67.5

Section 4. First aid measures -

Eye contact : -Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.

Skin contact : -In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.

Inhalation : -Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.

Ingestion : -Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Protection of first-aiders : -No action shall be taken involving any personal risk or without suitable training.

Notes to physician : -In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Section 5. Fire-fighting measures -

Flammability of the product : -Non-flammable.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Products of combustion : These products are
carbon dioxide
carbon monoxide
nitrogen oxides
Ammonia.

Fire-fighting media and instructions : -In case of fire, use water spray (fog), foam, dry chemical or CO_2.

Special protective equipment for fire-fighters : -Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures -

Personal precautions : -No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : -Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up

Small spill : -Stop leak if without risk. Material free from contamination can be used for its original purpose. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : - Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Section 7. Handling and storage -

Handling : - Avoid contact with eyes, skin and clothing. Ensure eyewash facilities are located close to the working environment.

Storage : - Keep container tightly closed. Keep container in a cool, well-ventilated area. Keep away from heat and direct sunlight.

Section 8. Exposure controls/personal protection -

Engineering measures : - No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Hygiene measures : - Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure eyewash facilities are located close to the working environment.

Personal protection

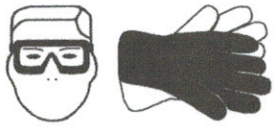
Eyes : - Safety eyewear complying with an approved standard should be used when a risk - assessment indicates this is necessary to avoid exposure to liquid splashes, mists or - dusts. Recommended: Chemical splash goggles or face shield. -

Skin : - Personal protective equipment for the body should be selected based on the task being performed and the risks involved.

Respiratory : - Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: If ventilation is inadequate, use respirator that will protect against dust/mist.

Hands : - Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. >8 hours (breakthrough time): butyl rubber , natural rubber (latex) , nitrile rubber

Personal protective equipment (Pictograms) :



Product name	Exposure limits
Urea	**AIHA WEEL (United States, 5/2010).** TWA: 10 mg/m³ 8 hour(s).

Section 9. Physical and chemical properties -

Physical state : Liquid. [Clear.] -

Color : Colorless. -

Odor : Ammoniacal. [Slight] -

pH : 9,8 to 10 [Conc. (% w/w): 10%] -

Boiling/condensation point : Decomposition temperature: 100°C (212°F) -

Melting/freezing point : -11,5°C (11,3°F) -

Density (g/cm³) : - 1,09 g/cm³ [20°C (68°F)]

Vapor pressure : 6.4 kPa (48 mm Hg) (at 40°C)

Miscible in water. : Yes.

Section 10. Stability and reactivity -

Stability and reactivity : Stable under recommended storage and handling conditions (see section 7). -

Possibility of hazardous reactions - : Under normal conditions of storage and use, hazardous reactions will not occur. -

Incompatibility with various substances : Highly reactive or incompatible with the following materials: oxidizing materials, acids - and alkalis. -

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should - not be produced. -

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur. -

Section 11. Toxicological information -

Potential acute health effects

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. -

Ingestion : No known significant effects or critical hazards. -

Skin contact : No known significant effects or critical hazards. -

Eye contact : No known significant effects or critical hazards. -

Product/ingredient name -	Result	Species	Dose	Exposure
Urea -	LD50 Oral	Mouse	11 g/kg	-
	LD50 Oral	Rat	8471 mg/kg	-

Section 12. Ecological information -

Environmental effects : -Readily biodegradable

Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
Urea	- Acute EC50	3910000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - Neonate - <24 hours	48 hours
	- Acute LC50	>1000 mg/L Marine water	Crustaceans - Amphipod - Chaetogammarus marinus - Young - 5 mm	48 hours
	- Acute LC50	16700 to 19600 ug/L Fresh water	Fish - Rohu - Labeo rohita - Egg	96 hours

Conclusion/Summary - : -Not available.

Biodegradability -

Conclusion/Summary - : The product does not show any bioaccumulation phenomena.

Section 13. Disposal considerations -

Waste disposal : -The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Consult your local or regional authorities.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	Not regulated.	-	-	-		-
TDG Classification	Not regulated.	-	-	-		-
Mexico Classification	Not regulated.	-	-	-		-

Section 15. Regulatory information -

HCS Classification : Not regulated.

U.S. Federal regulations : **TSCA 8(a) IUR Exempt/Partial exemption**: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: No products were found.
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found.

Clean Air Act (CAA) 112 accidental release prevention: No products were found.

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

State regulations : **Connecticut Carcinogen Reporting**: None of the components are listed.
Connecticut Hazardous Material Survey: None of the components are listed.
Florida substances: None of the components are listed.
Illinois Chemical Safety Act: None of the components are listed.
Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed.
Louisiana Reporting: None of the components are listed.
Louisiana Spill: None of the components are listed.
Massachusetts Spill: None of the components are listed.
Massachusetts Substances: None of the components are listed.
Michigan Critical Material: None of the components are listed.
Minnesota Hazardous Substances: None of the components are listed.
New Jersey Hazardous Substances: None of the components are listed.
New Jersey Spill: None of the components are listed.
New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.
New York Acutely Hazardous Substances: None of the components are listed.
New York Toxic Chemical Release Reporting: None of the components are listed.
Pennsylvania RTK Hazardous Substances: None of the components are listed.

Rhode Island Hazardous Substances: None of the components are listed.

United States inventory (TSCA 8b) : All components are listed or exempted.

Section 16. Other information -

National Fire Protection Association (U.S.A.) :

References : -Regulation (EC) No 1272/2008 Annex VI
EU REACH IUCLID5 CSR
National Institute for Occupational Safety and Health, U.S. Dept. of Health, Education, and Welfare, Reports and Memoranda
Registry of Toxic Effects of Chemical Substances
Atrion International Inc. 4777 Levy Street, St Laurent, Quebec HAR 2P9, Canada

Date of issue - : **06.12.2011.**

Date of previous issue : **08.06.2011.**

Version - : **4.02**

▽ Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information provided in this Product Information Sheet is accurate as at the date of its issue. The information it contains is being given for safety guidance purposes and relates only to the specific material and uses described in it. This information does not necessarily apply to that material when combined with other material(s) or when used otherwise than as described herein. Final determination of the suitability of any material is the sole responsibility of the user. All materials may represent unknown hazards and should be used with caution. Yara International ASA disclaims any liability for loss or damage resulting from the use of any data, information or recommendations set out in this Product Information Sheet.

Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Delo® 400 LE SAE 15W-40

Product Use: Engine Oil

Product Number(s): CPS222220

Company Identification

Chevron Products Company

a division of Chevron U.S.A. Inc.

6001 Bollinger Canyon Rd.

San Ramon, CA 94583

United States of America

www.chevronlubricants.com

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency

Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information

email : lubemsds@chevron.com

Product Information: (800) LUBE TEK

MSDS Requests: (800) 414-6737

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	60 - 100 %weight
Zinc alkyl dithiophosphate	68649-42-3	1 - 5 %weight

SECTION 3 HAZARDS IDENTIFICATION

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint: (Cleveland Open Cup) 204 °C (399 °F) Minimum

Autoignition: No Data Available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Keep out of the reach of children.

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API)

Attention: the data below are typical values and do not constitute a specification.

Color: Brown

Physical State: Liquid

Odor: Petroleum odor

pH: Not Applicable

Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F)

Vapor Density (Air = 1): >1

Boiling Point: >315°C (599°F)

Solubility: Soluble in hydrocarbons; insoluble in water

Freezing Point: Not Applicable

Melting Point: Not Applicable

Specific Gravity: 0.87 - 0.9 @ 15.6°C (60.1°F) / 15.6°C (60.1°F)

Density: 0.8806 kg/l @ 15°C (59°F) (Typical)

Viscosity: 15.3 mm2/s @ 100°C (212°F) (Min)

Evaporation Rate: No Data Available

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.

Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3). During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.

ENVIRONMENTAL FATE

Ready Biodegradability: This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner

consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

Additional Information:NOT HAZARDOUS BY U.S. DOT. ADR/RID HAZARD CLASS NOT APPLICABLE.

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE (AMENDMENT 34-08)

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO TI OR IATA DGR

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES: 1. Immediate (Acute) Health Effects: NO

2. Delayed (Chronic) Health Effects: NO

3. Fire Hazard: NO

4. Sudden Release of Pressure Hazard: NO

5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1
01-2A=IARC Group 2A
01-2B=IARC Group 2B
02=NTP Carcinogen
03=EPCRA 313
04=CA Proposition 65
05=MA RTK
06=NJ RTK
07=PA RTK

The following components of this material are found on the regulatory lists indicated.

Zinc alkyl dithiophosphate 03, 06

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: DSL (Canada), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

One or more components is listed on ELINCS (European Union). Secondary notification by the importer may be required. All other components are listed or exempted from listing on EINECS.

One or more components does not comply with the following chemical inventory requirements: AICS (Australia), ENCS (Japan).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Motor oil)

WHMIS CLASSIFICATION:

This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : ENGINE OIL 1 - ENG1

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 2,5,9,11,12,14,15,16.

Revision Date: July 15, 2009

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

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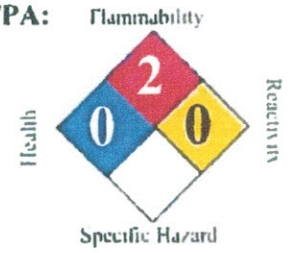
Safety Data Sheet
Diesel Fuel#2-Low Sulfur (LS) and Ultra Low Sulfur Diesel (ULSD)

NFPA:



Hawaii Independent Energy

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Diesel Fuel#2-Low Sulfur (LS) and Ultra Low Sulfur Diesel (ULSD)		
Synonyms	:	888100004790		
SDS Number	:	888100004790	**Version**	: 2.15
Product Use Description	:	Fuel		
Company	:	Hawaii Independent Energy 91-325 Komohana Street Kapolei, HI 96707		
			Chemtrec (Emergency Contact)	: (800) 424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classifications : Flammable Liquid – Category 3 or 4 depending on formulation.
Aspiration Hazard – Category 1.
Carcinogenicity – Category 2
Acute Toxicity - Inhalation – Category 3
Chronic Aquatic Toxicity – Category 2

Pictograms

Signal Word: **Danger**

Hazard Statements:

Flammable liquid and vapor.
May be fatal if swallowed and enters airways – do not siphon diesel by mouth.
Suspected of causing skin cancer if repeated and prolonged skin contact occurs.
Suspected of causing cancer in the respiratory system if repeated and prolonged over-exposure by inhalation occurs.
Toxic if inhaled.
May cause damage to liver, kidneys and nervous system by repeated and prolonged inhalation.
Causes eye irritation by eye contact with liquid.

Repeated or prolonged skin contact can cause skin irritation and dermatitis.
May cause drowsiness or dizziness by inhalation.

Precautionary statements:

Prevention:

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat, sparks, open flames, welding and hot surfaces.
No smoking.
Keep container tightly closed.
Ground and/or bond container and receiving equipment.
Use explosion-proof electrical equipment.
Use only non-sparking tools if tools are used in flammable atmosphere.
Take precautionary measures against static discharge.
Wear gloves, eye protection and face protection as needed to prevent skin and eye contact with liquid.
Wash hands or liquid-contacted skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Do not breathe vapors or mists.
Use only outdoors or in a well-ventilated area.

Response:

In case of fire: Use dry chemical, CO2, water spray or fire fighting foam to extinguish.
If swallowed: Immediately call a poison center, doctor, hospital emergency room, medical clinic or 911. Do NOT induce vomiting. Rinse mouth.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
If in eye: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If skin or eye irritation persists, get medical attention.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
Immediately call or doctor or emergency medical provider.

Storage:

Store in a well ventilated place. Keep cool. Store locked up. Keep container tightly closed . Use only approved containers.

Disposal:

Dispose of contents/containers to approved disposal site in accordance with local, regional, national, and/or international regulations.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Weight %
Fuels, diesel, No 2; Gasoil - unspecified	68476-34-6	100%
Naphthalene	91-20-3	0 - 1%
Nonane	111-84-2	0 - 5%

1,2,4-Trimethylbenzene	95-63-6	0 - 2%
Xylene	1330-20-7	0 - 2%
Sulfur	7704-34-9	15 ppm maximum

SECTION 4. FIRST AID MEASURES

Inhalation : Move to fresh air. Give oxygen. If breathing is irregular or stopped, administer artificial respiration. Seek medical attention immediately.

Skin contact : Take off all contaminated clothing immediately. Wash off immediately with soap and plenty of water. Wash contaminated clothing before re-use. If skin irritation persists, seek medical attention immediately.

Eye contact : Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, seek medical attention.

Ingestion : Do not induce vomiting without medical advice. If a person vomits when lying on his back, place him in the recovery position. Seek medical attention immediately.

Notes to physician : Symptoms: Dizziness, Discomfort, Headache, Nausea, Disorder, Vomiting, Lung edema, Liver disorders, Kidney disorders. Aspiration may cause pulmonary edema and pneumonitis.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO2, water spray or fire fighting foam. LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers. Keep containers and surroundings cool with water spray.

Specific hazards during fire fighting : Fire Hazard. Do not use a solid water stream as it may scatter and spread fire. Cool closed containers exposed to fire with water spray.

Special protective equipment for fire-fighters : Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

Further information : Exposure to decomposition products may be a hazard to health. Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to contain spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact. Ensure adequate ventilation. Use personal protective equipment.

Environmental precautions : Carefully contain and stop the source of the spill, if safe to do so. Protect bodies of

water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection. Discharge into the environment must be avoided. If the product contaminates rivers and lakes or drains inform respective authorities.

Methods for cleaning up : Take up with sand or oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal - caution, flammable vapors may accumulate in closed containers. Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling : Keep away from fire, sparks and heated surfaces. No smoking near areas where material is stored or handled. The product should only be stored and handled in areas with intrinsically safe electrical classification.

: Hydrocarbon liquids including this product can act as a non-conductive flammable liquid (or static accumulators), and may form ignitable vapor-air mixtures in storage tanks or other containers. Precautions to prevent static-initated fire or explosion during transfer, storage or handling, include but are not limited to these examples:

(1) Ground and bond containers during product transfers. Grounding and bonding may not be adequate protection to prevent ignition or explosion of hydrocarbon liquids and vapors that are static accumulators.

(2) Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil or diesel) is loaded into tanks previously containing low flash point products (such gasoline or naphtha).

(3) Storage tank level floats must be effectively bonded.

For more information on precautions to prevent static-initated fire or explosion, see NFPA 77, Recommended Practice on Static Electricity (2007), and API Recommended Practice 2003, Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents (2008).

Conditions for safe storage, including incompatibilities : Keep away from flame, sparks, excessive temperatures and open flame. Use approved containers. Keep containers closed and clearly labeled. Empty or partially full product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose containers to sources of ignition. Store in a well-ventilated area. The storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".

: Keep away from food, drink and animal feed. Incompatible with oxidizing agents. Incompatible with acids.

: Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

List	Components	CAS-No.	Type:	Value
OSHA Z1	Naphthalene	91-20-3	PEL	10 ppm 50 mg/m3
	Xylene	1330-20-7	PEL	100 ppm 435 mg/m3
ACGIH	Diesel Fuel	68476-30-2	TWA	100 mg/m3
	Naphthalene	91-20-3	TWA	10 ppm
		91-20-3	STEL	15 ppm
	Xylene	1330-20-7	TWA	100 ppm
		1330-20-7	STEL	150 ppm
	Nonane	111-84-2	TWA	200 ppm

Engineering measures : Use adequate ventilation to keep gas and vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces. Use only intrinsically safe electrical equipment approved for use in classified areas.

Eye protection : Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

Hand protection : Gloves constructed of nitrile, neoprene, or PVC are recommended. Consult manufacturer specifications for further information.

Skin and body protection : If needed to prevent skin contact, chemical protective clothing such as of DuPont TyChem®, Saranex or equivalent recommended based on degree of exposure. The resistance of specific material may vary from product to product as well as with degree of exposure.

Respiratory protection : A NIOSH/ MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited. Refer to OSHA 29 CFR 1910.134, ANSI Z88.2-1992, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection. Use a NIOSH/ MSHA-approved positive-pressure supplied-air respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

Work / Hygiene practices : Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a cleaning solvent on the skin. Do not use solvents or harsh abrasive skin cleaners for washing this product from exposed skin areas. Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear to straw colored liquid
Odor	Characteristic petroleum or kerosene-like odor
Odor threshold	0.1 - 1 ppm typically reported
pH	Not applicable
Melting point/freezing point	Gel point can be about -15°F; freezing requires laboratory conditions
Initial boiling point & range	154 - 372 °C (310° - 702 °F)
Flash point	38°C Minimum for #1 Diesel, 52°C Minimum for #2 Diesel
Evaporation rate	Higher initially and declining as lighter components evaporate
Flammability (solid, gas)	Flammable vapor released by liquid
Upper explosive limit	6.5 %(V)
Lower explosive limit	0.6 %(V)
Vapor pressure	< 2 mm Hg at 20 °C
Vapor density (air = 1)	> 4.5
Relative density (water = 1)	0.86 g/mL
Solubility (in water)	0.0005 g/100 mL
Partition coefficient (n-octanol/water)	> 3.3 as log Pow
Auto-ignition temperature	257 °C (495 °F)
Decomposition temperature	Will evaporate or boil and possibly ignite before decomposition occurs.
Kinematic viscosity	1 to 6 mm^2/s range reported for No.1 or No.2 diesel at ambient temperatures
Conductivity (conductivity can be reduced by environmental factors such as a decrease in temperature	Diesel Fuel Oils at terminal load rack: At least 25 pS/m Ultra Low Sulfur Diesel (ULSD) without conductivity additive: 0 pS/m to 5 pS/m ULSD at terminal load rack with conductivity additive: At least 50 pS/m JP-8 at terminal load rack: 150 pS/m to 600 pS/m

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Vapors may form explosive mixture with air. Hazardous polymerization does not occur.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Can react with strong oxidizing agents, peroxides, acids and alkalies. Do not use with Viton or Fluorel gaskets or seals.
Conditions to avoid	Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources. Avoid static charge accumulation and discharge (see Section 7).
Hazardous decomposition products	Ignition and burning can release carbon monoxide, carbon dioxide, non-combusted hydrocarbons (smoke) and, depending on formulation, trace amounts

of sulfur dioxide. Diesel exhaust particals may be a lung hazard (see Section 11).

SECTION 11. TOXICOLOGICAL INFORMATION

Inhalation : Vapors or mists from this material can irritate the nose, throat, and lungs, and can cause signs and symptoms of central nervous system depression, depending on the concentration and duration of exposure.

Skin contact Skin irritation leading to dermatitis may occur upon prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed. Long-term, repeated skin contact may cause skin cancer.

Eye contact Eye irritation may result from contact with liquid, mists, and/or vapors.

Ingestion Harmful or fatal if swallowed. Do NOT induce vomiting. This material can irritate the mouth, throat, stomach, and cause nausea, vomiting, diarrhea and restlessness Aspiration hazard if liquid is inhaled into lungs, particularly from vomiting after ingestion. Aspiration may result in chemical pneumonia, severe lung damage, respiratory failure and even death.

Target organ Central nervous system, Eyes, Skin, Kidney, Liver

Further information Studies have shown that similar products produce skin cancer or skin tumors in laboratory animals following repeated applications without washing or removal. The significance of this finding to human exposure has not been determined. Other studies with active skin carcinogens have shown that washing the animal's skin with soap and water between applications reduced tumor formation.
Positive mutagenicity results have been reported.
Repeated over-exposure may cause liver and kidney injury
Components of the product may affect the nervous system.
IARC classifies whole diesel fuel exhaust particulates as probably carcinogenic to humans (Group 2A). NIOSH regards whole diesel fuel exhaust particulates as a potential cause of occupational lung cancer based on animal studies and limited evidence in humans.

Component: : Naphthalene (CAS-No.: 91-20-3)

Fuels, diesel, No 2; Gasoil - unspecified	68476-34-6	Acute oral toxicity LD50 rat Dose: 5,001 mg/kg Acute dermal toxicity LD50 rabbit Dose: 2,001 mg/kg Acute inhalation toxicity LC50 rat Dose 7.64 mg/l Exposure time: 4 h Skin irritation Classification: Irritating to skin. Result: Severe skin irritation Eye irritation Classification: Irritating to eyes. Result: Mild eye irritation
Naphthalene	91-20-3	Acute oral toxicity LD50 rat Dose: 2,001 mg/kg Acute dermal toxicity LD50 rat Dose: 2,501 mg/kg Acute inhalation toxicity LC50 rat Dose 101 mg/l Exposure time: 4 h

		Skin irritation Classification: Irritating to skin. Result: Mild skin irritation Eye irritation Classification: Irritating to eyes. Result: Mild eye irritation Carcinogenicity: N11.00422130
Nonane	111-84-2	Acute oral toxicity LD50 mouse Dose: 218 mg/kg Acute inhalation toxicity LC50 rat Exposure time: 4 h
1,2,4-Trimethylbenzene	95-63-6	Acute inhalation toxicity LC50 rat Dose 18 mg/l Exposure time: 4 h Skin irritation Classification: Irritating to skin. Result: Skin irritation Eye irritation Classification: Irritating to eyes. Result: Eye irritation
Xylene	1330-20-7	Acute oral toxicity LD50 rat Dose: 2,840 mg/kg Acute dermal toxicity LD50 rabbit Dose: ca. 4,500 mg/kg Acute inhalation toxicity LC50 rat Dose 6,350 mg/l Exposure time: 4 h Skin irritation Classification: Irritating to skin. Result: Mild skin irritation Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product. Eye irritation Classification: Irritating to eyes. Result: Mild eye irritation

Carcinogenicity :

NTP	Naphthalene (CAS-No.: 91-20-3)
IARC	Naphthalene (CAS-No.: 91-20-3)
OSHA	No component of this product which is present at levels greater than or equal to 0.1 % is identified as a carcinogen or potential carcinogen by OSHA.
CA Prop 65	WARNING! This product contains a chemical known to the State of California to cause cancer. naphthalene (CAS-No.: 91-20-3)

SECTION 12. ECOLOGICAL INFORMATION

Additional ecological information : Keep out of sewers, drainage areas, and waterways. Report spills and releases, as applicable, under Federal and State regulations.

Component:

Naphthalene	91-20-3	Toxicity to algae: EC50 Species Dose: 33 mg/l Exposure time: 24 h

1,2,4-Trimethylbenzene	95-63-6	Toxicity to fish LC50 Species Pimephales promelas (fathead minnow) Dose: 7.72 mg/l Exposure time: 96 h Acute and prolonged toxicity for aquatic invertebrates: EC50 Species Daphnia Dose: 3.6 mg/l Exposure time: 48 h

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal : Consult federal, state and local waste regulations to determine appropriate waste characterization of material and allowable disposal methods.

SECTION 14. TRANSPORT INFORMATION

CFR

Proper shipping name	: DIESEL FUEL
UN-No.	: 1202 (NA 1993)
Class	: 3
Packing group	: III

TDG

Proper shipping name	: DIESEL FUEL
UN-No.	: UN1202 (NA 1993)
Class	: 3
Packing group	: III

IATA Cargo Transport

UN UN-No.	: UN1202 (NA 1993)
Description of the goods	: DIESEL FUEL
Class	: 3
Packaging group	: III
ICAO-Labels	: 3
Packing instruction (cargo aircraft)	: 366
Packing instruction (cargo aircraft)	: Y344

IATA Passenger Transport

UN UN-No.	: UN1202 (NA 1993)
Description of the goods	: DIESEL FUEL
Class	: 3
Packaging group	: III
ICAO-Labels	: 3
Packing instruction (passenger aircraft)	: 355
Packing instruction (passenger aircraft)	: Y344

IMDG-Code

UN-No.	:	UN 1202 (NA 1993)
Description of the goods	:	DIESEL FUEL
Class	:	3
Packaging group	:	III
IMDG-Labels	:	3
EmS Number	:	F-E S-E
Marine pollutant	:	No

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : Toxic by ingestion
Severe skin irritant
Moderate eye irritant
POSSIBLE CANCER HAZARD

TSCA Status : On TSCA Inventory

DSL Status : All components of this product are on the Canadian DSL list.

SARA 311/312 Hazards : Acute Health Hazard
Chronic Health Hazard
Fire Hazard

CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIROMENT)
The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts crude oil. Fractions of crude oil, and products (both finished and intermediate) from the crude oil refining process and any indigenous components of such from the CERCLA Section 103 reporting requirements. However, other federal reporting requirements, including SARA Section 304, as well as the Clean Water Act may still apply.

PENN RTK — US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Components	CAS-No.
Nonane	111-84-2
1,2,4-Trimethylbenzene	95-63-6
Xylene	1330-20-7
Naphthalene	91-20-3
Fuels, diesel, No 2; Gasoil - unspecified	68476-34-6

MASS RTK — US. Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

Components	CAS-No.
Naphthalene	91-20-3
Xylene	1330-20-7
1,2,4-Trimethylbenzene	95-63-6
Nonane	111-84-2

NJ RTK — US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

Components	CAS-No.
Nonane	111-84-2
1,2,4-Trimethylbenzene	95-63-6
Xylene	1330-20-7
Naphthalene	91-20-3
Fuels, diesel, No 2; Gasoil - unspecified	68476-34-6

SARA III — US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

Components	CAS-No.
Naphthalene	91-20-3
Xylene	1330-20-7
1,2,4-Trimethylbenzene	95-63-6

California Prop. 65 : WARNING! This product contains a chemical known to the State of California to cause cancer.

Naphthalene 91-20-3

SECTION 16. OTHER INFORMATION

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

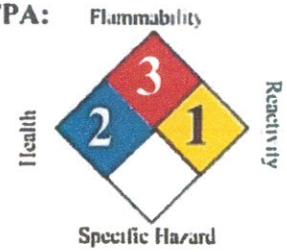
Telephone: +49-(0)271-88072-0

Revision Date : 11/17/2012

29, 1282, 1283, 1330, 1331, 1380, 1400, 1401, 1402, 1403, 1405, 1490, 1510, 1580, 1581, 1582, 1583, 1584, 1585, 1587, 1588, 1589, 1590, 1670, 1859, 1876, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924

Safety Data Sheet
Ethanol

NFPA:



Hawaii Independent Energy

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Ethanol
Synonyms	:	Ethyl Alcohol and Gasoline Mixture, Motor Fuel Ethanol; Denatured (with Gasoline) Ethanol, 888100004475
SDS Number	:	888100004475 **Version** : 2.16
Product Use Description	:	Fuel
Company	:	Hawaii Independent Energy, LLC. 91-325 Komohana Street Kapolei, HI 96707
		Chemtrec (Emergency Contact) : (800) 424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classifications

Flammable Liquid – Category 1 or 2 depending on formulation
Aspiration Hazard – Category 1
Carcinogenicity – Category 2
Specific Target Organ Toxicity (Repeated Exposure) – Category 2
Specific Target Organ Toxicity (Single Exposure) – Category 3
Skin Irritation – Category 2
Eye Irritation – Category 2B
Chronic Aquatic Toxicity – Category 2

Pictograms

Signal Word

Danger

Hazard Statements

Extremely flammable liquid and vapor.
May be fatal if swallowed and enters airways – do not siphon gasoline by mouth.
Suspected of causing blood cancer if repeated over-exposure by inhalation and or skin contact occurs.
May cause damage to liver, kidneys and nervous system by repeated or prolonged inhalation or skin contact.
Causes eye irritation. Can be absorbed through skin.
Repeated or prolonged skin contact can cause irritation and dermatitis

	May cause drowsiness or dizziness. Extreme exposure such as intentional inhalation may cause unconsciousness, asphyxiation and death.
Precautionary statements	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, sparks, open flames. welding and hot surfaces. No smoking. Keep container tightly closed. Ground and or bond container and receiving equipment. Use explosion-proof electrical equipment. Use only non-sparking tools (if tools are used in flammable atmosphere). Take precautionary measures against static discharge. Wear gloves, eye protection and face protection (as needed to prevent skin and eye contact with liquid). Wash hands or liquid-contacted skin thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe vapors. Use only outdoors or in a well-ventilated area.
Response	In case of fire: Use dry chemical, CO2, water spray or fire fighting foam to extinguish. If swallowed: Immediately call a poison center, doctor, hospital emergency room, medical clinic or 911. Do NOT induce vomiting. Rinse mouth. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If in eye: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If skin or eye irritation persists, get medical attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. Get medical attention if you feel unwell.
Storage	Store in a well ventilated place. Keep cool. Store locked up. Keep container tightly closed . Use only approved containers. Some containers not approved for gasoline may dissolve and release flammable gasoline liquid and vapors.
Disposal	Dispose of contents/containers to approved disposal site in accordance with local, regional, national, and/or international regulations.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Weight %
Ethanol; Ethyl alcohol	64-17-5	90 - 95%
Gasoline, natural; Low boiling point naphtha	8006-61-9	5 - 7%
Pentane	109-66-0	0.0 - 1%
Benzene	71-43-2	0.0 - 0.75%
Toluene	108-88-3	0.0 - 0.75%

Butane	106-97-8	0.1 - 0.75%
Xylene	1330-20-7	0.0- 0.75%

SECTION 4. FIRST AID MEASURES

Inhalation : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention immediately.

Skin contact : In case of contact, immediately flush skin with plenty of water. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Contaminated leather, particularly footwear, must be discarded. Note that contaminated clothing may be a fire hazard. If skin irritation persists, seek medical attention.

Eye contact : Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, seek medical attention.

Ingestion : If swallowed Do NOT induce vomiting. Aspiration of material into lungs can cause pulmonary edema. Never give anything by mouth to an unconscious person. Seek medical attention immediately.

Notes to physician : Symptoms: Dizziness, Discomfort, Headache, Nausea, Kidney disorders, Liver disorders. Aspiration may cause pulmonary edema and pneumonitis. Swallowing ethanol and gasoline mixture is more likely to be fatal for small children than adults, even if aspiration does not occur.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Carbon dioxide blanket, Water spray, Dry chemical, Foam, SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO2, water spray, fire fighting foam, or Halon. LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

Specific hazards during fire fighting : Fire Hazard Fire will produce dense black smoke containing hazardous combustion products (see heading 10). Flash back possible over considerable distance.

Special protective equipment for fire-fighters : Use NIOSH/MSHA approved positive pressure self-contained breathing apparatus and fully protective clothing such as bunker gear if needed to prevent exposure.

Further information : Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam. Exposure to decomposition products may be a hazard to health. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Fire residues and contaminated fire extinguishing water may be subject to disposal regulations.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Evacuate personnel to safe areas. Ventilate the area. Remove all sources of

ignition. Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

Environmental precautions : Do not contaminate surface water. Should not be released into the environment. Authorities should be advised if significant releases cannot be contained.

Methods for cleaning up : Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling : Keep away from fire, sparks and heated surfaces. No smoking near areas where material is stored or handled. The product should only be stored and handled in areas with intrinsically safe electrical classification.

: Hydrocarbon liquids including this product can act as a non-conductive flammable liquid (or static accumulators), and may form ignitable vapor-air mixtures in storage tanks or other containers. Precautions to prevent static-initated fire or explosion during transfer, storage or handling, include but are not limited to these examples:

(1) Ground and bond containers during product transfers. Grounding and bonding may not be adequate protection to prevent ignition or explosion of hydrocarbon liquids and vapors that are static accumulators.

(2) Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil or diesel) is loaded into tanks previously containing low flash point products (such gasoline or naphtha).

(3) Storage tank level floats must be effectively bonded.

For more information on precautions to prevent static-initated fire or explosion, see NFPA 77, Recommended Practice on Static Electricity (2007), and API Recommended Practice 2003, Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents (2008).

Conditions for safe storage, including incompatibilities : Keep away from flame, sparks, excessive temperatures and open flame. Use approved containers. Keep containers closed and clearly labeled. Empty or partially full product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose containers to sources of ignition. Store in a well-ventilated area. The storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".

Reports suggest that government-mandated ethanol, if present, may not be compatible with fiberglass gasoline tanks. Ethanol may dissolve fiberglass resin, causing engine damage and possibly allow leakage of explosive gasoline.

: Keep away from food, drink and animal feed. Incompatible with oxidizing agents. Incompatible with acids.

: No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

List	Components	CAS-No.	Type:	Value
OSHA	Benzene	71-43-2	TWA	1 ppm
		71-43-2	STEL	5 ppm
		71-43-2	OSHA_ACT	0.5 ppm
OSHA Z1	Ethanol; Ethyl alcohol	64-17-5	PEL	1,000 ppm 1,900 mg/m3
	Xylene	1330-20-7	PEL	100 ppm 435 mg/m3
ACGIH	Ethanol; ethyl alcohol	64-17-5	TWA	1,000 ppm
	Toluene	108-88-3	TWA	50 ppm
	Xylene	1330-20-7	TWA	100 ppm
		1330-20-7	STEL	150 ppm
	Benzene	71-43-2	TWA	0.5 ppm
		71-43-2	STEL	2.5 ppm

Engineering measures : Use adequate ventilation to keep gas and vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces. Use only intrinsically safe electrical equipment approved for use in classified areas.

Eye protection : Safety glasses or goggles are recommended where there is a possibility of splashing or spraying. Ensure that eyewash stations and safety showers are close to the workstation location.

Hand protection : Gloves constructed of nitrile or neoprene are recommended. Consult manufacturer specifications for further information.

Skin and body protection : If needed to prevent skin contact, chemical protective clothing such as of DuPont TyChem®, Saranex or equivalent recommended based on degree of exposure. The resistance of specific material may vary from product to product as well as with degree of exposure.

Respiratory protection : A NIOSH/ MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited. Refer to OSHA 29 CFR 1910.134, ANSI Z88.2-1992, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection. Use a NIOSH/ MSHA-approved positive-pressure supplied-air respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

Work / Hygiene practices : Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a cleaning solvent on the skin. Do not use solvents or harsh abrasive skin cleaners for washing this product from exposed skin areas. Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Clear to straw colored liquid
Odor		Characteristic hydrocarbon-like
Odor threshold		0.5 - 1.1 ppm
pH		Not applicable
Melting point/freezing point		About -101°C (-150°F)
Initial boiling point & range		Boiling point varies: 30 – 200°C (85 – 392°F)
Flash point		< -21°C (-5.8°F)
Evaporation rate		Higher initially and declining as lighter components evaporate
Flammability (solid, gas)		Flammable vapor released by liquid
Upper explosive limit		7.6 %(V)
Lower explosive limit		1.3 %(V)
Vapor pressure		345 - 1,034 hPa at 37.8 °C (100.0 °F)
Vapor density (air = 1)		Approximately 3 to 4
Relative density (water = 1)		0.8 g/mL
Solubility (in water)		Negligible
Partition coefficient (n-octanol/water)		2 – 7 as log Pow
Auto-ignition temperature		Approximately 250°C (480°F)
Decomposition temperature		Will evaporate or boil and possibly ignite before decomposition occurs.
Conductivity (conductivity can be reduced by environmental factors such as a decrease in temperature)		Hydrocarbon liquids without static dissipater additive may have conductivity below 1 picoSiemens per meter (pS/m). The highest electro-static ignition risks are associated with "ultra-low conductivities" below 5 pS/m. See Section 7 for sources of information on defining safe loading and handling procedures for low conductivity products.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	Vapors may form explosive mixture with air. Hazardous polymerization does not occur.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Can react with strong oxidizing agents, peroxides, alkaline products and strong acids. Contact with nitric and sulfuric acids will form nitrocresols that can decompose violently.
Conditions to avoid	Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources. Avoid static charge accumulation and discharge (see Section 7).
Hazardous decomposition products	Ignition and burning can release carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

SECTION 11. TOXICOLOGICAL INFORMATION

Skin irritation : Irritating to skin. Can be partially absorbed through skin.

Eye irritation Irritating to eyes.

Ingestion Aspiration hazard if liquid is inhaled into lungs, particularly from vomiting after ingestion. Aspiration may result in chemical pneumonia, severe lung damage, respiratory failure and even death. Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest and death may occur

Inhalation and further information Acute toxicity of benzene results primarily from depression of the central nervous system (CNS). Inhalation of concentrations over 50 ppm can produce headache, lassitude, weariness, dizziness, drowsiness, over excitation. Exposure to very high levels can result in unconsciousness and death.

Repeated over-exposure may cause liver and kidney injuries.
Components of the product may affect the nervous system.

IARC has determined that gasoline and gasoline exhaust are possibly carcinogenic in humans. Inhalation exposure to completely vaporized unleaded gasoline caused kidney cancers in male rats and liver tumors in female mice. The U.S. EPA has determined that the male kidney tumors are species-specific and are irrelevant for human health risk assessment. The significance of the tumors seen in female mice is not known. Exposure to light hydrocarbons in the same boiling range as this product has been associated in animal studies with effects to the central and peripheral nervous systems, liver, and kidneys. The significance of these animal models to predict similar human response to gasoline is uncertain.
This product contains benzene. Human health studies indicate that prolonged and/or repeated overexposure to benzene may cause damage to the blood-forming system (particularly bone marrow), and serious blood disorders such as aplastic anemia and leukemia. Benzene is listed as a human carcinogen by the NTP, IARC, OSHA and ACGIH.

Component		
Gasoline, natural; Low boiling point naphtha	8006-61-9	Acute oral toxicity: LD50 rat Dose: >5000 mg/kg Acute inhalation toxicity: LC50 rat Dose: 20.7 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Mild skin irritation Eye irritation: Classification: Irritating to eyes. Result: Moderate eye irritation
Toluene	108-88-3	Acute oral toxicity: LD50 rat Dose: 636 mg/kg Acute dermal toxicity: LD50 rabbit Dose: 12,124 mg/kg Acute inhalation toxicity: LC50 rat Dose: 49 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Mild skin irritation

		Prolonged skin contact may defat the skin and produce dermatitis. Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation
Xylene	1330-20-7	Acute oral toxicity: LD50 rat Dose: 2,840 mg/kg Acute dermal toxicity: LD50 rabbit Dose: ca. 4,500 mg/kg Acute inhalation toxicity: LC50 rat Dose: 6,350 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Mild skin irritation Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product. Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation
Ethanol; Ethyl alcohol	64-17-5	Acute oral toxicity: LD50 rat Dose: 6,200 mg/kg Acute dermal toxicity: LD50 rabbit Dose: 19,999 mg/kg Acute inhalation toxicity: LC50 rat Dose: 8,001 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Mild skin irritation Prolonged skin contact may cause skin irritation and/or dermatitis. Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation Mild eye irritation
Naphthalene	91-20-3	Acute oral toxicity: LD50 rat Dose: 2,001 mg/kg Acute dermal toxicity: LD50 rat Dose: 2,501 mg/kg Acute inhalation toxicity: LC50 rat Dose: 101 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Mild skin irritation Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation Carcinogenicity: N11.00422130
Benzene	71-43-2	Acute oral toxicity: LD50 rat Dose: 930 mg/kg Acute inhalation toxicity: LC50 rat Dose: 44 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Mild skin irritation Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product. Eye irritation: Classification: Irritating to eyes. Result: Risk of serious damage to eyes.

Pentane	109-66-0	Acute oral toxicity: LD50 rat Dose: 2,001 mg/kg Acute inhalation toxicity: LC50 rat Dose: 364 mg/l Exposure time: 4 h Skin irritation: Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product. Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation
Cyclohexane	110-82-7	Acute dermal toxicity: LD50 rabbit Dose: 2,001 mg/kg Acute inhalation toxicity: LC50 rat Dose: 14 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Skin irritation Eye irritation: Classification: Irritating to eyes Result: Mild eye irritation
Ethylbenzene	100-41-4	Acute oral toxicity: LD50 rat Dose: 3,500 mg/kg Acute dermal toxicity: LD50 rabbit Dose: 15,500 mg/kg Acute inhalation toxicity: LC50 rat Dose: 18 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Mild skin irritation Eye irritation: Classification: Irritating to eyes Result: Risk of serious damage to eyes.
Heptane [and isomers]	142-82-5	Acute oral toxicity: LD50 rat Dose: 15,001 mg/kg Acute inhalation toxicity: LC50 rat Dose: 103 g/m3 Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Skin irritation Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product. Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation
N-hexane	110-54-3	Acute oral toxicity: LD50 rat Dose: 25,000 mg/kg Acute dermal toxicity: LD50 rabbit Dose: 2,001 mg/kg Acute inhalation toxicity: LC50 rat Dose: 171.6 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Skin irritation Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation Teratogenicity: N11.00418960

Carcinogenicity

NTP	Naphthalene (CAS-No.: 91-20-3) Benzene (CAS-No.: 71-43-2)
IARC	Gasoline, natural; Low boiling point naphtha (CAS-No.: 8006-61-9) Naphthalene (CAS-No.: 91-20-3) Benzene (CAS-No.: 71-43-2) Ethylbenzene (CAS-No.: 100-41-4)
OSHA	Benzene (CAS-No.: 71-43-2)
CA Prop 65	WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Toluene (CAS-No.: 108-88-3) Benzene (CAS-No.: 71-43-2)

SECTION 12. ECOLOGICAL INFORMATION

Additional ecological information : Keep out of sewers, drainage areas, and waterways. Report spills and releases, as applicable, under Federal and State regulations.

Component:

Ethanol; Ethyl alcohol	64-17-5	Toxicity to fish LC50 Species Leuciscus idus (Golden orfe) Dose: 8,140 mg/l Exposure time: 48 h Acute and prolonged toxicity for aquatic invertebrates: EC50 Species Daphnia magna (Water flea) Dose: 9,268 - 14,221 mg/l Exposure time: 48 h
Pentane	109-66-0	Acute and prolonged toxicity for aquatic invertebrates: EC50 Species Daphnia magna (Water flea) Dose: 9.74 mg/l Exposure time: 48 h
Toluene	108-88-3	Toxicity to fish LC50 Species Carassius auratus (goldfish) Dose: 13 mg/l Exposure time: 96 h Acute and prolonged toxicity for aquatic invertebrates: EC50 Species Daphnia magna (Water flea) Dose: 11.5 mg/l Exposure time: 48 h Toxicity to algae: IC50 Species Selenastrum capricornutum (green algae) Dose: 12 mg/l Exposure time: 72 h

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal : Dispose of container and unused contents in accordance with federal, state and local requirements.

SECTION 14. TRANSPORT INFORMATION

CFR

Proper shipping name	: Denatured Alcohol
UN-No.	: 1987
Class	: 3
Packing group	: II
Emergency Response Guidebook Number	: 127

TDG

Proper shipping name	: Denatured Alcohol
UN-No.	: UN1987
Class	: 3
Packing group	: II
Emergency Response Guidebook Number	: 127

IATA Cargo Transport

UN UN-No.	: UN1987
Description of the goods	: Denatured Alcohol
Class	: 3
Packaging group	: II
ICAO-Labels	: 3
Packing instruction (cargo aircraft)	: 364
Packing instruction (cargo aircraft)	: Y341

IATA Passenger Transport

UN UN-No.	: UN1987
Description of the goods	: Denatured Alcohol
Class	: 3
Packaging group	: II
ICAO-Labels	: 3
Packing instruction (passenger aircraft)	: 353
Packing instruction (passenger aircraft)	: Y341

IMDG-Code

UN-No.	: UN 1987
Description of the goods	: Denatured Alcohol
Class	: 3
Packaging group	: II
IMDG-Labels	: 3
EmS Number	: F-E S-D
Marine pollutant	: Yes

SECTION 15. REGULATORY INFORMATION

TSCA Status	:	On TSCA Inventory
DSL Status	:	All components of this product are on the Canadian DSL list.
SARA 311/312 Hazards	:	Fire Hazard Acute Health Hazard Chronic Health Hazard

CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIROMENT)
The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts crude oil. Fractions of crude oil, and products (both finished and intermediate) from the crude oil refining process and any indigenous components of such from the CERCLA Section 103 reporting requirements. However, other federal reporting requirements, including SARA Section 304, as well as the Clean Water Act may still apply.

PENN RTK — US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Components	CAS-No.
Benzene	71-43-2
Xylene	1330-20-7
Toluene	108-88-3
Gasoline, natural; Low boiling point naphtha	8006-61-9
Ethanol; Ethyl alcohol	64-17-5

MASS RTK — US. Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

Components	CAS-No.
Benzene	71-43-2
Xylene	1330-20-7
Toluene	108-88-3
Gasoline, natural; Low boiling point naphtha	8006-61-9
Ethanol; Ethyl alcohol	64-17-5

NJ RTK — US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

Components	CAS-No.
Benzene	71-43-2
Xylene	1330-20-7
Toluene	108-88-3
Gasoline, natural; Low boiling point naphtha	8006-61-9
Ethanol; Ethyl alcohol	64-17-5

SARA III — US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

Components	CAS-No.
Toluene	108-88-3

Xylene		1330-20-7
Benzene		71-43-2
California Prop. 65	:	WARNING! This product contains a chemical known to the State of California to cause cancer.
		Benzene 71-43-2
		WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.
		Toluene 108-88-3
		Benzene 71-43-2

SECTION 16. OTHER INFORMATION

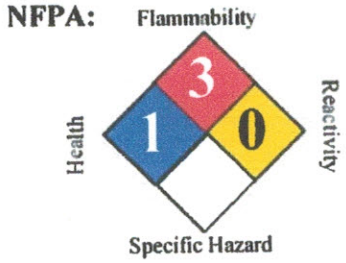
Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision Date : 07/25/2012

1506, 2506

Safety Data Sheet
Gasoline, Unleaded



Hawaii Independent Energy

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Gasoline, Unleaded

Synonyms : Blend of Highly Flammable Petroleum Distillates, Regular, Mid-Grade, Premium, 888100008809

SDS Number : 888100008809 **Version** : 1.1

Product Use Description : Fuel

Company For: Hawaii Independent Energy, LLC.
91-325 Komohana Street
Kapolei, HI 96707

Chemtrec (Emergency Contact) : (800) 424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classifications : Flammable Liquid – Category 1 or 2 depending on formulation.
Aspiration Hazard – Category 1
Carcinogenicity – Category 2
Specific Target Organ Toxicity (Repeated Exposure) – Category 2
Specific Target Organ Toxicity (Single Exposure) – Category 3
Skin Irritation – Category 2
Eye Irritation – Category 2B
Chronic Aquatic Toxicity – Category 2

Pictograms :

Signal Word : **Danger**

Hazard Statements

Extremely flammable liquid and vapor.
May be fatal if swallowed and enters airways – do not siphon gasoline by mouth.
Suspected of causing blood cancer if repeated over-exposure by inhalation and/or skin contact occurs.
May cause damage to liver, kidneys and nervous system by repeated and prolonged inhalation or skin contact. Causes eye irritation. Can be absorbed through skin.
May cause drowsiness or dizziness. Extreme exposure such as intentional inhalation may cause unconsciousness, asphyxiation and death.
Repeated or prolonged skin contact can cause irritation and dermatitis.

Harmful to aquatic life.

Precautionary statements

Prevention : Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat, sparks, open flames, welding and hot surfaces.
No smoking.
Keep container tightly closed.
Ground and/or bond container and receiving equipment.
Use explosion-proof electrical equipment.
Use only non-sparking tools (if tools are used in flammable atmosphere).
Take precautionary measures against static discharge.
Wear gloves, eye protection and face protection (as needed to prevent skin and eye contact with liquid).
Wash hands or liquid-contacted skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Do not breathe vapors.
Use only outdoors or in a well-ventilated area.

Response : In case of fire: Use dry chemical, CO2, water spray or fire fighting foam to extinguish.
If swallowed: Immediately call a poison center, doctor, hospital emergency room, medical clinic or 911. Do NOT induce vomiting. Rinse mouth.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eye: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If skin or eye irritation persists, get medical attention.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
Get medical attention if you feel unwell.

Storage : Store in a well ventilated place. Keep cool. Store locked up. Keep container tightly closed . Use only approved containers. Some containers not approved for gasoline may dissolve and release flammable gasoline liquid and vapors.

Disposal : Dispose of contents/containers to approved disposal site in accordance with local, regional, national, and/or international regulations.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Weight %
Gasoline, natural; Low boiling point naphtha	8006-61-9	10 - 30%
Toluene	108-88-3	10 - 30%
Xylene	1330-20-7	10 - 30%
Ethanol; ethyl alcohol	64-17-5	0-8.2%
Trimethylbenzene	25551-13-7	1 - 5%
Isopentane; 2-methylbutane	78-78-4	1 - 5%

Naphthalene	91-20-3	1 - 5%
Benzene	71-43-2	Less than 1.3%
Pentane	109-66-0	1 - 5%
Cyclohexane	110-82-7	1 - 5%
Ethylbenzene	100-41-4	1 - 5%
Butane	106-97-8	1 - 20%
Heptane [and isomers]	142-82-5	0.5 - 0.75%
N-hexane	110-54-3	0.5 - 0.75%

SECTION 4. FIRST AID MEASURES

Inhalation : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention immediately.

Skin contact : In case of contact, immediately flush skin with plenty of water. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Contaminated leather, particularly footwear, must be discarded. Note that contaminated clothing may be a fire hazard. Seek medical advice if symptoms persist or develop.

Eye contact : Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek medical advice if symptoms persist or develop.

Ingestion : Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Obtain medical attention.

Notes to physician : Symptoms: Dizziness, Discomfort, Headache, Nausea, Kidney disorders, Liver disorders. Aspiration may cause pulmonary edema and pneumonitis. Swallowing gasoline is more likely to be fatal for small children than adults, even if aspiration does not occur.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO2, water spray or fire fighting foam. LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers. Keep containers and surroundings cool with water spray.

Specific hazards during fire fighting : Extremely flammable liquid and vapor. This material is combustible/flammable and is sensitive to fire, heat, and static discharge.

Special protective equipment for fire-fighters : Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing.

Further information	:	Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam. Exposure to decomposition products may be a hazard to health. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	Evacuate personnel to safe areas. Ventilate the area. Remove all sources of ignition. Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).
Environmental precautions	:	Discharge into the environment must be avoided. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods for cleaning up	:	Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling :

Keep away from fire, sparks and heated surfaces. No smoking near areas where material is stored or handled. The product should only be stored and handled in areas with intrinsically safe electrical classification.

Hydrocarbon liquids including this product can act as a non-conductive flammable liquid (or static accumulators), and may form ignitable vapor-air mixtures in storage tanks or other containers. Precautions to prevent static-initated fire or explosion during transfer, storage or handling, include but are not limited to these examples:

(1) Ground and bond containers during product transfers. Grounding and bonding may not be adequate protection to prevent ignition or explosion of hydrocarbon liquids and vapors that are static accumulators.

(2) Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil or diesel) is loaded into tanks previously containing low flash point products (such gasoline or naphtha).

(3) Storage tank level floats must be effectively bonded.

For more information on precautions to prevent static-initated fire or explosion, see NFPA 77, Recommended Practice on Static Electricity (2007), and API Recommended Practice 2003, Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents (2008).

Conditions for safe storage, including incompatibilities : Keep away from flame, sparks, excessive temperatures and open flame. Use approved containers. Keep containers closed and clearly labeled. Empty or partially full product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose containers to sources of ignition. Store in a well-ventilated area. The storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".

Reports suggest that government-mandated ethanol, if present, may not be compatible with fiberglass gasoline tanks. Ethanol may dissolve fiberglass resin, causing engine damage and possibly allow leakage of explosive gasoline.

Keep away from food, drink and animal feed. Incompatible with oxidizing agents. Incompatible with acids.

No decomposition if stored and applied as directed. Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Store only in containers approved and labeled for gasoline.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

List	Components	CAS-No.	Type:	Value
OSHA	Benzene	71-43-2	TWA	1 ppm
		71-43-2	STEL	5 ppm
		71-43-2	OSHA_ACT	0.5 ppm
OSHA Z1	Xylene	1330-20-7	PEL	100 ppm 435 mg/m3
	Ethanol; Ethyl alcohol	64-17-5	PEL	1,000 ppm 1,900 mg/m3
	Naphthalene	91-20-3	PEL	10 ppm 50 mg/m3
	Cyclohexane	110-82-7	PEL	300 ppm 1,050 mg/m3
	Ethylbenzene	100-41-4	PEL	100 ppm 435 mg/m3
	Heptane [and isomers]	142-82-5	PEL	500 ppm 2,000 mg/m3
	N-hexane	110-54-3	PEL	500 ppm 1,800 mg/m3
ACGIH	Toluene	108-88-3	TWA	50 ppm
	Xylene	1330-20-7	TWA	100 ppm
		1330-20-7	STEL	150 ppm
	Ethanol; Ethyl alcohol	64-17-5	TWA	1,000 ppm
	Trimethylbenzene	25551-13-7	TWA	25 ppm
	Isopentane; 2-Methylbutane	78-78-4	TWA	600 ppm
	Naphthalene	91-20-3	TWA	10 ppm
		91-20-3	STEL	15 ppm
	Benzene	71-43-2	TWA	0.5 ppm
		71-43-2	STEL	2.5 ppm
	Pentane	109-66-0	TWA	600 ppm
	Cyclohexane	110-82-7	TWA	100 ppm
	Ethylbenzene	100-41-4	TWA	100 ppm
		100-41-4	STEL	125 ppm
	Heptane [and isomers]	142-82-5	TWA	400 ppm
		142-82-5	STEL	500 ppm

	N-hexane	110-54-3	TWA	50 ppm

Engineering measures : Use adequate ventilation to keep gas and vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces. Use only intrinsically safe electrical equipment approved for use in classified areas.

Eye protection : Safety glasses or goggles are recommended where there is a possibility of splashing or spraying. Ensure that eyewash stations and safety showers are close to the workstation location.

Hand protection : Gloves constructed of nitrile or neoprene are recommended. Consult manufacturer specifications for further information.

Skin and body protection : If needed to prevent skin contact, chemical protective clothing such as of DuPont TyChem®, Saranex or equivalent recommended based on degree of exposure. Flame resistant clothing such as Nomex ® is recommended in areas where material is stored or handled.

Respiratory protection : A NIOSH/ MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited. Refer to OSHA 29 CFR 1910.134, ANSI Z88.2-1992, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection. Use a NIOSH/ MSHA-approved positive-pressure supplied-air respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

Work / Hygiene practices : Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a cleaning solvent on the skin. Do not use solvents or harsh abrasive skin cleaners for washing this product from exposed skin areas. Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Clear to straw colored liquid

Odor : Characteristic hydrocarbon-like

Odor threshold 0.5 - 1.1 ppm

pH : Not applicable

Melting point/freezing point About -101°C (-150°F)

Initial boiling point & range Boiling point varies: 30 – 200°C (85 – 392°F)

Flash point < -21°C (-5.8°F)

Evaporation rate : Higher initially and declining as lighter components evaporate

Flammability (solid, gas) : Flammable vapor released by liquid

Upper explosive limit	7.6 %(V)
Lower explosive limit	1.3 %(V)
Vapor pressure	345 - 1,034 hPa at 37.8 °C (100.0 °F)
Vapor density (air = 1)	Approximately 3 to 4
Relative density (water = 1)	0.8 g/mL
Solubility (in water)	Negligible
Partition coefficient (n-octanol/water)	2 – 7 as log Pow
Auto-ignition temperature	Approximately 250°C (480°F)
Decomposition temperature	Will evaporate or boil and possibly ignite before decomposition occurs.
Kinematic viscosity	0.64 to 0.88 mm^2/s range reported for gasoline
Conductivity (conductivity can be reduced by environmental factors such as a decrease in temperature)	: Hydrocarbon liquids without static dissipater additive may have conductivity below 1 picoSiemens per meter (pS/m). The highest electro-static ignition risks are associated with "ultra-low conductivities" below 5 pS/m. See Section 7 for sources of information on defining safe loading and handling procedures for low conductivity products.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Vapors may form explosive mixture with air. Hazardous polymerization does not occur.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	Can react with strong oxidizing agents, peroxides, alkaline products and strong acids. Contact with nitric and sulfuric acids will form nitrocresols that can decompose violently.
Conditions to avoid	: Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources. Avoid static charge accumulation and discharge (see Section 7).
Hazardous decomposition products	: Ignition and burning can release carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

SECTION 11. TOXICOLOGICAL INFORMATION

Skin contact	: Irritating to skin. Can be partially absorbed through skin.
Eye contact	: Irritating to eyes.
Ingestion	: Aspiration hazard if liquid is inhaled into lungs, particularly from vomiting after ingestion. Aspiration may result in chemical pneumonia, severe lung damage, respiratory failure and even death. Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest and death may occur.

Inhalation and further information

Acute toxicity of benzene results primarily from depression of the central nervous system (CNS). Inhalation of concentrations over 50 ppm can produce headache, lassitude, weariness, dizziness, drowsiness, over excitation. Exposure to very high levels can result in unconsciousness and death.

Repeated over-exposure may cause liver and kidney injuries.
Components of the product may affect the nervous system.

IARC has determined that gasoline and gasoline exhaust are possibly carcinogenic in humans. Inhalation exposure to completely vaporized unleaded gasoline caused kidney cancers in male rats and liver tumors in female mice. The U.S. EPA has determined that the male kidney tumors are species-specific and are irrelevant for human health risk assessment. The significance of the tumors seen in female mice is not known. Exposure to light hydrocarbons in the same boiling range as this product has been associated in animal studies with effects to the central and peripheral nervous systems, liver, and kidneys. The significance of these animal models to predict similar human response to gasoline is uncertain.
This product contains benzene. Human health studies indicate that prolonged and/or repeated overexposure to benzene may cause damage to the blood-forming system (particularly bone marrow), and serious blood disorders such as aplastic anemia and leukemia. Benzene is listed as a human carcinogen by the NTP, IARC, OSHA and ACGIH.

Component:

Gasoline, natural; Low boiling point naphtha	8006-61-9	Acute oral toxicity: LD50 rat Dose: 18.8 mg/kg Acute inhalation toxicity: LC50 rat Dose: 20.7 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin Result: Mild skin irritation Eye irritation: Classification: Irritating to eyes. Result: Moderate eye irritation
Toluene	108-88-3	Acute oral toxicity: LD50 rat Dose: 636 mg/kg Acute dermal toxicity: LD50 rabbit Dose: 12,124 mg/kg Acute inhalation toxicity: LC50 rat Dose: 49 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Mild skin irritation Prolonged skin contact may defat the skin and produce dermatitis. Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation
Xylene	1330-20-7	Acute oral toxicity: LD50 rat Dose: 2,840 mg/kg Acute dermal toxicity: LD50 rabbit Dose: ca. 4,500 mg/kg Acute inhalation toxicity: LC50 rat Dose: 6,350 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin Result: Mild skin irritation

		Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product. Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation
Ethanol; Ethyl alcohol	64-17-5	Acute oral toxicity: LD50 rat Dose: 6,200 mg/kg Acute dermal toxicity: LD50 rabbit Dose: 19,999 mg/kg Acute inhalation toxicity: LC50 rat Dose: 8,001 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Mild skin irritation Prolonged skin contact may cause skin irritation and/or dermatitis. Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation Mild eye irritation
Naphthalene	91-20-3	Acute oral toxicity: LD50 rat Dose: 2,001 mg/kg Acute dermal toxicity: LD50 rat Dose: 2,501 mg/kg Acute inhalation toxicity: LC50 rat Dose: 101 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Mild skin irritation Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation Carcinogenicity: N11.00422130
Benzene	71-43-2	Acute oral toxicity: LD50 rat Dose: 930 mg/kg Acute inhalation toxicity: LC50 rat Dose: 44 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Mild skin irritation Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product. Eye irritation: Classification: Irritating to eyes. Result: Risk of serious damage to eyes.
Pentane	109-66-0	Acute oral toxicity: LD50 rat Dose: 2,001 mg/kg Acute inhalation toxicity: LC50 rat Dose: 364 mg/l Exposure time: 4 h Skin irritation: Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product. Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation
Cyclohexane	110-82-7	Acute dermal toxicity: LD50 rabbit Dose: 2,001 mg/kg Acute inhalation toxicity: LC50 rat Dose: 14 mg/l Exposure time: 4 h

		Skin irritation: Classification: Irritating to skin. Result: Skin irritation Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation
Ethylbenzene	100-41-4	Acute oral toxicity: LD50 rat Dose: 3,500 mg/kg Acute dermal toxicity: LD50 rabbit Dose: 15,500 mg/kg Acute inhalation toxicity: LC50 rat Dose: 18 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Mild skin irritation Eye irritation: Classification: Irritating to eyes. Result: Risk of serious damage to eyes.
Heptane [and isomers]	142-82-5	Acute oral toxicity: LD50 rat Dose: 15,001 mg/kg Acute inhalation toxicity: LC50 rat Dose: 103 g/m3 Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Skin irritation Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product. Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation
N-hexane	110-54-3	Acute oral toxicity: LD50 rat Dose: 25,000 mg/kg Acute dermal toxicity: LD50 rabbit Dose: 2,001 mg/kg Acute inhalation toxicity: LC50 rat Dose: 171.6 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Skin irritation Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation Teratogenicity: N11.00418960

Carcinogenicity

NTP	:	Naphthalene (CAS-No.: 91-20-3) Benzene (CAS-No.: 71-43-2)
IARC	:	Gasoline, natural; Low boiling point naphtha (CAS-No.: 8006-61-9) Naphthalene (CAS-No.: 91-20-3) Benzene (CAS-No.: 71-43-2) Ethylbenzene (CAS-No.: 100-41-4)
OSHA	:	Benzene (CAS-No.: 71-43-2)
CA Prop 65	:	WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Toluene (CAS-No.: 108-88-3)

Benzene (CAS-No.: 71-43-2)

SECTION 12. ECOLOGICAL INFORMATION

Additional ecological information : Keep out of sewers, drainage areas, and waterways. Report spills and releases, as applicable, under Federal and State regulations.

Component:

Toluene	108-88-3	Toxicity to fish LC50 Species Carassius auratus (goldfish) Dose: 13 mg/l Exposure time: 96 h Acute and prolonged toxicity for aquatic invertebrates: EC50 Species Daphnia magna (Water flea) Dose: 11.5 mg/l Exposure time: 48 h Toxicity to algae: IC50 Species Selenastrum capricornutum (green algae) Dose: 12 mg/l Exposure time: 72 h
Ethanol; Ethyl alcohol	64-17-5	Toxicity to fish LC50 Species Leuciscus idus (Golden orfe) Dose: 8,140 mg/l Exposure time: 48 h Acute and prolonged toxicity for aquatic invertebrates: EC50 Species Daphnia magna (Water flea) Dose: 9,268 - 14,221 mg/l Exposure time: 48 h
Isopentane; 2-Methylbutane	78-78-4	Toxicity to fish LC50 Species Oncorhynchus mykiss (rainbow trout) Dose: 3.1 mg/l Exposure time: 96 h Acute and prolonged toxicity for aquatic invertebrates: EC50 Species Daphnia magna (Water flea) Dose: 2.3 mg/l Exposure time: 96 h
Naphthalene	91-20-3	Toxicity to algae: EC50 Species Dose: 33 mg/l Exposure time: 24 h
Pentane	109-66-0	Acute and prolonged toxicity for aquatic invertebrates: EC50 Species Daphnia magna (Water flea) Dose: 9.74 mg/l Exposure time: 48 h
Cyclohexane	110-82-7	Acute and prolonged toxicity for aquatic invertebrates: EC50 Species Daphnia magna (Water flea) Dose: 3.78 mg/l Exposure time: 48 h

Heptane [and isomers]	142-82-5	Toxicity to fish LC50 Species Carassius auratus (goldfish) Dose: 4 mg/l Exposure time: 24 h Acute and prolonged toxicity for aquatic invertebrates: EC50 Species Daphnia magna (Water flea) Dose: 1.5 mg/l Exposure time: 48 h
N-hexane	110-54-3	Toxicity to fish LC50 Species Pimephales promelas (fathead minnow) Dose: 2.5 mg/l Exposure time: 96 h Acute and prolonged toxicity for aquatic invertebrates: EC50 Species Daphnia magna (Water flea) Dose: 2.1 mg/l Exposure time: 48 h

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal : Dispose of container and unused contents in accordance with federal, state and local requirements.

SECTION 14. TRANSPORT INFORMATION

CFR

Proper shipping name	: Petrol
UN-No.	: 1203
Class	: 3
Packing group	: II

TDG

Proper shipping name	: Gasoline
UN-No.	: UN1203
Class	: 3
Packing group	: II

IATA Cargo Transport

UN UN-No.	: UN1203
Description of the goods	: Gasoline
Class	: 3
Packaging group	: II
ICAO-Labels	: 3
Packing instruction (cargo aircraft)	: 364
Packing instruction (cargo aircraft)	: Y341

IATA Passenger Transport

UN UN-No.	: UN1203
Description of the goods	: Gasoline
Class	: 3

Packaging group	:	II
ICAO-Labels	:	3
Packing instruction (passenger aircraft)	:	353
Packing instruction (passenger aircraft)	:	Y341

IMDG-Code

UN-No.	:	UN 1203
Description of the goods	:	Gasoline
Class	:	3
Packaging group	:	II
IMDG-Labels	:	3
EmS Number	:	F-E S-E
Marine pollutant	:	No

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : Flammable liquid
Highly toxic by ingestion
Moderate skin irritant
Severe eye irritant
Carcinogen

TSCA Status : On TSCA Inventory

DSL Status : . All components are on the Canadian DSL list.

SARA 311/312 Hazards : Fire Hazard
Acute Health Hazard
Chronic Health Hazard

CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIROMENT)
The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts crude oil. Fractions of crude oil, and products (both finished and intermediate) from the crude oil refining process and any indigenous components of such from the CERCLA Section 103 reporting requirements. However, other federal reporting requirements, including SARA Section 304, as well as the Clean Water Act may still apply.

California Prop. 65 : WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Toluene	108-88-3
Benzene	71-43-2

SECTION 16. OTHER INFORMATION

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

6, 8, 10, 12, 14, 16, 64, 68, 91, 112, 306, 1092, 1106, 1500, 1570, 1571, 1651, 1652, 1654, 1700, 1701, 1702, 1710, 1711, 1714, 1726, 1729, 1730, 1732, 1733, 1826, 1848, 1880, 1950

Safety Data Sheet

HiTEC 6590C Fuel Additive

MSDS no. H6590C

HiTEC is a trademark owned by Afton Chemical Corporation or one of its subsidiaries.

1. Product and company identification

Product use Petrochemical industry: Fuel additive.

Date of issue/Revisions 6 April 2011

In case of emergency - Chemical

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+65 3158-1074 (Asia Pacific)
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+61 2801 44558 (Australia)

Manufacturer / Supplier

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2. HAZARDS IDENTIFICATION

Notice to reader

Afton operates a world-wide system for hazard communication. Some hazards shown in Section 2 may apply to non-EU countries and may not result in classification and labeling in the EU. Please see Sections 3 and 15 for country specific classification information, and Section 11 for additional details.

Europe: The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

Australia: HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

Primary hazards and critical effects : Warning.
CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION.

Physical/chemical hazards : COMBUSTIBLE. - United States and Canada
FLAMMABLE. - European Union
VAPOR MAY CAUSE FLASH FIRE.

Environmental hazards : Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Hazardous Material Information System (U.S.A.)

Health	1
Fire hazard	2
Reactivity	0

3. Composition/information on ingredients

Note: see section 8 for occupational exposure limits and section 11 for LC50/LD50 information

Substance/Preparation : Preparation

Ingredient name	CAS no.	Conc. (% w/w)	EU Classification	WHMIS Regulated?

Solvent naphtha (petroleum), light aromatic	64742-95-6	30 - 60	R10 Xn; R65 Xi; R37 R66, R67 N; R51/53	Yes.
olyolefin alkyl phenol alkyl amine	Proprietary	30 - 60	Xi; R36/38	Yes.
Benzene, 1,2,4-trimethyl-	95-63-6	10 - 19.9	R10 Xn; R20 Xi; R36/37/38 N; R51/53	Yes.
Benzene, 1,3,5-trimethyl-	108-67-8	5 - 9.9	R10 Xi; R37 N; R51/53	Yes.
N-Propylbenzene	103-65-1	1 - 4.9	R10 Xn; R65 Xi; R37 N; R51/53	Yes.
Xylene	1330-20-7	1 - 4.9	R10 Xn; R20/21 Xi; R38	Yes.
Cumene	98-82-8	1 - 4.9	R10 Xn; R65 Xi; R37 N; R51/53	Yes.
2-Ethyl hexanol	104-76-7	1 - 4.9	Xi; R36/38	Yes.
Benzene, 1,2,3-trimethyl-	526-73-8	1 - 4.9	R10	Yes.
Solvent naphtha (petroleum), heavy aromatic	64742-94-5	0.5 - 0.99	Xn; R65 R66, R67 N; R51/53	Yes.

4. First aid measures

Inhalation : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Ingestion : If affected person is fully conscious, give one glass of water to drink. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.

kin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately.

Eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

5. Fire-fighting measures

Extinguishing media : In case of fire, use water spray (fog), foam, dry chemical or CO_2.

Fire-fighting procedures : Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

Fire/explosion hazards : COMBUSTIBLE. - United States and Canada FLAMMABLE. - European Union
VAPOR MAY CAUSE FLASH FIRE. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Hazardous decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Flash point : Closed cup: 44°C (111.2°F) [Pensky-Martens. (Minimum)]

6. Accidental release measures

Personal precautions : Immediately contact emergency personnel. Eliminate all ignition sources. Keep unnecessary personnel away. Use suitable protective equipment (section 8). Follow all fire-fighting procedures (section 5). Do not touch or walk through spilled material.

Environmental precautions and clean-up methods : If emergency personnel are unavailable, contain spilled material. For small spills, add absorbent (soil may be used in the absence of other suitable materials) and use a non-sparking or explosion-proof means to transfer material to a sealable, appropriate container for disposal. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal. Avoid contact of spilled material with soil and prevent runoff entering surface waterways.

Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and storage

Handling : Avoid contact with eyes, skin and clothing. Keep container closed. Use only with adequate ventilation. Avoid breathing vapor or mist. Keep away from heat, sparks and flame. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Wash thoroughly after handling.

Storage : Keep container in a well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

8. Exposure controls/personal protection

Engineering controls : Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

Personal protective equipment

Respiratory system : Use appropriate respiratory protection if there is the potential to exceed the exposure limit(s).

Skin and body : Where contact is likely, wear chemical resistant gloves, a chemical resistant suit, and boots. Additional body garments should be used based upon the task being performed.

Hands : Hand Protection: Wear chemical resistant gloves. Nitrile gloves of minimum thickness 0.4 mm have an expected breakthrough time of 30 minutes or less when in frequent contact with the product. Due to variable exposure conditions the user must consider that the practical use of a chemical-protective glove in practice may be much shorter than the permeation time above. Manufacturer's directions for use, especially about the minimum thickness and the minimum breakthrough time, must be observed. This information does not replace suitability tests by the end user since glove protection varies depending on the conditions under which the product is used.

Eyes : Safety goggles are considered minimum protection. Goggles with a face shield may be necessary depending on quantity of material and conditions of use.

Occupational exposure limits

Ingredient name	OEL United States	OEL Canada	OEL Europe	OEL Australia
1) Benzene, 1,2,4-trimethyl-	**ACGIH (United States, 1999).** TWA: 25 ppm	(Canada). TWA: 25 ppm	**EH40 (UK) (Europe).** TWA: 25 ppm	**ACGIH (United States, 1999).** TWA: 25 ppm
2) Benzene, 1,3,5-trimethyl-	**ACGIH (United States, 1999).** TWA: 25 ppm	(Canada). TWA: 25 ppm	**EH40 (UK) (Europe).** TWA: 25 ppm	**ACGIH (United States, 1999).** TWA: 25 ppm
3) Xylene	**ACGIH (United States, 1996).** TWA: 100 ppm STEL: 150 ppm **OSHA (United States).** TWA: 100 ppm	(Canada). TWA: 100 STEL: 150	**EH40 (UK) (Europe, 2002). Absorbed through skin.** TWA: 50 ppm 8 hour(s). STEL: 100 ppm 15 minute(s).	**NOHSC (Australia, 2003).** STEL: 80 ppm 15 minute(s).
4) Cumene	**ACGIH (United States, 1994). Absorbed through skin.** TWA: 50 ppm **OSHA (United States, 1989). Absorbed through skin.** TWA: 50 ppm	(Canada). Absorbed through skin. TWA: 50 ppm	**EH40 (UK) (Europe). Absorbed through skin.** TWA: 25 ppm 8 hour(s). **EH40 (UK) (Europe, 2002). Absorbed through skin.** TWA: 125 mg/m³ 8 hour(s). STEL: 250 mg/m³ 15 minute(s).	**NOHSC (Australia, 2003). Absorbed through skin.** TWA: 25 ppm 8 hour(s). STEL: 75 ppm 15 minute(s).
5) Benzene, 1,2,3-trimethyl-	**ACGIH (United States, 1999).** TWA: 25 ppm	(Canada). TWA: 25 ppm	**ACGIH (United States, 1999).** TWA: 25 ppm	**ACGIH (United States, 1999).** TWA: 25 ppm

9. Physical and chemical properties

Physical state and Appearance : Liquid.

Color : Amber.

Vapor pressure : 0.9128 @ 15.6°C

Density : Not determined.

Viscosity : 17 cSt at 40°C

Auto-ignition temperature : Not determined.

Flash point : Closed cup: 44°C (111.2°F) [Pensky-Martens. (Minimum)]

10. Stability and reactivity

.ability : The product is stable.

Materials to avoid : Strong oxidizing and reducing agents.

Conditions to avoid : High temperatures, sparks, and open flames.

11. Toxicological information

Routes of entry : Skin, Eyes, Ingestion, and Inhalation.

Target organs : Contains material which may cause damage to the following organs: blood, kidneys, lungs, liver, heart, gastrointestinal tract, upper respiratory tract, immune system, skin, eyes, central nervous system (CNS).

Acute effects

Inhalation : Irritating to respiratory system.

Ingestion :

Ingestion may cause gastrointestinal irritation and diarrhea.

Skin contact : Irritating to skin.

Eye contact : Irritating to eyes.

Adverse effects : - Adverse symptoms may include the following:: In the presence of slight maternal toxicity, fetotoxic effects have been observed in the offspring of rats exposed by inhalation to Solvent Naphtha (petroleum) light aromatic.
- Adverse symptoms may include the following:: This product contains trimethylbenzene. Literature data indicate that long-term inhalation exposure causes blood effects in laboratory animals.
- Adverse symptoms may include the following:: Central nervous system, liver, kidneys, and blood effects by inhalation and heart beat irregularity (arrythmia) and heart beat - increase. High exposures to xylene in some animal studies, often at levels toxic to the mother, affected embryo/fetal development. The significance of this finding to humans is not known. Xylene vapour has caused occupational skin sensitization in humans.
- Adverse symptoms may include the following:: liver, kidneys, lungs, and heart effects by dermal route and immune system effects by ingestion route. Not a developmental toxicant when administered dermally. Weak carcinogenic liver response was observed in mice, but not rats.

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA	EU
Xylene	A4	-	-	-	-	-	-

Toxicity data

Product/ingredient name	Result	Species	Dose	Exposure
Solvent naphtha (petroleum), light aromatic	LD50 Oral	Rat	8400 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
	LD50 Oral	Rat	2900 mg/kg	-
Benzene, 1,2,4-trimethyl-	LD50 Dermal	Rabbit	3160 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
	LD50 Oral	Rat	3400 to 6000 mg/kg	-
	LC50 Inhalation Vapor	Rat	18000 mg/m³	4 hours
Benzene, 1,3,5-trimethyl-	LC50 Inhalation Vapor	Rat	24000 mg/m³	4 hours
N-Propylbenzene	LD50 Oral	Rat	6040 mg/kg	-
Xylene	LD50 Dermal	Rabbit	>14100 mg/kg	-
	LD50 Oral	Rat	4300 mg/kg	-
	LC50 Inhalation Vapor	Rat	5000 to 8500 ppm	4 hours
Cumene	LD50 Dermal	Rabbit	10578 mg/kg	-
	LD50 Oral	Mouse	12750 mg/kg	-
	LD50 Oral	Rat	1400 mg/kg	-
	LC50 Inhalation Vapor	Rat	8000 ppm	4 hours
2-Ethyl hexanol	LD50 Dermal	Rabbit	1970 mg/kg	-
	LD50 Dermal	Rabbit	1700 mg/kg	-
	LD50 Oral	Rat	2000 to 5000 mg/kg	-
	LD50 Oral	Mouse	2000 to 3800 mg/kg	-
	LD50 Oral	Guinea pig	1900 mg/kg	-
	LC50 Inhalation Vapor	Rat	>227 ppm	6 hours

Other information : Not available.

12. Ecological information

Environmental hazards : Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment. Based on calculation.

Environmental fate : This product contains components which may be persistent in the environment.

13. Disposal considerations

Waste handling and disposal : Waste must be disposed of in accordance with federal, state and local environmental control regulations.

14. Transport information

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	NA1993	Combustible liquids, n.o.s. (Xylene, Petroleum distillates)	Combustible liquid.	III		-
TDG Classification	UN1993	Flammable liquid, n.o.s. (Xylene, Petroleum distillates)	3	III		-
ADR/RID Class	UN1993	Flammable liquid, n.o.s. (Xylene, Petroleum distillates)	3	III		
IMDG Class	UN1993	Flammable liquid, n.o.s. (Xylene, Petroleum distillates)	3	III		-Marine pollutant
ATA-DGR Class	UN1993	Flammable liquid, n.o.s. (Xylene, Petroleum distillates)	3	III		-
ADG Class	UN1993	Flammable liquid, n.o.s. (Xylene, Petroleum distillates)	3	III		-

Notice to reader

The above transport information is provided to assist in the proper classification of this product and may not be suitable for all shipping conditions.

15. Regulatory information

EU regulations

Hazard symbol(s) :

Irritant, Dangerous for the environment

Risk phrases : R10- Flammable.
R36/37/38- Irritating to eyes, respiratory system and skin.
R67- Vapors may cause drowsiness and dizziness.
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases : S16- Keep away from sources of ignition - No smoking.
S23- Do not breathe vapor.
S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.
S57- Use appropriate containment to avoid environmental contamination.

Contains : Solvent naphtha (petroleum), light aromatic 265-199-0

US regulations

SARA 313 toxic chemical notification and release reporting (w/w%) :

Benzene, 1,2,4-trimethyl-	10 - 19.9
Xylene	1 - 4.9
Cumene	1 - 4.9

SARA 311/312 Hazardous Categorization : SARA 311/312 MSDS distribution - chemical inventory - hazard identification : Fire hazard, Immediate (acute) health hazard , Delayed (chronic) health hazard

RQ (Reportable quantity) : CERCLA: Hazardous substances.: Xylene: 100 lbs. (45.4 kg); CUMENE: 5000 lbs. (2270 kg); Ethylbenzene: 1000 lbs. (454 kg); Naphthalene: 100 lbs. (45.4 kg); STYRENE: 1000 lbs. (454 kg); Toluene: 1000 lbs. (454 kg); Benzene: 10 lbs. (4.54 kg); P-XYLENE: 100 lbs. (45.4 kg); Acetaldehyde: 1000 lbs. (454 kg); FURAN: 100 lbs. (45.4 kg); Propylene oxide: 100 lbs. (45.4 kg); o-XYLENE: 1000 lbs. (454 kg); MALEIC ANHYDRIDE: 5000 lbs. (2270 kg);

State - California Prop. 65 : This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute:
Cumene

Canadian regulations

WHMIS (Classification) : Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
Class D-2B: Material causing other toxic effects (Toxic).

International Inventory Status

United States inventory (TSCA 8b)	:	All components are listed or exempted.
Canada inventory	:	All components are listed or exempted.
Europe inventory	:	All components are listed or exempted.
Japan inventory (ENCS)	:	All components are listed or exempted.
Australia inventory (AICS)	:	At least one component is not listed.
Korea inventory (KECI)	:	All components are listed or exempted.
China inventory (IECSC)	:	All components are listed or exempted.
Philippines inventory (PICCS)	:	All components are listed or exempted.

16. Other information

PREPARATION INFORMATION

alidated by HS&E Department (Tel: +1 804 788 5800) on 4/6/2011.

Date of printing : **4/6/2011.**

Indicates information that has changed from previously issued version.

Notice to reader

This information and these recommendations are offered in good faith and believed to be correct as of the date hereof. Information and recommendations are supplied upon the condition that the recipients will make their own decision as to safety and suitability for their purposes. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature, are made with respect to the product or the information and recommendations. Afton makes no representation as to completeness or accuracy. In no event will Afton be responsible for damages of any nature whatsoever resulting from the use or reliance upon the information and recommendations.

ADDRESS CONTACT INFORMATION

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n Australia:
Afton Chemical Asia Pacific Company
Level 9, 20 Berry Street
North Sydney, NSW 2060
Australia
Telephone number: +61 2801 44558
Business Hours: 9:00am - 5:00pm

In China:
Afton Chemical Trading (Beijing) Co., Ltd.
Room 808 China World Office 2
No. 1 Jian Guo Men Wai Avenue
Beijing 100004 China
Telephone number: +86 10 6535 0000

Full text of R-phrases appearing in section 3: : R10- Flammable.
R20- Harmful by inhalation.
R20/21- Harmful by inhalation and in contact with skin.
R65- Harmful: may cause lung damage if swallowed.
R37- Irritating to respiratory system.
R38- Irritating to skin.
R36/38- Irritating to eyes and skin.
R36/37/38- Irritating to eyes, respiratory system and skin.
R66- Repeated exposure may cause skin dryness or cracking.
R67- Vapors may cause drowsiness and dizziness.
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

*** * * END OF MSDS * * ***

OLI-9101.x
Material Safety Data Sheet

1 Company Identification

Innospec Fuel Specialties
8375 S. Willow Street
Littleton, CO 80124

Product information 1-800-441-9547
In Case of Emergency
Call Chemtrec 1-800-424-9300

2 Composition / Ingredient Information

Material	CAS Number	%
Proprietary Polymers		60-80
*Xylene	1330-20-7	20-40
*(Ethylbenzene)	100-41-4	(3-6)
Light Ends of Polyethylbenzene Residue	178535-25-6	10-20
*(Naphthalene)	91-20-3	(<2)

*Disclosure as a toxic chemical is required under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

3 Hazardous Identification

Potential Health Effects

Skin contact may cause skin irritation with discomfort or rash. Xylene can penetrate the skin in amounts capable of causing systemic toxicity. Eye contact may cause eye irritation with discomfort, tearing or blurring of vision. Inhalation of Ethylbenzene may cause irritation of the upper respiratory passages with coughing and discomfort.

Inhalation or ingestion of Xylene or Ethylbenzene may cause nonspecific discomfort, such as nausea, headache, or weakness; or temporary nervous system depression with anesthetic effects such as dizziness, headache, confusion, incoordination, and loss of consciousness.

Inhalation or ingestion of Ethylbenzene may cause abnormal liver or kidney function. Aspiration of Ethyl benzene into the lungs during ingestion or vomiting may lead to chemical pneumonitis.

Ingestion of Xylene or Ethylbenzene may cause gastrointestinal tract irritation. Higher exposure to Xylene may lead to cardiac stress; anemia and other blood changes; respiratory effects; possible liver and kidney damage; or fatality from gross overexposure.

Eye contact with the product ingredients may cause eye irritation with discomfort, tearing, or blurring of vision. Direct exposure may cause skin irritation (redness, swelling). A single prolonged exposure may result in the material being absorbed through the skin in harmful amounts.

Inhalation or ingestion of Heavy Aromatic Naphtha may cause central nervous system depression with anesthetic effects, such as dizziness, headache, confusion, incoordination and loss of consciousness. Higher exposures may result in fatality from gross overexposure. Ingestion may cause gastrointestinal irritation. Aspiration hazard! Small amounts aspirated into the lungs during ingestion or vomiting may cause lung injury, possibly leading to death. Symptoms of aspiration into the lungs include coughing, gasping, choking, shortness of breath, bluish discolored skin, rapid breathing and heart rate. Chemical pneumonitis from aspiration may result in fever. Pulmonary edema or bleeding, drowsiness, confusion, coma and seizures may occur in more serious cases. Symptoms may develop immediately or as late as 24 hours after the exposure, depending on how much chemical entered the lungs.

In general, overexposure to high atmospheric concentrations of alkyl-substituted aromatics may produce central nervous system depression, headache, dizziness, incoordination, nausea and loss of appetite. Aspiration (liquid enters the lung), may cause lung damage due to chemical pneumonia, a condition caused by petroleum-like solvents.

Minute amounts of petroleum hydrocarbons aspirated into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possible death.

Individuals with preexisting diseases of the kidneys or liver may have increased susceptibility to the toxicity of excessive exposures.

Carcinogenicity Information

Ethylbenzene and Naphthalene have been classified by the Internal Agency for Research on Cancer (IARC) as possibly carcinogenic to humans (Group 2B). This IARC classification was based upon limited evidence of carcinogenicity to animals and inadequate evidence of carcinogenicity to humans.

4 First Aid Measures

Inhalation
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Skin Contact
Flush skin with water after contact. Wash contaminated clothing before reuse.

Eye Contact
In case of contact immediately, flush eyes with plenty of water for at least 15 minutes. Call a physician.

Ingestion
If swallowed, do not induce vomiting. Allow victim to rinse his mouth and then to drink 2-4 cupfuls of water. Never give anything by mouth to an unconscious person. Call a physician.

Notes to Physicians

Activated charcoal mixture may be administered. To prepare activated charcoal mixture, suspend 50 grams activated charcoal in 400-ml water and mix thoroughly. Administer 5 ml/kg or 350 ml for an average adult.

Because of the danger of aspiration, emesis or gastric lavage should not be employed unless the risk is justified by the presence of additional toxic substances. Activated charcoal may induce vomiting, but may be given after emesis or lavage to absorb toxic additives. Steroid therapy in mild to moderate cases does not improve outcome. Bacterial pneumonia often occurs after exposure, but prophylactic antibiotics are not indicated and should be reserved for documented bacterial pneumonia.

5 Fire Fighting Measures

Flammable Properties

Flash Point..... 94°F (34°C)
Method..... PMCC
Flammable Liquid

Extinguishing Media

Water Spray, Foam, Dry Chemical, CO_2.

Fire Fighting Instructions

Wear self-contained breathing apparatus. Wear full protective equipment.

6 Accidental Release Measures

Note: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) SECTIONS before proceeding with clean up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean up. Soak up with sawdust, sand, oil dry or other absorbent material. Remove source of heat, sparks, flame, impact, friction, or electricity. Dike spill. Prevent material from entering sewers, waterways, or low areas.

Spill Clean-Up

Soak up with sawdust, sand, oil dry or other absorbent material.

Accidental Release Measures

Spills are very slippery and should be cleaned up promptly. Unless released material is cleaned up immediately for reprocessing, recycling, or reuse, a release of 100 lbs. may trigger the reporting requirements of CERCLA Section 103.

7 Handling and Storage

Handling (Personnel)

Avoid breathing vapors or mist. Avoid contact with eyes, skin, or clothing. Wash thoroughly after handling.

Handling (Physical Aspects)

Keep away from heat, sparks and flames.

Storage
Store in a well-ventilated place. Keep container tightly closed. Store in accordance with National Fire Protection Association recommendations.

8 Exposure Controls

Engineering Controls
Use only with adequate ventilation. Keep container tightly closed.

Personal Protective Equipment

Eye/Face Protection
Wear coverall chemical splash goggles or safety glasses.

Respirators
Where there is potential for airborne exposures in excess of applicable limits, wear NIOSH/MSHA approved respiratory protection.

Protective Clothing
Where there is potential for skin contact have available and wear as appropriate impervious gloves, apron, pants, hood and jacket.

Exposure Limits

Xylene:

PEL (OSHA)	100 ppm, 435 ,mg/m^3, 8 hr TWA
TLV (ACGIH)	100 ppm, 434 mg/m^3, 8 hr TWA STEL 150 ppm, 651 mg/m^3, A4; BEI
AEL* (Innospec Fuel Specialties)	100 ppm, 8 & 12 hr, TWA, skin 150 ppm, 15 minute TWA

Ethylbenzene:

PEL (OSHA)	100 ppm, 435 mg/m^3, 8 hr, TWA
TLV (ACGIH)	100 ppm, 434 mg/m^3, 8 hr, TWA, A3, BEI STEL 125 ppm, 543 mg/m^3
AEL* (Innospec Fuel Specialties)	None established

Heavy Aromatic Naphtha:

PEL (OSHA)	None established
TLV (ACGIH)	None established
AEL* (Innospec Fuel Specialties)	50 ppm, 300 mg/m^3, 8 hr, TWA

Naphthalene:

PEL (OSHA)	10 ppm, 50 mg/m^3, 8 hr. TWA
TLV (ACGIH)	10 ppm, 52 mg/m^3, 8 hr TWA, Skin; A4 STEL 15 ppm, 79 mg/m^3, A4
AEL* (Innospec Fuel Specialties)	None established

The "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposure should be considered.

* AEL is Innospec Fuel Specialties' acceptable exposure limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

9 Physical and Chemical Properties

Physical Data

Appearance..... Clear Amber
Form..... Liquid
Odor..... Aromatic
Specific Gravity..... 0.947 @ 60/60°F (16/16°C)
Density..... 7.89 lbs./gal. @ 60°F (16°C)
Solubility in water..... insoluble

10 Stability and Reactivity

Chemical Stability

Stable at normal temperatures and storage conditions.

Incompatibility

Incompatible with strong oxidizers.

Decomposition

Decomposes with heat. Hazardous decomposition products include oxides of carbon.

Polymerization

Will not occur.

11 Toxicological Information

Animal Data

Xylene (mixed isomers):
Inhalation 4 hour LC50..... 6,700 ppm in rats
Skin absorption LD50..... 4,320 mg/kg in rabbits
Oral ALD..... 4,500 mg/kg in rats

Ethylbenzene:
Inhalation 4 hour LC50..... >4,000 ppm in rats
Skin absorption LD50..... ~15,000 mg/kg in mice
Oral LD50..... >3,500 mg/kg in rats

Proprietary Polymer (read across data):
Oral LD50..... >2,000 mg/kg in rats
Dermal LD50..... >2,000 mg/kg in rabbits
Skin sensitization..... negative in guinea pigs

Heavy Aromatic Naphtha:
Inhalation 6 hour LC50..... >11.67 mg/L in rats
Skin Absorption LD50..... >3,160 mg/kg in rabbits
Oral LD50..... >5,000 mg/kg in rats

Naphthalene:
Inhalation 15 minute LC50: ..... >0.34 mg/L in rats
Skin Absorption LD50: ..... 10,000 mg/kg in rabbits
Oral LD50: ..... 1,780 mg/kg in rats

Dermal absorption of Xylene in animals causes narcosis. Toxic effects described in animals by inhalation include upper respiratory irritation; central nervous system effects; behavioral effects; decreased weight gain; hearing loss; and effects on the blood, liver, kidneys, heart, spleen, lungs and bone marrow. By ingestion, Xylene caused central nervous system effects; decreased body weight and liver effects. Tests of Xylene in animals demonstrate no carcinogenic activity. Xylene does not produce heritable genetic damage in animals or genetic damage in bacterial or mammalian cell cultures. Although abnormal sperm were observed after an interperitoneal injection in rats, Xylene did not produce reproductive effects. Developmental toxicity was observed in animals exposed to Xylene but only at concentrations that were maternally toxic.

Heavy Aromatic Naphtha is a severe skin irritant, and is an eye irritant, but is not a skin sensitizer in animals. Repeated inhalation exposures caused reduced growth rate, respiratory tract irritation, congestion in liver and spleen, changes in blood tests and equilibrium disturbances. No animal test reports are available to define carcinogenic, mutagenic, developmental or reproductive hazards.

12 Ecological Information

Proprietary Polymer (read across data):
LC50, 96 hours, >1,000 mg/L in fish (WAF)
EC50, 48 hours, >1,000 mg/L in Daphnia (WAF)
IC50, 72 hours, >1,000 mg/L in algae (WAF)
IC50, 3 hours, >1,000 mg/L (WAF)

Proprietary Polymer present at <5% (read across data):
Acute toxicity in fish >100 mg/L

Xylene:
96 hour LC50 fathead minnow: 27-42 mg/L

Heavy Aromatic Naphtha:
96 hour LC50, fathead minnows: 4.2 – 20.8 mg/L

13 Disposal Considerations

Waste Disposal
Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial and Local regulations. May be a RCRA hazardous waste due to the ignitability characteristics.

14 Shipping Information

DOT

Proper Shipping Name..... Xylene Solution
Hazard Class 3
I.D. No. (UN/NA) ..... UN 1307
Packing Group III
Special Information ..... Flash Point: 34°C
Marine Pollutant ..... No
DOT Label(s) ..... Flammable Liquid

IMO

Proper Shipping Name..... Xylene Solution
Hazard Class 3
I.D. No. (UN) 1307
Packing Group III
Special Information ..... Flash Point: 34°C
Marine Pollutant ..... No
IMO Label ..... Flammable Liquid

Reportable Quantity

Xylene ..... 100 lbs.
Ethylbenzene ..... 1000 lbs.

Shipping Containers

Steel Drums UN1A1/Y/100

15 US Federal Regulations

TSCA Inventory Status..... Reported / Included

Title III Hazard Classifications Sections 311, 312

Acute ..... Yes
Chronic ..... Yes
Fire ..... Yes
Reactivity ..... No
Pressure ..... No

16 Other Information

NPCA-HMIS Rating

Health..... 2* (Chronic Health Effects)
Flammability..... 3
Reactivity 0

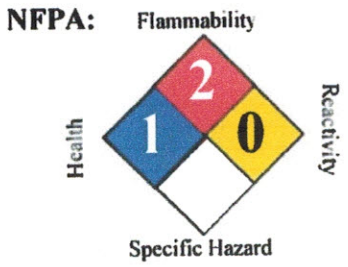
Personal Protection rating to be supplied by user depending on use conditions

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS:

Ann Marie Savini
Innospec Fuel Specialties
Newark, DE 19702
(800) 441-9547 or
(302) 451-1362

Safety Data Sheet
Jet Fuel



Hawaii Independent Energy

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Jet Fuel
Synonyms	:	Jet Fuel - A, B, A-I, A-50, High Sulfur, Military, Jet A & B Aviation Turbine Fuel, Jet A-I, Jet A; Avjet For Blending; Jet Q Turbine Fuel, Aviation Fuel; Turbine Fuel; JP-4; JP-5; JP-8, Av-Jet, Sweet Distillate, APPC463, RS203, 888100004452
SDS Number	:	888100004452 **Version** : 2.17
Product Use Description	:	Fuel
Company	:	For: Hawaii Independent Energy, LLC. 91-325 Komohana Street Kapolei, HI 96707
		Chemtrec (Emergency Contact) : (800) 424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classifications : Flammable Liquid – Category 3
Aspiration Hazard – Category 1
Skin Irritation – Category 2
Specific Target Organ Toxicity (Single Exposure) – Category 3
Chronic Aquatic Toxicity – Category 2

Pictograms

Signal Word : **Danger**

Hazard Statements : Flammable liquid and vapor.
May be fatal if swallowed and enters airways – do not siphon by mouth.
Causes skin irritation. Repeated or prolonged skin contact can cause skin irritation and dermatitis.
May cause drowsiness or dizziness by inhalation.
May cause irritation of respiratory system.
Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention	Keep away from heat, sparks, open flames, welding and hot surfaces. No smoking. Keep container tightly closed. Ground and/or bond container and receiving equipment. Use explosion-proof electrical equipment. Use only non-sparking tools if tools are used in flammable atmosphere. Take precautionary measures against static discharge. Wear gloves, eye protection and face protection as needed to prevent skin and eye contact with liquid. Wash hands or liquid-contacted skin thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe vapors or mists. Use only outdoors or in a well-ventilated area.
Response	In case of fire: Use dry chemical, CO2, water spray or fire fighting foam to extinguish. If swallowed: Immediately call a poison center, doctor, hospital emergency room, medical clinic or 911. Do NOT induce vomiting. Rinse mouth. If skin irritation persists, get medical attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. Get medical attention if you feel unwell.
Storage	Store in a well ventilated place. Keep cool. Store locked up. Keep container tightly closed . Use only approved containers.
Disposal	Dispose of contents/containers to approved disposal site in accordance with local, regional, national, and/or international regulations.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Weight %
Kerosene (petroleum)	8008-20-6	100%
Naphthalene	91-20-3	0 to 3%
Ethyl Benzene	100-41-4	0 to 1%
Trimethy Benzene	95-63-6	0 to 1%
Ethyl Benzene	100-41-4	0 to 1%

SECTION 4. FIRST AID MEASURES

Inhalation	:	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.
Skin contact	:	Take off all contaminated clothing immediately. Wash off immediately with soap and plenty of water. Wash contaminated clothing before re-use. If skin irritation persists, seek medical attention.
Eye contact	:	In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek medical attention

		immediately.
Ingestion	:	Do NOT induce vomiting. Do not give liquids. Seek medical attention immediately. If vomiting does occur naturally, keep head below the hips to reduce the risks of aspiration. Monitor for breathing difficulties. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.
Notes to physician	:	Symptoms Aspiration may cause pulmonary edema and pneumonitis. Treatment Do not induce vomiting, use gastric lavage only. Remove from further exposure and treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Carbon dioxide (CO2), Water spray, Dry chemical, Foam, Keep containers and surroundings cool with water spray., Do not use a solid water stream as it may scatter and spread fire., Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.
Specific hazards during fire fighting	:	Fire Hazard. Do not use a solid water stream as it may scatter and spread fire. Cool closed containers exposed to fire with water spray. Sealed containers may rupture when heated. Above the flash point, explosive vapor-air mixtures may be formed. Vapors can flow along surfaces to distant ignition source and flash back.
Special protective equipment for fire-fighters	:	Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing.
Further information	:	Exposure to decomposition products may be a hazard to health. Standard procedure for chemical fires.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	ACTIVATE FACILITY'S SPILL CONTINGENCY OR EMERGENCY RESPONSE PLAN if applicable. Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to contain spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.
Environmental precautions	:	Carefully contain and stop the source of the spill, if safe to do so. Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection.
Methods for cleaning up	:	Take up with sand or oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal - caution, flammable vapors may accumulate in closed containers. Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling	:	Keep away from fire, sparks and heated surfaces. No smoking near areas where

material is stored or handled. The product should only be stored and handled in areas with intrinsically safe electrical classification.

: Hydrocarbon liquids including this product can act as a non-conductive flammable liquid (or static accumulators), and may form ignitable vapor-air mixtures in storage tanks or other containers. Precautions to prevent static-initated fire or explosion during transfer, storage or handling, include but are not limited to these examples:

(1) Ground and bond containers during product transfers. Grounding and bonding may not be adequate protection to prevent ignition or explosion of hydrocarbon liquids and vapors that are static accumulators.

(2) Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil or diesel) is loaded into tanks previously containing low flash point products (such gasoline or naphtha).

(3) Storage tank level floats must be effectively bonded.

For more information on precautions to prevent static-initated fire or explosion, see NFPA 77, Recommended Practice on Static Electricity (2007), and API Recommended Practice 2003, Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents (2008).

Conditions for safe storage, including incompatibilities : Keep away from flame, sparks, excessive temperatures and open flame. Use approved containers. Keep containers closed and clearly labeled. Empty or partially full product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose containers to sources of ignition. Store in a well-ventilated area. The storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".

: Keep away from food, drink and animal feed. Incompatible with oxidizing agents. Incompatible with acids.

: Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

List	Components	CAS-No.	Type:	Value
OSHA Z1	Naphthalene	91-20-3	PEL	10 ppm 50 mg/m3
	Ethyl Benzene	100-41-4	PEL	100 ppm 435 mg/m3
ACGIH	Naphthalene	91-20-3	TWA	10 ppm
		91-20-3	STEL	15 ppm
	Kerosene (petroleum)	8008-20-6	TWA	200 mg/m3
	Ethyl Benzene	100-41-4	TWA	100 ppm 434 mg/m3
			STEL	125 ppm 543 mg/m3

Protective measures : Keep out of reach of children.

Engineering measures : Use only intrinsically safe electrical equipment approved for use in classified areas. Emergency eye wash capability should be available in the vicinity of any potential

		splash exposure.
Eye protection	:	Goggles and face shield as needed to prevent eye and face contact.
Hand protection	:	Gloves constructed of nitrile, neoprene, or PVC are recommended.
Skin and body protection	:	Chemical protective clothing such as DuPont TyChem ®, Barricade or equivalent, recommended based on degree of exposure. Consult manufacturer specifications for further information.
Respiratory protection	:	NIOSH/MSHA approved positive-pressure self-contained breathing apparatus (SCBA) or Type C positive-pressure supplied air with escape bottle must be used for gas concentrations above occupational exposure limits, for potential of uncontrolled release, if exposure levels are not known, or in an oxygen-deficient atmosphere.
Work / Hygiene practices	:	Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a cleaning solvent on the skin. Do not use solvents or harsh abrasive skin cleaners for washing this product from exposed skin areas. Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Clear to straw colored liquid
Odor		Characteristic petroleum or kerosene-like odor
Odor threshold		0.1 - 1 ppm typically reported
pH		Not applicable
Melting point/freezing point		Gel point can be about -15°F; freezing requires laboratory conditions
Initial boiling point & range		154 - 372 °C (310° - 702 °F)
Flash point		38°C (100°F) Minimum
Evaporation rate		Higher initially and declining as lighter components evaporate
Flammability (solid, gas)		Flammable vapor released by liquid
Upper explosive limit		5.0 %(V)
Lower explosive limit		0.7 %(V)
Vapor pressure		< 2 mm Hg at 20 °C
Vapor density (air = 1)		> 4.5
Relative density (water = 1)		0.8 g/mL
Solubility (in water)		0.0005 g/100 mL
		3.3 to 6 as log Pow

Partition coefficient (n-octanol/water)	
Auto-ignition temperature	210 °C (410°F)
Decomposition temperature	Will evaporate or boil and possibly ignite before decomposition occurs.
Kinematic viscosity	1.6 mm²/s at 40°C
Conductivity (conductivity can be reduced by environmental factors such as a decrease in temperature	Diesel Fuel Oils at terminal load rack: At least 25 pS/m Ultra Low Sulfur Diesel (ULSD) without conductivity additive: 0 pS/m to 5 pS/m ULSD at terminal load rack with conductivity additive: At least 50 pS/m JP-8 at terminal load rack: 150 pS/m to 600 pS/m

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Vapors may form explosive mixture with air. Hazardous polymerization does not occur.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	Can react with strong oxidizing agents, peroxides, acids and alkalies.
Conditions to avoid	: Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources. Avoid static charge accumulation and discharge (see Section 7).
Hazardous decomposition products	: Ignition and burning can release carbon monoxide, carbon dioxide, non-combusted hydrocarbons (smoke) and, depending on formulation, trace amounts of sulfur dioxide. Diesel exhaust particals may be a lung hazard (see Section 11).

SECTION 11. TOXICOLOGICAL INFORMATION

Skin irritation	: Irritating to skin. Repeated or prolonged contact can cause dryness, cracking and dermatitis. Liquid may be absorbed through skin in toxic amounts if large areas of the skin are repeatedly exposed.
Eye irritation	: May cause eye irritation.
Inhalation	Inhalation of vapors or mist may result in respiratory tract irritation and central nervous system effects including headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure and death.
Chronic Exposure	Similar products produced skin cancer and systemic toxicity in laboratory animals following repeated applications. The significance of these results to human exposure has not been determined.
Further information	: Kerosene does not have a measurable effect on human reproduction or development. Kerosene is not listed as carcinogenic by NTP, OSHA, and ACGIH. IARC has listed kerosene as a probable human carcinogen. Some petroleum distillates have been found to cause adverse reproductive effects in laboratory animals. Acute and chronic exposure to kerosene may result in CNS effects including irritability, restlessness, ataxia, drowsiness, convulsions, coma and death. The most common health effect associated with chronic kerosene exposure is dermatitis.

Component:

Kerosene (petroleum)	8008-20-6	Acute oral toxicity: LD50 rat 4 hour Dose: >5,000 mg/kg Acute dermal toxicity: LD50 rabbit Dose: >2,001 mg/kg Acute inhalation toxicity: LC50 rat Dose: >5,000 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Skin irritation
Naphthalene	91-20-3	Acute oral toxicity: LD50 rat Dose: 2,001 mg/kg Acute dermal toxicity: LD50 rat Dose: 2,501 mg/kg Acute inhalation toxicity: LC50 rat Dose: 101 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Mild skin irritation Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation Carcinogenicity: N11.00422130

Carcinogenicity

NTP	Naphthalene (CAS-No.: 91-20-3)
IARC	Kerosene is not listed as carcinogenic by NTP, OSHA, and ACGIH. IARC has listed kerosene as a probable human carcinogen. naphthalene (CAS-No.: 91-20-3) Kerosene (petroleum) (CAS-No.: 8008-20-6)
CA Prop 65	WARNING! This product contains a chemical known to the State of California to cause cancer. Naphthalene (CAS-No.: 91-20-3)

SECTION 12. ECOLOGICAL INFORMATION

Additional ecological information : Release of this product should be prevented from contaminating soil and water and from entering drainage and sewer systems. U.S.A. regulations require reporting spills of this material that could reach any surface waters. The toll free number for the U.S. Coast Guard National Response Center is (800) 424-8802. Naphthalene (91-20-3) one of the ingredients in this mixture is classified as a Marine Pollutant.

Component:

Naphthalene	91-20-3	Toxicity to algae: EC50 Species: Dose: 33 mg/l Exposure time: 24 h

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal : Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility.
Processing, use or contamination of this product may change the waste management options.
State and local disposal regulations may differ from federal disposal regulations.
Dispose of container and unused contents in accordance with federal, state and local requirements.

SECTION 14. TRANSPORT INFORMATION

CFR

Proper shipping name	: Fuel, aviation, turbine engine
UN-No.	: 1863
Class	: 3
Packing group	: III

TDG

Proper shipping name	: Fuel, aviation, turbine engine
UN-No.	: UN1863
Class	: 3
Packing group	: III

IATA Cargo Transport

UN UN-No.	: UN1863
Description of the goods	: Fuel, aviation, turbine engine
Class	: 3
Packaging group	: III
ICAO-Labels	: 3
Packing instruction (cargo aircraft)	: 366
Packing instruction (cargo aircraft)	: Y344

IATA Passenger Transport

UN UN-No.	: UN1863
Description of the goods	: Fuel, aviation, turbine engine
Class	: 3
Packaging group	: III
ICAO-Labels	: 3
Packing instruction (passenger aircraft)	: 355
Packing instruction (passenger aircraft)	: Y344

IMDG-Code

UN-No.	: UN 1863
Description of the goods	: Fuel, aviation, turbine engine
Class	: 3
Packaging group	: III
IMDG-Labels	: 3
EmS Number	: F-E S-E
Marine pollutant	: Yes

SECTION 15. REGULATORY INFORMATION

TSCA Status	:	On TSCA Inventory
DSL Status	:	All components of this product are on the Canadian DSL list.
SARA 311/312 Hazards	:	Acute Health Hazard Chronic Health Hazard Fire Hazard

CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIROMENT)
The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts crude oil. Fractions of crude oil, and products (both finished and intermediate) from the crude oil refining process and any indigenous components of such from the CERCLA Section 103 reporting requirements. However, other federal reporting requirements, including SARA Section 304, as well as the Clean Water Act may still apply.

California Prop. 65	:	WARNING! This product contains a chemical known to the State of California to cause cancer.
		Naphthalene 91-20-3

SECTION 16. OTHER INFORMATION

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision Date : 06/22/2013

40, 41, 42, 43, 139, 141, 263, 1117, 1333, 1450, 1640

MATERIAL SAFETY DATA SHEET

For Chemicals, Coatings and related materials
"Essentially similar" to form OSHA-20

REVISED 1/10/06

2245 - 0008470

MANUFACTURER

NAME: UNITED COLOR MANUFACTURING, INC.
ADDRESS: 660 Newtown-Yardley Road
Newtown PA 18940

EMERGENCY TELEPHONE NUMBERS:
MEDICAL OR CHEMTREC (24 HRS)
TRANSPORTATION: (800)424-9300
INFORMATION: (215)860-2165

SECTION I - PRODUCT INFORMATION

PRODUCT NAME: UNISOL® Liquid Red B
DESCRIPTION: Red Dye Concentrate
CLASS: Liquid

HMIS HAZARD CODES
Health: 2 (Moderate)
Flammability: 3 (Serious)
Reactivity: 0 (Minimal)
Personal Protective Equipment: B

SECTION IIA - HAZARDOUS INGREDIENTS

INGREDIENT MATERIAL DESCRIPTION	PERCENT* BY WEIGHT	C.A.S. REGISTRY NO.	VAPOR PRESSURE LEL	mmHg @ 68 F
**Dimethylbenzenes	27.0	1330-20-7	N/A	5.1
**Ethylbenzenes	5.0	100-41-4	N/A	N/A

* These figures are typical properties, they do not constitute a specification.
**Spillages of dye containing these materials may be notifiable under SARA Title 3, Section 313. For details, see SECTION IX of this MSDS.

SECTION IIB - NON HAZARDOUS INGREDIENTS

INGREDIENT MATERIAL DESCRIPTION	PERCENT* BY WEIGHT	C.A.S. REGISTRY NO.	VAPOR PRESSURE LEL	mmHg @ 68 F
C.I. Solvent Red 164**	68.0	See Below	N/A	N/A

* These figures are typical properties, they do not constitute a specification.
** 2-Naphthalenol (Phenylazo) Phenyl Azo Alkyl Derivatives. TSCA Accession #35371.

SECTION III - PHYSICAL DATA

BOILING RANGE: 279-302 F
VAPOR PRESSURE: 5.1mm @ 68 F
SPECIFIC GRAVITY: 1.0
FREEZING POINT: < -20 F
VAPOR DENSITY: Heavier than air
H_2O SOLUBILITY: Insoluble
EVAPORATION RATE: Slower (relative to n-butyl acetate) % VOLATILE BY VOLUME: 32
N-OCTANOL/WATER PARTITION COEFFICIENT: Log P_{OW} expected to be greater than 4
APPEARANCE AND ODOR: Dark Red Aromatic Liquid

SECTION IV - FIRE AND EXPLOSION DATA

FLASH POINT: >83.0 F
METHOD USED: TAG

EXPLOSIVE LIMITS:

LEL	UEL(% V IN AIR)
1.0%	6.6%

FLAMMABILITY CLASSIFICATION:
OSHA: Flammable liquid-Class 1B
DOT: Flammable liquid

EXTINGUISHING MEDIA:
Alcohol Foam, Carbon Dioxide(CO2), Dry Chemical. Water Spray: May be used for controlling fumes, protecting exposed material or on overheated containers. Be sure water does not spread fire.

SPECIAL FIRE FIGHTING PROCEDURES:
Wear NIOSH-MSHA approved self-contained breathing apparatus. Wear impervious clothing. Use water spray to cool and protect exposed material or overheated containers. Take care not to spread fire with water.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
Solvent vapors are an explosion hazard. Keep material away from all sources of ignition: extreme heat, open flame and any situation which may produce static or electric discharge, sparks or sparks resulting from frictional contact. Closed containers may explode from vapor pressure increases when exposed to extreme heat. Cool overheated containers with water spray, but do not spread the fire with cooling water. Vapors may travel great distances and ignite and flashback to source. See Section VIII for possible hazardous decomposition materials.

SECTION V - TOXICOLOGICAL INFORMATION

DEFINITIONS:
N/A - Not Available and/or Not Applicable
Tag - Tag Closed Cup (TCC)
PEL - Units of mg/cubic meter
(*) - SARA Section 313 listed. IF CHEMICAL SYMBOL * IN () MATERIAL IS A COMPOUND. Example: (*Cu) - report as copper compound.

SECTION V - TOXICOLOGICAL INFORMATION Cont...

NOTE: Please refer to the end of Section IX for Regulatory Information pertaining to the determination for the listing of ingredients, CAS numbers, percentages and other information.

INGREDIENT MATERIAL DESCRIPTION	TLV (twa) PEL	TLV (twa) mg/m³	LD50 (g/kg) (rat) ORAL	LD50 (g/kg) (rabbit) DERMAL	LC50 (ppm) (rat) INHAL.
Colorant	N/A	N/A	N/A	N/A	N/A
Dimethylbenzenes (Xylene)*	100	100	4.3	3.16	5,000
Ethylbenzenes*	N/A	N/A	N/A	N/A	N/A

SECTION VI - HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE:

PRIMARY ROUTE(S) OF EXPOSURE/ENTRY: Eye contact, skin contact, inhalation, ingestion.

EYES	Vapors may irritate the eyes. Liquid is irritating and potentially damaging to the eyes.
SKIN	Liquid may irritate and dry the skin. Prolonged contact may lead to burns and blisters and may aggravate dermatitis.
INHALATION	Vapors may irritate the respiratory tract. May lead to headache, dizziness, nausea, vomiting and unconsciousness. High vapor concentrations are anesthetic and may have other central nervous system effects including death.
INGESTION	May lead to headache, dizziness, nausea and abdominal pain.

ECOLOGICAL INFORMATION Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products.

MOBILITY	Liquid under most environmental conditions. Floats on water. If it enters soil, it will absorb to soil particles and will not be mobile.
DEGRADABILITY	Not established
BIOACCUMULATION	Has the potential to bioaccumulate
ECOTOXICITY	Not established. Insoluble in water.

SECTION VII - EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT: Immediately flush with large amounts of water for 10-15 minutes. SEEK PROMPT MEDICAL ATTENTION !!!

SKIN CONTACT: Promptly remove all contaminated clothing, shower if necessary. Remove from skin with proprietary water less hand cleaner or cold cream. Discard contaminated clothing and shoes.

INHALATION: If dizzy, drowsy or overcome, remove to fresh air. If breathing has stopped, apply artificial respiration. GET MEDICAL ATTENTION AS SOON AS POSSIBLE !!!

INGESTION: DO NOT INDUCE VOMITING!! GET MEDICAL ATTENTION IMMEDIATELY!!

SECTION VIII - REACTIVITY DATA

STABILITY:	Stable
CONDITIONS TO AVOID:	Extreme heat, open flames or sparks
INCOMPATIBILITY (MATERIALS TO AVOID):	Strong oxidizing agents, strong reducing agents, Acids
HAZARDOUS DECOMPOSITION PRODUCTS:	Oxides of Carbon, Oxides of Nitrogen
HAZARDOUS POLYMERIZATION:	Will not occur
POLYMERIZATION CONDITIONS TO AVOID:	Material not known to polymerize

SECTION IX - REGULATORY INFORMATION

This MSDS is in compliance with the OSHA Hazard Communication Standard 29CFR1910.1200.

This MSDS has also been prepared to be in compliance with the Commonwealth of Pennsylvania's Right-to-Know regulations for chemical manufacturers and should satisfy many other state Right-to-Know laws.

The chemical ingredient reporting rules for Pennsylvania are more detailed than OSHA regulations and this MSDS lists the common chemical name and CAS number in Section II for:

Specifically hazardous ingredient	>0.01%	(OSHA is >0.1%)
Hazardous ingredient	>1.0%	(OSHA is the same)
Nonhazardous ingredient	>3.0%	(OSHA does not regulate)

SECTION IX - REGULATORY INFORMATION Cont...

PROPRIETARY entered in the CAS number column declares that the exact identity of the ingredient(s) listed is proprietary information to United Color Manufacturing, Inc. and/or to our suppliers. Percentages of ingredients are approximate values for the purpose of hazard and SARA determination by the product's uses and are not necessarily exact specifications.

TSCA INVENTORY STATUS: All ingredients in this product appear on the TSCA inventory.
EC CLASSIFICATION: Classified as flammable liquid under EC criteria as per DOT Regulations in SECTION IV.
EINECS: All components in compliance.
DEPARTMENT OF TRANSPORTATION (DOT):

DOT Shipping Description:
Xylenes Solution
Hazard Class 3, (3.3 for sea shipments), UN1307, III

DSL: All Components registered. Under WHMIS: Class B, Division 2 – Flammable Liquid
CERCLA: If this product is accidentally spilled, the incident maybe subject to the provisions of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and must be reported to the National Response Center by calling 800-424-8802. This product contains Xylenes.

SARA TITLE III: Under the provisions of Title III, Sections 311/312 of the Superfund Amendments and Reauthorization Act, this product is classified into the following hazard categories: Delayed Health. This information may be subject to the provisions of the Community Right-To-Know Reporting Requirements (40 CFR 370) if threshold quantity criteria are met. This product contains the following Section 313 Reportable Ingredients:

Component	CAS NO.	Maximum %	Threshold Spillage (LBS)
Xylene & Ethylbenzenes	1330-20-7	34.0	294

SECTION X - SPILL OR LEAK PROCEDURES

STEPS FOR MATERIAL SPILLAGE: Remove all sources of ignition (flame, hot surfaces and any producers of electrical, static or frictional sparks). Wear appropriate protective clothing (See Section XI). Ventilate area and try to contain spill by diking with sand or other absorbent material. Collect spill for disposal be scooping up liquids (if a large spill) and absorbing with sand or other approved absorbent materials and dispose of in accordance with local, state and federal regulations.

WASTE DISPOSAL METHODS: Dispose of in accordance with local, state and federal regulations.

SECTION XI - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION:	OSHA/NIOSH approved self-contained breathing apparatus or vapor cartridge respirator. (Must be worn if PEL & TLV levels are exceeded)
VENTILATION:	Provide adequate cross air ventilation to keep dust and/or vapor levels below the PEL & TLV values. (See: Section V)
PROTECTIVE GLOVES:	Impervious gloves (rubber or neoprene) to avoid direct skin contact.
EYE PROTECTION:	Splash proof safety goggles

OTHER PROTECTIVE EQUIPMENT: Eyewash station, emergency shower.

SECTION XII - SPECIAL PRECAUTIONS

HANDLING AND SPECIAL PRECAUTIONS:

Overheating may cause container to rupture. Use explosion-proof electrical equipment Container must be kept closed and ventilation provided to prevent vapor concentration buildup. Store in a cool, dry place. Do not breathe vapor of get liquid in eyes or on skin or clothing. Keep away from heat or sources of ignition.

OTHER PRECAUTIONS:

Check all containers for leaks. Wear protective clothing as in Section XI. Avoid prolonged breathing of vapors of contact with skin. Ensure that all equipment is grounded to prevent static discharge. Containers of this material may be hazardous when emptied due to solid or vapor residue. All hazard precautions given in this data sheet must be observed for empty containers.

SECTION XIII - CONTACT INFORMATION

TECHNICAL CONTACT PERSON:	Dr. Michael P. Hinton
TECHNICAL CONTACT NUMBER:	Telephone 215-860-2165 Fax 215-860-8560

APPENDIX B

Department of Transportation Harbors Division Lease

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION

LEASE NO. H-87-29

NAWILIWILI HARBOR, KAUAI, HAWAII

KAUAI PETROLEUM CO., LTD.

STATE OF HAWAII

HARBOR LEASE NO. H-87-29

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION

LEASE NO. H-87-29

THIS INDENTURE OF LEASE, made this 1st day of January, 1988, by and between the STATE OF HAWAII, by its Director of Transportation, hereinafter called the "LESSOR," and KAUAI PETROLEUM CO., LTD. whose business and post office address is P. O. Box 1128 Lihue, Hawaii 96766, hereinafter called the "LESSEE,"

WITNESSETH:

1. AREA LEASED. THAT THE LESSOR, for and in consideration of the rent to be paid and of the terms, covenants and conditions herein contained, all on the part of the LESSEE to be kept, observed and performed, does hereby demise and lease unto the LESSEE and the LESSEE does hereby lease and hire from the LESSOR, that certain parcel of land, together with a nonexclusive subsurface pipeline easement appurtenant thereto, situated at Nawiliwili Harbor, Island of Kauai, Hawaii, which parcel and easement are hereinafter called the "demised premises," and more particularly described in Exhibit "A" and as shown and delineated in red on the map designated Exhibit "B," both of which are attached hereto and made parts hereof.

2. USE OF PREMISES. TO HAVE AND TO HOLD the premises solely for the storage and distribution of petroleum products. No retailing operations of any type shall be permitted, except upon the written approval of the LESSOR.

3. DEFINITIONS. As used herein, unless specifically indicated otherwise or clearly repugnant to the context:

(1) "Director" shall mean the Director of Transportation of the State of Hawaii or his successor;

(2) "Lessee" shall mean and include the LESSEE herein, and the heirs, executors, administrators, successors or permitted assigns of the LESSEE, according to the context hereof;

(3) "Holder of record of a security interest" is a person who is the owner or possessor of a security interest in the premises and who has filed with the Department of Transportation and with the Bureau of Conveyances of the State of Hawaii a copy of such interest;

(4) "Premises" shall be deemed to include the land and the nonexclusive subsurface pipeline easement hereby demised, together with all buildings and improvements excluding machinery and equipment now or hereinafter constructed and installed thereon;

(5) The use of any gender shall include all genders, and all words used in the singular shall extend to and include the plural and words used in the plural shall extend to and include the singular as the context requires;

(6) The marginal headings throughout this lease are for the convenience of the LESSOR and the LESSEE and are not intended to construe the intent or meaning of any of the provisions thereof.

4. LEASE TERM. The term of this lease shall be for a period of thirty-five (35) years commencing on the date of execution of this document, unless sooner terminated as hereinafter provided.

5. RENTALS AND CHARGES. $59,359.00/yr

(1) Land Rental and Existing Improvements. For the first fifteen (15) years, the annual rental shall be the sum of FIFTY-NINE THOUSAND THREE HUNDRED FIFTY-NINE AND NO/100 DOLLARS ($59,359.00); plus

(2) Pipeline Easement Rental. For the subsurface pipeline easement, the LESSEE shall pay to the LESSOR the sum of SIX HUNDRED FORTY-TWO AND NO/100 DOLLARS ($642.00) per annum as base rental for the first fifteen (15) years.

(3) Additional Annual Rental. The following schedule shall be used to calculate additional annual rentals to the base rental for the easement where LESSEE installs or uses more than twelve inches (12") of pipe, measured in inches of interior diameter.

SCHEDULE OF ADDITIONAL ANNUAL RENTALS

QUANTITY OF PIPE, MEASURED IN INCHES OF INTERIOR DIAMETER	ADDITIONAL RENTAL
Over 12 but not more than 24	1/2 of base rental
" 24 " " " " 36	1/4 " " "
" 36 " " " " 48	1/8 " " "
" 48 " " " " 60	1/16 " " "
" 60 " " " " 72	1/16 " " "

The additional rental charge shall be cumulative and shall, in each instance, commence on the date plans and specifications for the installation are approved.

(4) Wharfage and Other Fees and Charges. In addition to the above rentals, the LESSOR may assess wharfage charges on petroleum products pumped or passed through the pipelines installed by the LESSEE under this lease pursuant to Section 19-44-68 of the Hawaii Administrative Rules and Commercial Harbors and Tariff of the Harbors Division, Department of Transportation, State of Hawaii, as such section and said tariff may hereafter be amended from time to time. Moreover, this paragraph shall not be construed as a waiver of the LESSOR'S right to assess dockage fees and demurrage charges in accordance with said Hawaii Administrative Rules and Commercial Harbors and Tariff and any successor Rules and Regulations.

(5) Reopening. The land rental for the two ensuing ten-year periods shall be the fair market rental based upon all legal uses and not limited to the existing uses at the time of the reopening. At the time of reopening, the fair market rental shall be determined by an appraiser whose services shall be contracted by the LESSOR; provided, that should the LESSEE fail to agree upon the fair market rental as determined by the LESSOR'S appraiser, the LESSEE shall within fifteen (15) days after receipt of the new fair market rental, appoint its own appraiser who shall prepare an appraisal report within sixty (60) days of written notice by the LESSEE, and the two appraisers shall then exchange their reports for review. The two appraisers shall make every effort to resolve whatever differences they may have. However, should differences still exist fifteen (15) days after the exchange, the appraisers shall then appoint a third appraiser who shall also prepare an appraisal report within forty-five (45) days of written notice and furnish copies thereof to the first two appraisers. After review, all three shall meet to determine the fair market rental in issue within ten (10) days. The fair market rental as determined by a majority of the appraisers shall be final and binding upon both LESSOR and LESSEE. The LESSEE shall pay for its own appraiser and the cost of the services of the third appraiser shall be borne equally by the LESSOR and the LESSEE. All appraisal reports shall become part of the public record of the LESSOR.

In determining the fair market rental, the appraiser shall consider the fair market rental based upon all legal uses and is not limited to the permitted uses of the leased premises as set forth herein. The value of LESSEE'S improvements constructed after the commencement date of this lease shall not be considered in determining the said rental rate. However, all improvements existing prior to commencement shall be included in the determination of the fair market rental.

If the rental for the ensuing period has not been determined prior to the expiration of the preceding rental period, the LESSEE shall pay rent for the interim period at a rate determined by the LESSOR, but in no event more than the rental determined by the LESSOR'S appraiser. After the new fair market rental has been determined, the LESSOR shall credit the LESSEE for overpayment, if any, during the interim period.

6. TIME AND METHOD OF PAYMENT. The LESSEE shall pay to the LESSOR at the Harbors Division Kauai District Office, Nawiliwili Harbor, P. O. Box 946, Lihue, Kauai, Hawaii 96766, a net annual rental as provided hereinabove, payable in advance in quarterly installments; the first payment being due upon the completion of the improvements required herein or upon commencement of operations, whichever is earlier, but in any event not later than one year from the commencement of this lease and all subsequent payments being due on the first day of January, April, July and October of each and every year during said term. The rental for the first and last quarters shall be prorated in relation to the days within the quarter.

7. SERVICE CHARGE. Without prejudice to any other remedy available to the LESSOR, a service charge of one (1) percent per month shall be assessed against the LESSEE for any rentals and other payments not paid when due and such sum shall continue to be assessed against the LESSEE until the principal sum and the service charges are paid in full.

8. MINERALS AND WATERS. The LESSOR reserves the right to (1) all minerals as hereinafter defined, in, on or under the premises and the right, on its own behalf or through persons authorized by it, to prospect for, mine and remove such minerals and to occupy and use so much of the surface of the ground as may be required for all purposes reasonably extending to the mining and removal of such minerals by any means whatsoever, including strip mining. "Minerals," as used herein shall mean any or all oil, gas, coal, phosphate, sodium, sulfur, iron, titanium, gold, silver, bauxite, bauxitic clay, diaspore, boehmite, laterite, gibbsite, alumina, all ores of aluminum and, without limitation thereon, all other mineral substances and ore deposits, whether solid, gaseous or liquid, including all geothermal resources, in, on or under the land; provided, that "minerals" shall not include sand, gravel, rock or other material suitable for use and when used in road construction in furtherance of the LESSEE'S permitted activities on the premises and not for sale to others; and (2) all surface and ground waters appurtenant to the land and the right on its own behalf or through persons authorized by it, to capture, divert or impound the same and to occupy and use so much of the premises as may be required in the exercise of this right reserved; provided that, as a condition precedent to the exercise by the LESSOR of the rights reserved in this paragraph just compensation shall be paid to the LESSEE for any of LESSEE'S improvements taken.

9. PREHISTORIC AND HISTORIC REMAINS. All prehistoric and historic remains found on the premises herein shall be and remain the property of the LESSOR and shall not be disturbed or removed by the LESSEE, its employees, agents or contractors, without the express approval of the Director of Transportation.

10. EASEMENTS. The LESSOR reserves the right to establish, or to sell or grant to others, easements required for maritime or utility purposes; provided that such easements shall not unreasonably interfere with the LESSEE'S use of the premises.

11. CONSTRUCTION OF IMPROVEMENTS; ENVIRONMENTAL IMPACT ASSESSMENT. The LESSEE shall, prior to constructing any improvements on the premises, and within thirty (30) days after the effective date hereof, submit an Environmental Impact Assessment to the Department of Transportation. Within thirty (30) days after the approval of the Environmental Impact Statement or Negative Declaration, whichever is necessary to comply with Chapter 343, Hawaii Revised Statutes and the Regulations of State of Hawaii's Environmental Quality Commission, the LESSEE will submit the completed building plans to the Harbors Division.

Prior to construction of additional improvements, the LESSEE, if applicable, must obtain Department of Health approval for disposal of sewage, County of Kauai approval for a shoreline management permit and for shoreline setback requirements and a building permit from the County of Kauai. The State of Hawaii does not warrant or guarantee that the County of Kauai will permit the construction of any additional improvements that may be required by the LESSOR. All costs associated with meeting the requirements of obtaining the building permit will be borne by the LESSEE. All site improvement costs and any additional expense necessary to bring utilities to the site shall be borne by the LESSEE. The responsibility of bringing utilities to the site, including the obtaining of easements therefor, shall be borne by the LESSEE. The LESSEE must also file and receive approval of a Conservation District Use Application, if necessary, with the Department of Land and Natural Resources.

Within five (5) months after the approval of the Environmental Impact Statement or Negative Declaration or commencement of the lease, whichever is later, the LESSEE will at its own cost and expense complete the construction or installation of improvements related to the purpose of this lease, all of which shall represent a total value of not less than SEVEN HUNDRED FIFTY THOUSAND AND NO/100 DOLLARS ($750,000.00). The LESSEE shall submit monthly progress reports reflecting the status of its compliance with the requirements of this paragraph.

The LESSEE shall notify the LESSOR and the users of the Pier 2 Transit Shed thirty (30) days prior to the construction and installation of pipelines through the shed and shall see to it that the operations and the use of the shed by the users are not disrupted during the construction and installation. Upon the completion of the said construction work, the LESSEE shall restore the concrete slab and replace any walls of the shed affected to the same condition that existed prior to the construction and installation of the pipelines within the pipeline easement at no cost to the LESSOR or to the users of the shed. Also, the LESSEE shall repair any damages incurred to any other portions of the shed by the aforesaid construction at no cost to the LESSOR or to the users of the shed.

During the term of this lease, no improvements, alterations or additions will be constructed on or under the premises unless the LESSEE first submits its plans and specifications to the LESSOR for its approval and approval is granted by the LESSOR in writing. The plans and specifications must be in full compliance with all statutes, ordinances, and rules and regulations applicable thereto. Except as otherwise provided in paragraphs 21 and 29 herein, the LESSEE shall retain title to any and all leasehold improvements, trade fixtures, furnishings, equipment and other personal property constructed, placed or installed by the LESSEE, at its own cost and expense, during the term of this lease.

12. IMPROVEMENT BOND. The LESSEE will, within sixty (60) days after receipt of an executed copy of this lease, procure and deposit with the LESSOR a surety bond in the amount of SEVEN HUNDRED FIFTY THOUSAND AND NO/100 DOLLARS ($750,000.00), which bond shall (1) name the State as obligee, (2) be conditioned upon the faithful observance and performance of the building requirement contained in paragraph 11 and (3) save and hold the LESSOR harmless from all liens, suits, actions or damages arising out of, caused by or attributable to such work performed pursuant to building requirement.

13. CONTRACTOR'S INSURANCE. Before commencing the construction or installation of any leasehold improvements, equipment or fixtures on the premises, the LESSEE shall require that all contractors and subcontractors employed on the premises by the LESSEE or the LESSEE'S contractor procure and maintain in full force and effect during the course of construction and installation the following insurance:

(1) Workmen's Compensation as required by law.

(2) Contractor's Comprehensive General Liability and Property Damage with a combined minimum single limit of $1,000,000.00 for bodily injury and property damage per occurrence.

(3) Contractor's Automobile General Liability and Protective Property with a combined minimum single limit of $300,000.00 for bodily injury and property damage per occurrence.

The policy or policies required under this provision shall name the LESSOR as an additional insured and the LESSEE shall furnish a copy or copies of the Certificate of Insurance to the LESSOR.

14. SIGNS. All exterior signs, installed or painted, advertising the business or activity conducted on the premises, shall be restricted to the appurtenant equipment or the improvements constructed by the LESSEE. All signs installed or painted shall be done in good aesthetic taste and shall strictly conform to the sign ordinance of the County of Kauai.

15. SANITATION; MAINTENANCE OF PREMISES. That the LESSEE at all times during the life of this lease shall (1) keep and maintain all portions of the premises and improvements thereon in good repair and in a strictly clean, neat, orderly and sanitary condition, free of waste, rubbish and debris and other refuse from the premises; (2) keep and maintain all fixtures, equipment and personal property of the LESSEE upon the premises in the same good condition and repair; and (3) generally, take the same good care of the premises that would be taken by a reasonably prudent owner who desires to keep and maintain the same so that at the expiration or sooner termination of the letting the premises will be in as good a condition as that which existed at the commencement of the lease term, ordinary wear and tear excepted.

16. UTILITIES. Water, electricity and telephone services are available at the harbor. As aforementioned, the LESSEE shall be responsible for providing additional utility services at the site. No sewer connection is currently available to the premises.

THE LESSOR COVENANTS AND AGREES WITH THE LESSEE that upon the payment of said rent at the times and in the manner aforesaid and the observance and performance of the covenants, terms and conditions hereof on the part of the LESSEE to be observed and performed, the LESSEE shall and may have, hold and enjoy the premises for the term hereby demised, without hindrance or interruption by the LESSOR or any other person or persons lawfully claiming by, through or under it.

THE LESSEE FURTHER COVENANTS AND AGREES WITH THE LESSOR AS FOLLOWS:

17. Payment of Rent. That the LESSEE shall pay said rent to the LESSOR at the time, in the manner and form aforesaid and at the place specified above, or at such other

place as the LESSOR may from time to time designate, in legal tender of the United States of America.

18. Taxes, Assessments, etc. That the LESSEE shall pay or cause to be paid, when due, the amount of all taxes, rates, assessments and other outgoings of every description as to which said premises or any part thereof, or any improvements thereon, or the LESSOR or LESSEE in respect thereof, are now or may hereafter be assessed or become liable by authority of law during the term of this lease; provided, however, that with respect to any assessment made under any betterment or improvement law which may be payable in installments, LESSEE shall be required to pay only such installments, together with interest, as shall become due and payable during said term.

19. Utility Services. That the LESSEE shall pay when due all charges, duties and rates of every description, including water, sewer, gas, refuse collection or any other charges, as to which said premises, or any part thereof, or any improvements thereon or the LESSOR or LESSEE in respect thereof may during said term become liable, whether assessed to or payable by the LESSOR or LESSEE.

20. Covenant Against Discrimination. That the use and enjoyment of the premises shall not be in support of any policy which discriminates against anyone based upon race, sex, color, religion or ancestry.

21. Sanitation, etc. That the LESSEE shall keep the premises and improvements in a strictly clean, sanitary and orderly condition.

22. Waste, and Unlawful, Improper or Offensive Use of Premises. That the LESSEE shall not commit, suffer or permit to be committed any waste, nuisance, strip or unlawful, improper or offensive use of the premises, or any part thereof.

23. Compliance with Laws. That the LESSEE shall comply with all of the requirements of all municipal, state and federal authorities and observe all municipal ordinances and state and federal statutes, pertaining to the said premises, now in force or which may hereinafter be in force.

24. Inspection of Premises. That the LESSEE will permit the LESSOR and its agents, at all reasonable times during the said term, to enter the premises and examine the state of repair and condition thereof.

25. Improvements. That the LESSEE shall not at any time during said term construct, place, maintain and install on the premises any building, structure or improvement of any kind and description whatsoever except with the prior approval of the Director and upon such condition as the Director may

impose, including any adjustment of rent, unless otherwise provided herein.

26. Repairs to Improvements. That the LESSEE shall, at its own expense, keep, repair and maintain all buildings, improvements and pipelines, including hatches, now existing or hereafter constructed or installed on the premises in good order, condition and repair, reasonable wear a.d tear excepted.

27. Liens. That the LESSEE will not commit or suffer any act or neglect whereby the premises or any improvement thereon or the estate of the LESSEE in the same shall become subject to any attachment, lien, charge or encumbrance whatsoever, except as hereinafter provided, and shall indemnify and hold harmless the LESSOR from and against all attachments, liens, charges and encumbrances and all expenses resulting therefrom.

28. Assignments, etc. That the LESSEE shall not transfer or assign this lease or any interest herein, except as may be permitted by and subject to the conditions contained in Section 171-36(5), Hawaii Revised Statutes.

29. Subletting. That the LESSEE shall not rent or sublet the whole or any portion of the premises, without the prior written approval of the Director and the Board of Land and Natural Resources, State of Hawaii, hereinafter called the "Board," pursuant to Sections 171-11 and 171-36(a)(6), Hawaii Revised Statutes. The Director shall have the right to deny uses contrary to the required or permitted uses on the premises. The Board shall have the right to review and approve the rent to be charged to the proposed sublessee and, if necessary, revise the rent and rent structure charged to the LESSEE by the LESSOR in light of the rental rate charged to the proposed sublessee by the LESSEE; provided, further, that the rent may not be revised downward.

30. Mortgage. That the LESSEE shall not mortgage, hypothecate or pledge the premises or any portion thereof or this lease or any interest herein except in accordance with and subject to the provisions of paragraph 28 hereof and any such mortgage, hypothecation or pledge without the prior written approval of the Director shall be null and void.

31. Indemnity. That the LESSEE will indemnify, defend and hold the LESSOR harmless (1) from and against any claim or demand by third persons for loss, liability or damage, including claims for property damage, personal injury or wrongful death, arising out of any accident on the premises and sidewalks and roadways adjacent thereto or occasioned by any act or nuisance made or suffered on the premises, or by any fire thereon or growing out of or caused by any failure on the part of the LESSEE to maintain the premises in a safe condition

and will reimburse the LESSOR for all costs and expenses in connection with the defense of such claims; and (2) from and against all actions, suits, damages and claims by whomsoever brought or made by reason of the nonobservance or nonperformance of any of the terms, covenants and conditions herein or the rules, regulations, ordinances and laws of the federal, state, municipal or county governments.

32. Costs of Litigation. That in case the LESSOR shall, without any fault on its part, be made a party to any litigation commenced by or against the LESSEE (other than condemnation proceedings), the LESSEE shall and will pay all costs and expenses incurred by or imposed on the LESSOR, furthermore, the LESSEE shall and will pay all costs and expenses which may be incurred or paid by the LESSOR in enforcing the covenants and agreements of this lease, in recovering possession of the premises or in the collection of delinquent rental, taxes and any and all other charges.

33. Liability Insurance. That the LESSEE shall procure, at its own cost and expense, and keep in force during the entire term of this lease, with an insurance company or companies acceptable to the LESSOR, a policy or policies of comprehensive general liability insurance in a combined single limit amount of not less than $1,000,000.00 for bodily injury and property damage per occurrence; that said policy or policies shall cover the premises, including all buildings, improvements and grounds and all roadways and sidewalks on or adjacent to the premises in the control of the LESSEE. The LESSEE shall furnish the LESSOR with a certificate showing such policy to be initially in force and shall furnish a like certificate upon each renewal of such policy, each such certificate to contain or be accompanied by an assurance of the insurer that the LESSOR shall be notified at least thirty (30) days prior to any termination or cancellation of, or material change in said policy. The procuring of this policy shall not release or relieve the LESSEE of its responsibility under this lease. The policy or policies required under this provision shall name the LESSOR as an additional insured.

The minimum limits of insurance recited herein may be increased by such amounts as the Director, in the exercise of sound and prudent judgment, may require. However, the minimum limits shall not be less than $1,000,000.00.

34. Performance Bond. That the LESSEE shall, at its own cost and expense, within thirty (30) days after the effective date of this lease, procure and deposit with the LESSOR and thereafter keep in full force and effect during the term of this lease a good and sufficient surety bond, conditioned upon the full and faithful observance and performance by said LESSEE of all of the terms, conditions and covenants of this lease, in an amount equal to one-fourth (1/4) of the annual rental payable. Said bond shall provide that in

case of a breach or default of any of the terms, covenants, conditions and agreements contained herein, the full amount of the bond shall be paid to the LESSOR as liquidated and ascertained damages and not as a penalty. Said bond shall be maintained by the LESSEE at its own cost and expense and shall cover the LESSEE'S operations during the term of the lease; provided, that suits thereon by the State or anyone else entitled to do so may be commenced within the period of limitation for contract claims unless otherwise specifically provided.

35. Lessor's Lien. That the LESSOR shall have a lien on all the buildings and improvements placed on the premises whether the same is exempt from execution or not and on the rents of all improvements and buildings situated on the premises for all such costs, attorney's fees, rent reserved, for all taxes and assessments paid by the LESSOR on behalf of the LESSEE and for the payment of all monies as provided in this lease to be paid by the LESSEE, and such lien shall continue until the amounts due are paid.

36. Fire Insurance. That the LESSEE will, at its own expense, at all times during the term of this lease, keep insured all buildings and improvements erected on the land hereby in the joint names of LESSOR, LESSEE and Mortgagee, if any, as their interests may appear, against loss or damage by fire including perils specified in the extended coverage endorsement and in an amount equal to the maximum insurable value thereof, in a company or companies approved by the LESSOR, and will pay the premiums thereon at the time and place the same are payable; that the policy or policies of insurance shall be made payable in case of loss to the LESSOR, LESSEE and Mortgagee, if any, as their interests may appear, and shall be deposited with the Mortgagee, if any, otherwise with the LESSOR; and that any proceeds derived therefrom in the event of total or partial loss shall be immediately available to, and as soon as reasonably possible, be used by the LESSEE for rebuilding, repairing, or otherwise reinstating the buildings in a good and substantial manner according to the plans and specifications approved in writing by the Director; provided, however, that with the approval of the LESSOR, the LESSEE may surrender this lease and pay the balance owing on any mortgage and the LESSEE shall then receive that portion of said proceeds which the unexpired term of this lease at the time of said loss or damage bears to the whole of said term, the LESSOR to retain the balance of said proceeds.

The LESSEE shall furnish to the LESSOR and Mortgagee, if any, a certificate showing such policy or policies to be initially in force and shall furnish a like certificate upon each renewal of such policy or policies, each such certificate to contain or be accompanied by an assurance of the insurer to notify the LESSOR and Mortgagee, if any, of any intention to cancel any such policy or policies, prior to actual cancellation.

37. Surrender. That the LESSEE shall and will at the expiration or sooner termination of this lease, peaceably and quietly surrender and deliver possession of the premises to the LESSOR, together with all improvements constructed thereon of whatever name or nature, in good order and condition, reasonable wear and tear excepted; provided, that trade fixtures, equipment and personal property may be removed by the LESSEE; and provided further, that within thirty (30) days after the termination or expiration of this lease, the LESSOR may, at its option and upon written notice to the LESSEE, require the LESSEE to remove all or any portion of any improvements constructed on the premises of whatever name or nature, and its equipment, fixtures, pipelines, trade or otherwise, and/or personal property all at LESSEE'S sole expense and cost.

The LESSEE shall remove all existing pipelines within the subsurface pipeline easement. Should the pipelines be allowed to remain in place via a written consent from the LESSOR, the pipelines shall be filled with cement slurry by the LESSEE at no cost to the LESSOR. However, all pipelines and hatches under the pier shall be removed up to the fast land which end shall be capped with a welded metal plate.

The LESSEE shall, in the removal of any of its improvements, equipment, trade fixtures and/or personal property from the premises, conduct such removal in such a manner as to cause no damage to the premises, and in the event of such damage, LESSEE shall, at its own cost and expense, repair or replace the same.

If the LESSEE fails or neglects, when so required by the LESSOR, to remove all or any portion of any improvements constructed on the premises of whatever name or nature, pipelines, equipment, fixtures, trade or otherwise, and/or personal property within thirty (30) days after receipt of written notice to so remove, the LESSOR may remove and dispose of the same and charge the cost of such removal and disposal to the LESSEE, which costs the LESSEE hereby agrees to pay.

38. Pipeline Easement - Inconvenience to the State, County, etc. That the LESSEE, while constructing, maintaining or using the pipeline easement, shall not unduly or unreasonably inconvenience the LESSOR, its licensees, permittees and other tenants in the use of the land crossed by or adjoining the pipeline easement.

39. Pipeline Easement - Repair and Restoration. The LESSEE shall promptly repair and restore, at its own expense, all damage to the paving or to the surface of the pipeline easement area or the lands adjacent to said easement area, which it may cause in the construction, maintenance, repair or replacement of pipelines, using materials of equal quantity and quality. It shall carefully backfill all excavations and

compact all backfills in accordance with LESSOR'S specifications. Upon completion of any work performed in the easement area, the LESSEE shall remove all equipment and unused materials therefrom and shall leave the easement area in a clean and presentable condition, satisfactory to the LESSOR.

40. Pipeline Easement - Relocation. Should the pipelines of the LESSEE interfere with any other proper use of the easement area, or in the event of a change in width, grade, location or elevation of the harbor roadways within which the easement area is located, the LESSEE shall accomplish any necessary temporary and/or permanent relocation of its facilities at its sole cost and expense. The LESSOR shall give to the LESSEE at least three (3) months' prior written notice of any requirement for such relocation and shall, to the extent possible, provide an alternate easement site to the LESSEE at the same rental rate. The determination by the LESSOR as to whether there is interference within the easement area shall be final.

41. Pipeline Easement - Surface Use. That the LESSOR may use for all purposes the whole or any portion of the land affected by the pipeline easement and may grant to others, rights and privileges for any and all purposes affecting said lands; provided that, the rights herein reserved shall not be exercised by the LESSOR or by any agent, representative or assigns of the LESSOR in such manner so as to interfere unreasonably with the LESSEE in its use of the easement.

42. Pipeline Easement - Abandonment. That if the LESSEE should fail or cease to use or abandon the pipeline easement for a continuous period of one (1) year, all rights and interests granted herein shall cease and terminate and shall be required to remove all pipelines constructed therein by the LESSEE. Should the pipelines be allowed to remain in place via a written consent by the LESSOR, the pipelines shall be filled with cement slurry by the LESSEE, at no cost to the LESSOR. However, all pipelines together with hatches under the pier shall be removed up to the fast land by the LESSEE which end shall be capped with a welded metal plate at no cost to the LESSOR.

43. Surrender for Public Purposes. That if at any time during the term of this lease, all or any portion of the premises is required for any public purpose, the LESSEE shall, upon written notice from the LESSOR given not less than three (3) months in advance, surrender all or such portion of the premises as may be required and remove therefrom all of its improvements, equipment, personal property and trade fixtures, at no cost to the LESSOR. The LESSEE shall not, by reason of its surrender, be entitled to any claim against the LESSOR for its leasehold interest, for any reduction in rent or for any of its costs of removal. If, however, an alternate location on

State property is available, the LESSOR, at its option, may, without rental adjustment, provide to the LESSEE the alternate location by appropriate amendment to this lease, and permit the LESSEE to relocate its improvements, equipment, personal property and trade fixtures thereon, at no cost to the LESSOR. If, however, the surrender of a portion of the premises renders the remainder unsuitable for the purposes of the LESSEE, and the LESSOR provides no alternate location, the LESSEE may surrender the remainder of the premises and be relieved of any further obligation hereunder except its obligation to remove from the premises all of its improvements, equipment, personal property and trade fixtures, within such reasonable period as may be allowed by the LESSOR. Upon failure of the LESSEE to so remove, the LESSOR may proceed in accordance with the last proviso of Paragraph 36.

44. Mortgage. That upon due application and with the written consent of the LESSOR, the LESSEE may mortgage this lease or any interest herein or create a security interest in the land hereby demised. If the mortgage or security interest is to a recognized lending institution, authorized to do business as a lending institution, in either the State of Hawaii or elsewhere in the United States, such consent may extend to foreclosure and sale of LESSEE'S interest at such foreclosure to any purchaser, including the mortgagee, without regard to whether or not the purchaser is qualified under Chapter 171, Hawaii Revised Statutes, to lease, own or otherwise acquire and hold the land or any interest therein. The interest of the mortgagee or holder shall be freely assignable. The term "holder" shall include an insurer or guarantor of the obligation or condition of such mortgage, including the Department of Housing and Urban Development through the Federal Housing Administration, the Federal National Mortgage Association, the Veterans Administration, the Small Business Administration, Farmers Home Administration, or any other Federal agency and their respective successors and assigns or any lending institution authorized to do business in the State of Hawaii or elsewhere in the United States; provided, that the consent to mortgage to a nongovernmental holder shall not confer any greater rights or powers in the holder than those which would be required by any of the aforementioned Federal agencies.

45. Breach. That time is of the essence of this lease and if the LESSEE shall fail to yield or pay such rent or any part thereof at the times and in the manner aforesaid, or shall become bankrupt, or shall abandon the premises, or if this lease and the premises shall be attached or otherwise be taken by operation of law, or if any assignment be made of the LESSEE'S property for the benefit of creditors, or if the LESSEE shall fail to observe and perform any of the covenants, terms and conditions herein contained and on its part to be observed and performed, and such failure shall continue for a period of more than sixty (60) days after delivery by the

LESSOR of a written notice of such breach or default by personal service, registered mail or certified mail to the LESSEE at its last known address and to each mortgagee or holder of record having a security interest in the premises; provided that where the breach involves a failure to make timely rental payments, the LESSEE shall cure the breach upon not less than five (5) business days after receipt of notice, then, the LESSOR may, subject to the provisions of Section 171-21, Hawaii Revised Statutes, at once reenter such premises or any part thereof, administratively and without the need for a court order and upon or without such entry, at its option, terminate this lease without prejudice to any other remedy or right of action for arrears of rent or for any preceding or other breach of contract; and in the event of such termination, all buildings and improvements thereon shall become the property of the LESSOR.

In the case of nonpayment of rent within the term of the lease, the LESSOR may reenter such premises and terminate the lease administratively without the need for a court order. In such event the LESSEE shall be liable for subsequently accruing rent during the term of the lease when the premises are not relet and for any deficiency resulting from a reletting of such premises plus expenses for the reletting.

In the event LESSEE discontinues using the premises for the uses and purposes enumerated herein and activities related thereto, without the consent of LESSOR from the date hereof, the LESSOR reserves the right to terminate this lease. The failure of the LESSEE to operate the facilities for the above-mentioned uses for a period of at least fifteen (15) consecutive days shall constitute discontinuance of use of the premises.

46. Right of Holder of Record of a Security Interest. In the event the LESSOR seeks to forfeit the privilege, interest or estate created by this lease, each recorded holder of a security interest may, at its option, cure or remedy the default or breach of rent payment within thirty (30) days or any other default or breach within sixty (60) days from the date of receipt of the notice hereinabove set forth, or within such additional period as the LESSOR may allow for good cause, and add the cost thereof to the mortgage debt and the lien of the mortgage. Upon failure of the holder to exercise its option, the LESSOR may: (a) pay to the holder from any monies at its disposal, including the special land and development fund, the amount of the mortgage debt, together with interest and penalties, and secure an assignment of said debt and mortgage from said holder or if ownership of such privilege, interest or estate shall have vested in such holder by way of foreclosure, or action in lieu thereof, the LESSOR shall be entitled to the conveyance of said privilege, interest or estate upon payment to said holder of the amount of the mortgage debt, including interest and penalties, and all

reasonable expenses incurred by the holder in connection with such foreclosure and preservation of its security interest, less appropriate credits, including income received from said interest or estate subsequent to such foreclosure; or (b) if the property cannot be reasonably reassigned without loss to the LESSOR, then terminate the outstanding privilege, interest or estate without prejudice to any other right or remedy for arrears of rent or for any preceding or other breach or default and thereupon use its best efforts to redispose of the land affected thereby to a qualified and responsible person free and clear of the mortgage and the debt thereby secured; provided, that a reasonable delay by the LESSOR in instituting or prosecuting any right or remedy it may have hereunder shall not operate as a waiver of such right or to deprive it of such remedy when it may still hope otherwise to resolve the problems created by the breach or default. The proceeds of any redisposition effected hereunder shall be applied, first, to reimburse the LESSOR for costs and expenses in connection with such redisposition, second, to discharge in full any unpaid purchase price or other indebtedness owing the LESSOR in connection with such privilege, interest or estate terminated, third, to the mortgagee to the extent of the value received by the LESSOR upon redisposition which exceeds the fair market lease value of the land as previously determined by the LESSOR'S appraiser; and fourth, to the owner of the privilege, interest or estate.

47. Condemnation. That in the event that at any time during said term the premises or any part thereof shall be required, taken or condemned for any public use, by any condemning authority, including the LESSOR, then and in every such case the estate and interest of the LESSEE in the property taken shall at once terminate, and all compensation payable or to be paid by reason of the taking of any land shall be payable to and be the sole property of the LESSOR, and the LESSEE shall not by reason of the taking be entitled to any claim against the LESSOR for compensation or indemnity for its leasehold interest; that such compensation as shall represent the value of any buildings or improvements erected or owned by the LESSEE upon the land shall be divided between the LESSOR and LESSEE in the ratios that the expired and unexpired portions of the term of this demise, respectively, shall bear to the whole term hereby created, and that in case only a part of the buildings or improvements constructed or owned by the LESSEE are taken, the LESSEE may claim and receive from the condemning authority but not from the LESSOR, any expense incurred by the LESSEE in repairing any damage thereto; provided that, in case a part of said premises shall be required, taken or condemned, the rent thereafter payable for the remainder of the term shall be reduced in the proportion that the area of land so taken shall bear to the area hereby demised; provided, further, that in case such condemnation and taking shall by mutual agreement of the parties hereto be held to render the remainder of the premises unfit for the purposes of the LESSEE, the LESSEE shall have the option to surrender this lease.

48. Right to Enter. The LESSOR and the agents and representatives of the county in which said premises are situated may enter and cross any portion of said land for the purpose of performing any public or official duties; provided, however, in the exercise of such duties, the rights of the LESSEE to the use and enjoyment of the premises shall not be unreasonably interfered with.

49. Inspection by Prospective Bidders. The LESSOR shall have the right to authorize any person or persons to enter upon and inspect the premises at all reasonable times following a published notice for the proposed disposition of the same for purposes of informing and apprising such person or persons of the condition of said lands preparatory to such proposed disposition; provided, however, that any such entry and inspection shall be conducted during reasonable hours after notice to enter is first given to the LESSEE, and shall, if the LESSEE so requires, be made in the company of the LESSEE or designated agents of the LESSEE; provided, further, that no such authorization shall be given more than one year before the expiration of the term of this lease.

50. Acceptance of Rent Not a Waiver. That the acceptance of rent by the LESSOR shall not be deemed a waiver of any breach by the LESSEE of any term, covenant or condition of this lease, nor of the LESSOR'S right of re-entry for breach of covenant, nor of the LESSOR'S right to declare and enforce a forfeiture for any such breach, and the failure of the LESSOR to insist upon strict performance of any such term, covenant or condition, or to exercise any option herein conferred, in any one or more instances, shall not be construed as a waiver or relinquishment of any such right for any subsequent breach of any term, covenant or condition.

51. Extension of Time. That notwithstanding any provision contained herein to the contrary, wherever applicable, the LESSOR may for good cause shown, allow additional time beyond the time or times specified herein to the LESSEE, in which to comply with, observe or perform any of the terms, conditions and covenants contained herein.

52. Justification of Sureties. That such bonds as may be required herein shall be supported by the obligation of a corporate surety organized for the purpose of being a surety and qualified to do business as such in the State of Hawaii, or by not less than two personal sureties, corporate or individual, for which justifications shall be filed as provided in Section 78-20, Hawaii Revised Statutes; provided, however, the LESSEE may furnish a bond in like amount, conditioned as aforesaid, executed by it alone as obligor, if, in lieu of any surety or sureties, it shall also furnish and at all times thereafter keep and maintain on deposit with the LESSOR security in certified checks, certificates of deposit (payable on demand or after such period as the LESSOR may stipulate),

bonds, stocks or other negotiable securities properly endorsed, or execute and deliver to said LESSOR a deed or deeds of trust of real property, all of such character as shall be satisfactory to said LESSOR and valued in the aggregate at not less than the principal amount of said bond. It is agreed that the value at which any securities may be accepted and at any time thereafter held by the LESSOR under the foregoing proviso shall be determined by the LESSOR, and that the LESSEE may, with the approval of the LESSOR, exchange other securities or money for any of the deposited securities if in the judgment of the LESSOR the substitute securities or money shall be at least equal in value to those withdrawn. It is further agreed that substitution of sureties or the substitution of a deposit of security for the obligation of a surety or sureties may be made by the LESSEE, but only upon the written consent of the LESSOR and that until such consent be granted, which shall be discretionary with the LESSOR, no surety shall be released or relieved from any obligation hereunder.

53. Waiver, Modification, Reimposition of Bond Provision. Upon substantial compliance by the LESSEE of the terms, covenants, and conditions herein contained on its part to be observed and performed, the LESSOR at its discretion may waive or suspend the performance bond and/or improvement bond requirements or modify the same by reducing the amount thereof; provided, however, that the LESSOR reserves the right to reactivate or reimpose said bond and/or bonds in and to their original tenor and form at any time throughout the term of this lease.

54. Force Majeure. THE LESSOR AND THE LESSEE COVENANT AND AGREE WITH EACH OTHER that neither party shall be deemed to be in default for the nonobservance or nonperformance of any covenant, obligation or undertaking required under this lease in the event that and as long as such observance or performance is prevented, delayed, or hindered by an act of God or public enemy, fire, earthquake, hurricane, floods, explosion, action of the elements, war or national defense preemptions, unavailability of material, strikes, lockouts, or action of the labor union or any other such causes which are not within the respective control of such party. In the event of any delay arising by reason of any of the foregoing events, the time for performance of such covenant, obligation, or undertaking as provided for in this lease shall be extended for a period equal to the number of days of such delay, and the respective parties shall commence such observance or performance of the covenant, obligation or undertaking so delayed immediately after removal of the delaying cause. THE LESSOR FURTHER AGREES that notwithstanding anything in this lease to the contrary, in the event that and as long as the premises or any portion thereof shall be unusable for the LESSEE'S purpose as herein provided by reason of damage or destruction by an act of God or public enemy, earthquake, hurricane, action of the elements, or war or national defense

preemptions, the rent payable hereunder by the LESSEE to the LESSOR during the period the LESSEE is unable to use the premises or any portion thereof shall be reduced in the proportion that the premise so rendered unusable shall bear to the area hereby demised; provided that, in case such damage or destruction shall be mutual agreement of the parties hereto to be held to render more than half of the premises unfit for the purposes of the LESSEE, the LESSEE shall have the option to surrender this lease and be relieved of any further obligations hereunder.

IN WITNESS WHEREOF, the STATE OF HAWAII, the LESSOR, and LESSEE herein have caused these presents to be executed this 1st day of January, 1988, both effective on day and year hereinabove set forth.

LESSOR: STATE OF HAWAII

By _____
Its Director of Transportation

LESSEE: KAUAI PETROLEUM CO., LTD.

By _____
Its President

By _____
Its

APPROVED AS TO FORM:

_____
Deputy Attorney General

APPROVED:

BOARD OF LAND AND NATURAL RESOURCES

By _____
Chairman and Member

By _____
Member

Approved by the Board at its meeting held on 8-22-86, J-1

EASEMENT "K-1"

LAND SITUATED AT NAWILIWILI, LIHUE, KAUAI, HAWAII

Being Portions of Governor's Executive Order 509
and Governor's Executive Order 2532

Beginning at a pipe at the Northeast corner of this parcel of land, on the South side of Parcel "C", being also on the Northerly side of Waapa Road, the coordinates of said point of beginning referred to Government Survey Triangulation Station "NAWILIWILI" being 1,548.42 feet South and 285.30 feet West, thence running by azimuths measured clockwise from True South:

1.	344°	18'	70.38 feet along the remainder of Governor's Executive Order 509;
2.	29°	18'	125.00 feet along the remainder of Governor's Executive Order 509;
3.	344°	18'	73.96 feet along the remainder of Governor's Executive Order 509;
4.	254°	18'	10.50 feet along the remainder of Governor's Executive Order 509;
5.	344°	18'	57.00 feet along the remainder of Governor's Executive Order 509 and Governor's Executive Order 2532;
6.	74°	18'	26.00 feet along the remainder of Governor's Executive Order 2532;
7.	164°	18'	57.00 feet along the remainder of Governor's Executive Order 2532 and Governor's Excutive Order 509;
8.	254°	18'	10.50 feet along the remainder of Governor's Executive Order 509;
9.	164°	18'	76.04 feet along the remainder of Governor's Executive Order 509;
10.	209°	18'	125.00 feet along the remainder of Governor's Executive Order 509;

EXHIBIT "A"

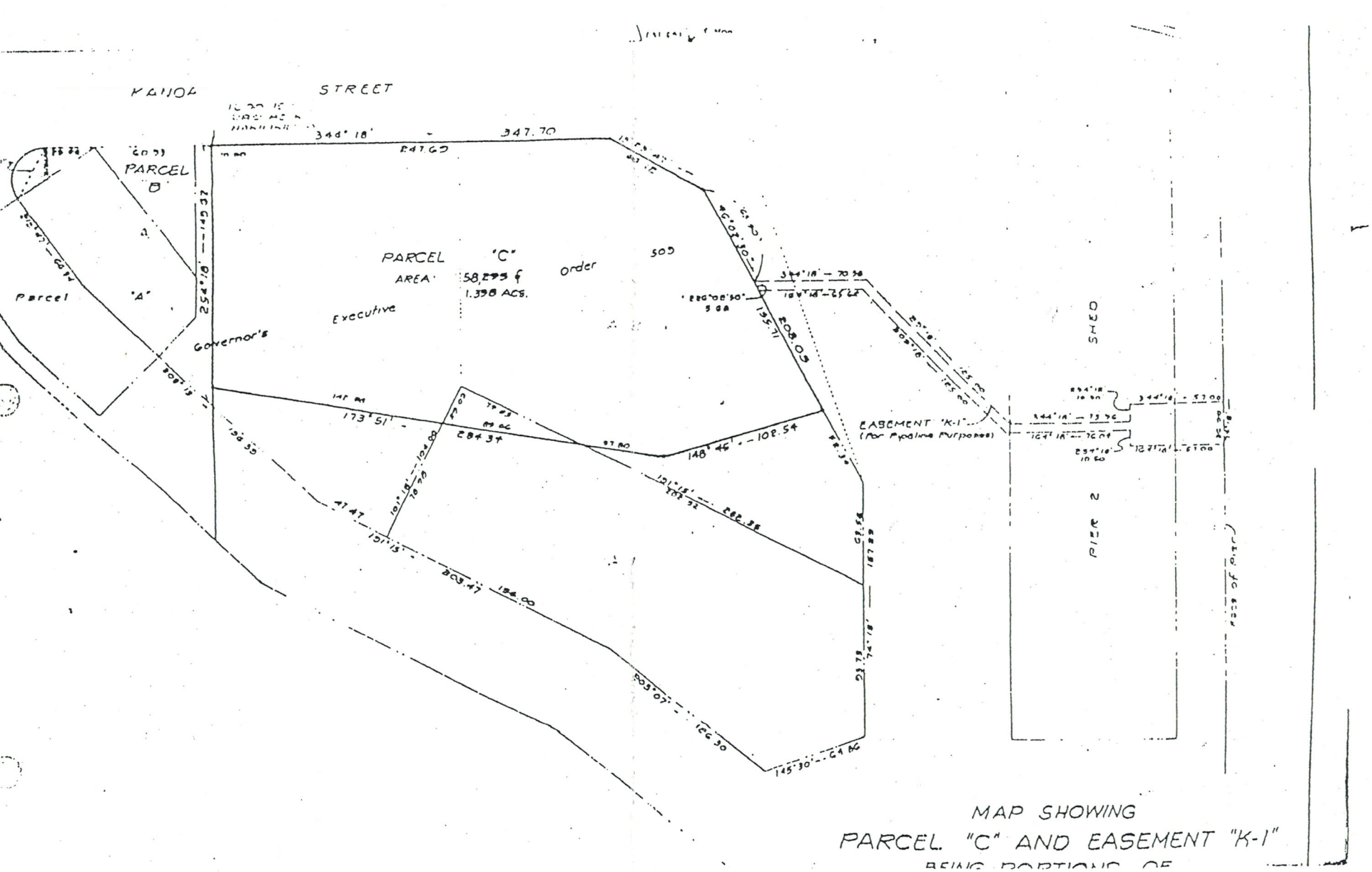
11. 164° 18' 65.62 feet along the remainder of Governor's Executive Order 509;

12. 226° 02' 30" 5.68 feet along the remainder of Governor's Executive Order 509 (Parcel "C") to the point of beginning and containing an Area of 2,822 square feet.

DESCRIPTION PREPARED BY:

Dennis M. Esaki
Registered Land Surveyor
Certificate Number 4383

August, 1986
Kapaa, Hawaii



MAP SHOWING
PARCEL "C" AND EASEMENT "K-1"
BEING PORTIONS OF

PARCEL "C"

LAND SITUATED AT NAWILIWILI, LIHUE, KAUAI, HAWAII

Being a Portion of Governor's Executive Order 509

Beginning at a pipe at the North corner of this parcel of land, on the Westerly side of Kanoa Street, the coordinates of said point of beginning referred to Government Survey Triangulation Station "NAWILIWILI" being 1,200.19 feet South and 289.86 feet West, thence running by azimuths measured clockwise from True South:

1.	344° 18'	247.69	feet along the Westerly side of Kanoa Street;
2.	13° 23' 47"	66.12	feet along the Westerly side of Kanoa Street;
3.	46° 02' 30"	155.71	feet along the Northerly side of Waapa Road;
4.	148° 45'	102.54	feet along the remainder of Governor's Executive Order 509;
5.	173° 51'	284.34	feet along the remainder of Governor's Executive Order 509;
6.	254° 18'	149.62	feet along the remainder of Governor's Executive Order 509 to the point of beginning and containing an Area of 58,295 square feet.

DESCRIPTION PREPARED BY:

Dennis M. Esaki
Registered Land Surveyor
Certificate Number 4383

August, 1986
Kapaa, Hawaii

', c 32, pt of § 2;

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nd of this chapter.
, § 103A-35; HRS

737, 1964 Haw. LEXIS
5, rehearing denied, 47
, 1964 Haw. LEXIS 91,
1964).
aco, Inc., 53 Haw. 567,
. LEXIS 151 (1972).

Op. Att'y Gen. No. 86-3

pursuant to § 171-43,
mpsites, etc., the lease
pliance with all munici-
the premises is discre-
mended to exempt the
d planning regulations.
(1986).

LEGAL PERIODICALS

Hawaii Bar Journal.
Article, Public Access to Beaches in Hawaii: "A Social Necessity," 10 Haw. B.J. 3 (1963).

§ 171-36. Lease restrictions; generally.

(a) **[Effective until June 30, 2005.]** Except as otherwise provided by law, the following restrictions shall apply to all leases:

(1) Options for renewal of terms are prohibited;

(2) No lease shall be for a longer term than sixty-five years, except in the case of a residential leasehold which may provide for an initial term of fifty-five years with the privilege of extension to meet the requirements of the Federal Housing Administration, Federal National Mortgage Association, Federal Land Bank of Berkeley, Federal Intermediate Credit Bank of Berkeley, Berkeley Bank for Cooperatives, or Veterans Administration; provided that the aggregate of the initial term and extension shall in no event exceed seventy-five years;

(3) No lease shall be made for any land under a lease which has more than two years to run;

(4) No lease shall be made to any person who is in arrears in the payment of taxes, rents, or other obligations owing the State or any county;

(5) No lease shall be transferable or assignable, except by devise, bequest, or intestate succession; provided that with the approval of the board of land and natural resources, the assignment and transfer of a lease or unit thereof may be made in accordance with current industry standards, as determined by the board; provided further that prior to the approval of any assignment of lease, the board shall have the right to review and approve the consideration to be paid by the assignee and may condition its consent to the assignment of the lease on payment by the lessee of a premium based on the amount by which the consideration for the assignment, whether by cash, credit, or otherwise, exceeds the depreciated cost of improvements and trade fixtures being transferred to the assignee; provided further that with respect to state agricultural leases, in the event of foreclosure or sale, the premium, if any, shall be assessed only after the encumbrances of record and any other advances made by the holder of a security interest are paid;

(6) The lessee shall not sublet the whole or any part of the demised premises except with the approval of the board; provided that:

(A) Prior to the approval, the board shall have the right to review and approve the rent to be charged to the sublessee;

(B) In the case where the lessee is required to pay rent based on a percentage of its gross receipts, the receipts of the sublessee shall be included as part of the lessee's gross receipts;

(C) The board shall have the right to review and, if necessary, revise the rent of the demised premises based upon the rental rate charged to the sublessee including the percentage rent, if applicable, and provided that the rent may not be revised downward; and

ESTIMATE OF VALUE OF IMPROVEMENTS BY REPRODUCTION COST APPROACH

TAX MAP KEY - 3-2-04-16

1	7,000 barrel gasoline storage tank	Cost New	$218,000	
	Less Depreciation		109,000	
	Depreciated Value			$109,000
1	7,000 barrel gasoline storage tank	Cost New	$218,000	
	Less Depreciation		109,000	
	Depreciated Value			$109,000
1	3,000 barrel gasoline storage tank	Cost New	$124,000	
	Less Depreciation		62,000	
	Depreciation Value			$62,000
2	1,000 barrel diesel storage tanks	Cost New	$82,000	
	Less Depreciation		82,000	
	Depreciated Value			No Value

(The above estimated values include tank foundations and fittings).

660 linear feet of 3" piping @ $17.40	=	$11,484
620 linear feet of 4" piping @ 22.35	=	13,857
280 linear feet of 6" piping @ 51.35	=	14,378
Total Value of Piping		$39,719
Less Depreciation		19,859
Depreciated Value of Piping		$19,860

(The above estimated values of piping included valves, trenching and backfill).

Steel Pump House		$ 1,000
5 Valves at Pump House @ $300	=	1,500
5 Valves between Pump House and Tanks @ $300	=	1,500
Office Building	No Value	No Value
Total Depreciated Value of Bulk Storage Tanks, Piping, Valves, Pump House and Office Building		$303,860
		Rounded to $300,000

AMENDMENT TO HARBOR LEASE NO. H-87-29

THIS AMENDMENT TO HARBOR LEASE NO. H-87-29, made this 19th day of March, 1990, by and between the STATE OF HAWAII, hereinafter called the "LESSOR," and KAUAI PETROLEUM COMPANY, LTD., hereinafter called the "LESSEE,"

WITNESSETH:

WHEREAS, on January 1, 1988, the LESSOR and LESSEE entered into a Lease relating to the use of certain parcel of land and a nonexclusive underground pipeline easement at Nawiliwili Harbor, Kauai, Hawaii; and

WHEREAS, the LESSEE is desirous of surrendering a portion of the premises covered under said Lease, because the area is required to provide an adequate access to the adjacent property bearing Tax Map Key No. 3-2-04-053; and

WHEREAS, the LESSEE is agreeable to the surrender of the area to the LESSOR and the reduction of the annual rent proportionately.

NOW, THEREFORE, the parties hereto each in consideration of the aforesaid do mutually agree that said Harbor Lease No. H-87-29 shall be amended in the following respects:

1. The parcel of land designated as Parcel C (Rev. 2) containing an area of 998 square feet described in Exhibit "C" and outlined in red on Exhibit "D," both Exhibits being attached hereto and made parts hereof, shall be withdrawn from the area of the leased premises covered in said Lease.

2. The area covered under the said Lease designated as Parcel C (Rev. 1) is reduced to 57,297 square feet described in Exhibit "E," attached hereto and made a part hereof outlined in green on Exhibit "F."

3. The base annual rental for land and existing improvements to be paid by the LESSEE shall be reduced to FIFTY- EIGHT THOUSAND NINE HUNDRED EIGHTY-FOUR AND NO/100 DOLLARS ($58,984.00) per annum to reflect the surrender of 998 square feet of the leased premises as of the effective date of this Amendment until rental reopening.

4. Except for the surrender of said 998 square feet and the reduction in base rental to be paid by the LESSEE, the terms of Harbor Lease No. H-87-29 shall remain unaltered and unaffected.

5. This Amendment is effective upon execution by the Director of Transportation of the State of Hawaii.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands as of the day and year first above written.

STATE OF HAWAII

By _____
Its Director of Transportation

KAUAI PETROLEUM COMPANY, LTD.

By _____
Its President

APPROVED AS TO FORM:

_____
Deputy Attorney General

PARCEL (REV. 2)

LAND SITUATED AT NAWILIWILI, LIHUE, KAUAI, HAWAII

Being a portion of Governor's Executive Order 509

Beginning at the South corner of this parcel of land, the coordinates of said point of beginning referred to Government Survey Triangulation Station "Nawiliwili" being 1465.91 feet South and 409.63 feet West, thence running by azimuths measured clockwise from True South:

1.	173°	51'	83.88 feet;
2.	281°	15'	25.02 feet;
3.	11°	15'	79.83 feet to the point of beginning and containing an area of 998 square feet.

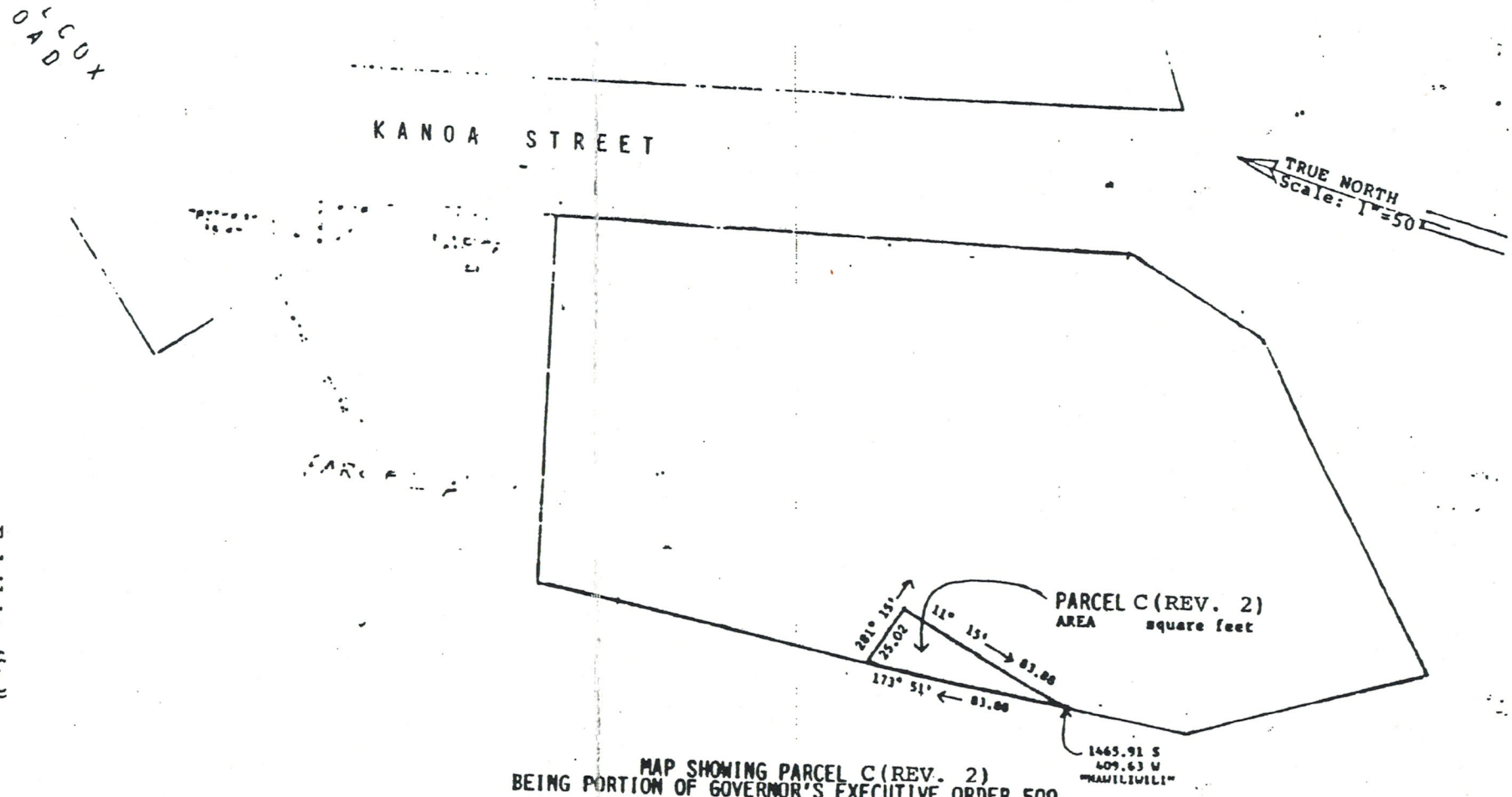
DESCRIPTION PREPARED BY:

HAR-ED EMB

1/25/90

Exhibit "C"

Exhibit "D"



MAP SHOWING PARCEL C (REV. 2)
BEING PORTION OF GOVERNOR'S EXECUTIVE ORDER 509
HAWILIWILI, LIHUE, KAUAI, HAWAII

Owner: State of Hawaii

PARCEL C(REV. 1)

LAND SITUATED AT NAWILIWILI, LIHUE, KAUAI, HAWAII

Being a portion of Governor's Executive Order 509

Beginning at a pipe at the North corner of this parcel of land, on the Westerly side of Kanoa Street, the coordinates of said point of beginning referred to Government Survey Triangulation Station "Nawiliwili" being 1,200.19 feet South and 289.86 feet West, thence running by azimuths measured clockwise from True South:

1.	344°	18'		247.69 feet along the Westerly side of Kanoa Street;
2.	13°	23'	47"	66.12 feet along the Westerly side of Kanoa Street;
3.	46°	02'	30"	155.71 feet along the Northerly side of Waapa Road;
4.	148°	45'		102.54 feet along the remainder of Governor's Executive Order 509;
5.	173°	51'		57.80 feet;
6.	191°	15'		79.83 feet;
7.	101°	15'		25.02 feet;
8.	173°	51'		142.88 feet;
9.	254°	18'		149.62 feet to the point of beginning and containing an area of 57,297 square feet.

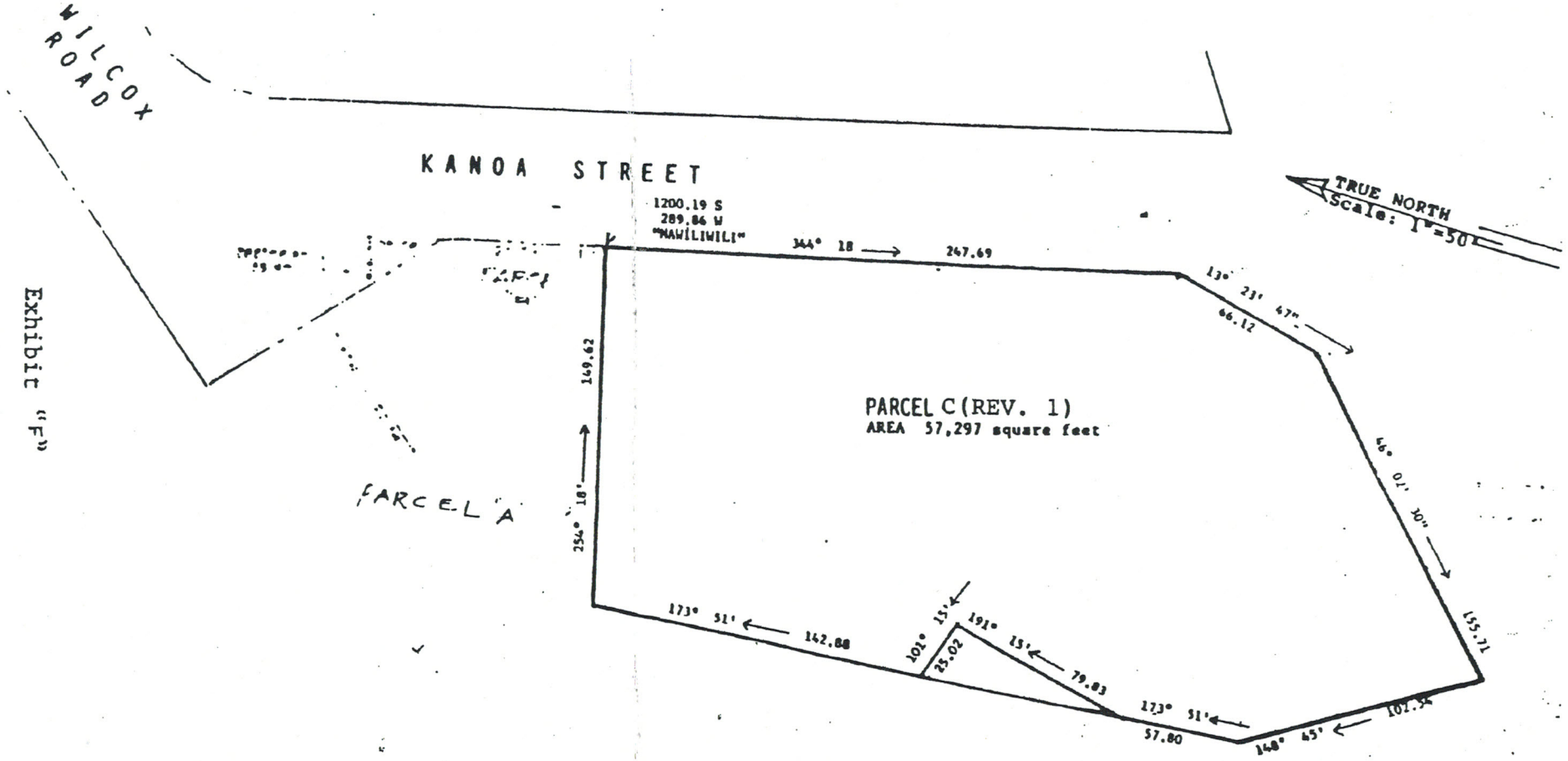
DESCRIPTION PREPARED BY:

HAR-ED

1/25/90

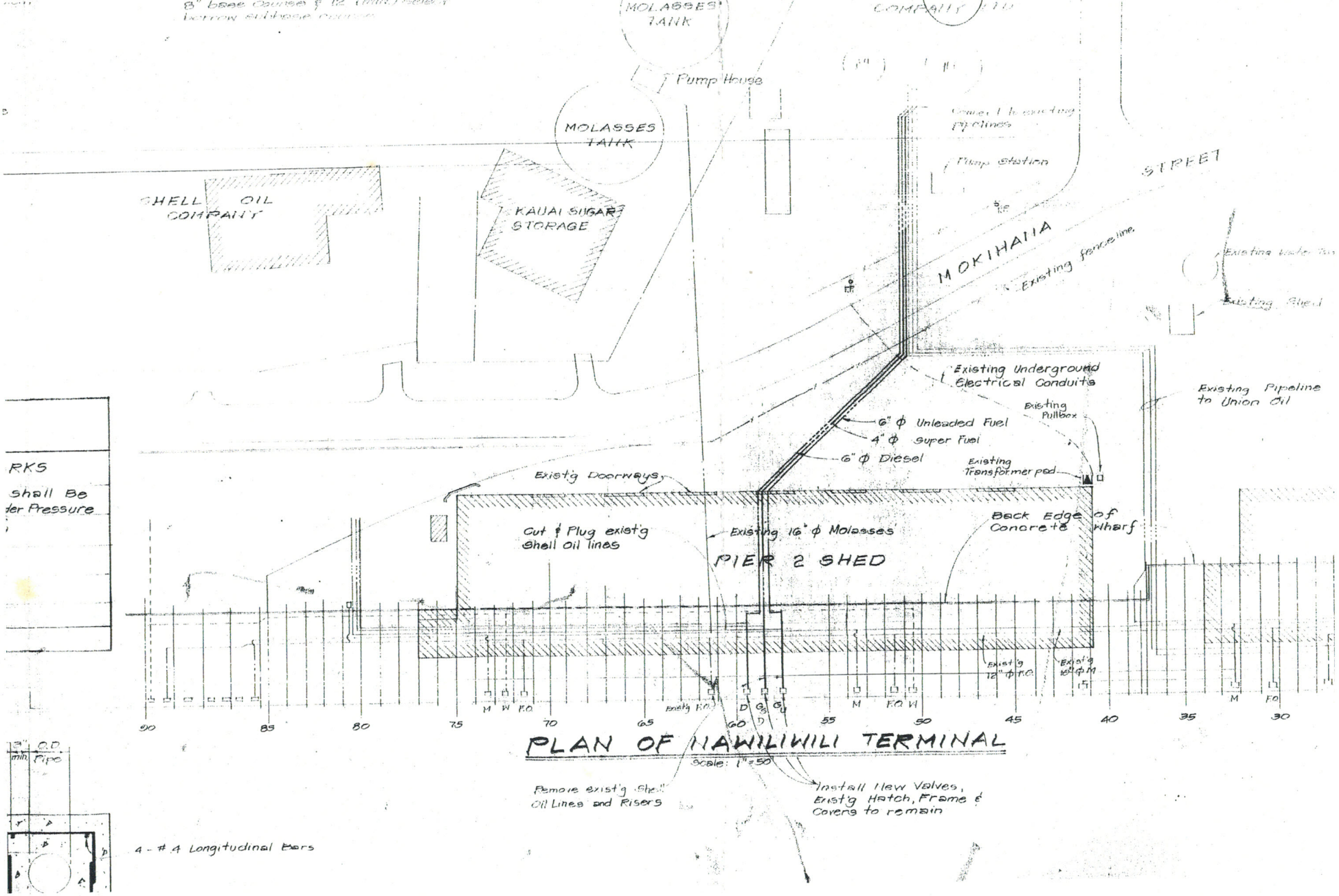
Exhibit "E"

Exhibit "F"



MAP SHOWING PARCEL C (REV. 1)
BEING PORTION OF GOVERNOR'S EXECUTIVE ORDER 509
NAWILIWILI, LIHUE, KAUAI, HAWAII

Owner: State of Hawaii


MOLASSES TANK
Pump House
MOLASSES TANK
SHELL OIL COMPANY
KAUAI SUGAR STORAGE
Pump Station
STREET
MOKIHANA
Existing fenceline
Existing Underground Electrical Conduits
Existing Pullbox
6" ϕ Unleaded Fuel
4" ϕ Super Fuel
6" ϕ Diesel
Existing Transformer pad
Existing Pipeline to Union Oil
Existg Doorways
Cut & Plug existg Shell Oil lines
Existing 16" ϕ Molasses
PIER 2 SHED
Back Edge of Concrete Wharf
90
85
80
75
70
65
60
55
50
45
40
35
30
PLAN OF HAWILIWILI TERMINAL
Scale: 1" = 50
Remove existg Shell Oil Lines and Risers
Install New Valves, Existg Hatch, Frame & Covers to remain
4 - # 4 Longitudinal Bars

APPENDIX C

Special Management Area Use Permits and Permit Applications

TONY T. KUNIMURA
MAYOR

Planning Director

ROLAND D. SAGUM, III
Deputy Planning Director

Telephone (808)245-3919

COUNTY OF KAUAI
PLANNING DEPARTMENT
4280 RICE STREET
LIHUE, KAUAI, HAWAII 96766

COPY

June 28, 1988

Kauai Petroleum Co., Ltd.
c/o Kodani & Associates
3145 Akahi Street
Lihue, Kauai, HI 96766

Subject: Special Management Area Use Permit SMA(U)-88-14
Kauai Petroleum Co., Ltd.
TMK: 3-2-04:16 Nawiliwili, Kauai

The Planning Commission at its meeting held on June 22, 1988, approved the subject permit to replace an existing fuel tank and fuel lines with the following conditions:

1. Concerns and requirements of the County Water Department shall be resolved with that agency.

2. Advance public notice of the project's road work phase shall be given by the applicant.

3. The applicant is advised that prior to and/or during construction and use, additional government agency conditions may be imposed. It shall be the applicant's responsibility to resolve those conditions with the respective agency(ies).

TOM H. SHIGEMOTO
Planning Director

cc: Mayor, Public Works Dept., Water Dept., Health Dept.
Fire Dept., Real Property Div.

COUNTY OF KAUAI
PLANNING DEPARTMENT

FROM: Tom H. Shigemoto, Planning Director DATE: May 6, 1988

SUBJECT: Special Management Area Use Permit SMA(U)-88-14 = Kauai Petroleum Co., Ltd.

TO:
(x) Public Works Dept.
(x) Water Dept.
(x) State Health Dept.
( ) State Highways Div.
(x) Fire Dept.
( ) Sam Lee (DLNR)
( ) State Dept. of Agriculture
( ) Police Dept.
( )
( )

SEP 2 1988

(PN)

FOR YOUR COMMENTS (pertaining to your department):

September 1, 1988

We have no objections to the construction of the storage tank, however, we reserve the right to implement further environmental health requirements in the future.

CT:JES/plo

Signature Clyde Takekuma

Clyde Takekuma, Chief Sanitarian, Kauai

Please return one (1) copy by May 23, 1988. Thank you.

COUNTY OF KAUAI
PLANNING DEPARTMENT
LIHUE, KAUAI

Hearing date June ---
Action deadline
Add.hearing dates

ZA Deadline for Council
Transmittal

STAFF REPORT

PROJECT: Special Management Area Use Permit
SMA(U)-88-14

APPLICANT: Kauai Petroleum Co., Ltd.

FINDINGS

LOCATION: Nawiliwili Harbor; west of Kanoa Street, north of Waapa Road and the Pier 2 area

TAX MAP KEY: 3-2-04:16 **AREA:** 83,352 sq.ft. **ZONING:** Industrial-General
STATE LUC: Urban **GENERAL PLAN:** Urban Mixed Use **EXIST.USE:** Petroleum storage

ACTIONS REQUIRED: An special management area use permit is required as the proposed project falls within the shoreline management area, and the estimated project cost is $165,000.

PROJECT DESCRIPTION AND USE: The applicant is proposing the replacement of two existing 4-inch fuel lines and one existing 6-inch fuel line which are in deteriorating condition with two new 6-inch fuel lines and one new 4-inch fuel line.

LEGAL REQUIREMENTS: A negative declaration for the project has been filed with the Office of Environmental Quality Control. The applicant has complied with Section 9.0 of the Special Management Area Rules and Regulations, relating to public hearing notification requirements.

APPLICANT'S REASONS/JUSTIFICATION: The applicant has provided the following justification:

"The proposal is intended to make the fuel operation more efficient and, therefore, more economical. Further, the maintenance cost will be minimal resulting in customer service being more reliable...Deteriorating fuel line failure poses a serious threat to pollute the harbor and adjacent nearshore waters. Similarly, old fuel storage tanks also have the potentia to leak or collapse. To prevent these serious events from occurring, new replacement fuel line and fuel tanks are planned to be installed and are expected to significantly reduce chances for fuel to enter the harbor."

FINDINGS (cont'd):

The fuel storage area that will be improved by this project receives fuel from tanker ships that dock at Nawiliwili Harbor. Existing lines transport the incoming fuel from the tankers to the storage area across Waapa Road.

The proposed project will occur in an existing industrial, commercial harbor warehouse, and pier area. As such, fuel lines and fuel storage tanks are compatible with the zoning and existing uses of the area. In regards to future use, the 2010 Master Plan for Nawiliwili Harbor (July 1987) designates the subject property for "Petroleum Storage and Distribution." The proposed project will not be introducing a new or expanded use to the harbor area.

Fuel tanks and lines deteriorate with age, and must be replaced or upgraded occasionally. As stated earlier, deteriorating fuel lines and storage tanks pose a potential threat of leakage and subsequent pollution in the harbor and surrounding waters.

The replacement fuel lines are routed to follow the existing fuel lines that presently run from the project site across Waapa Road, and onto the Nawiliwili Pier.

AGENCY COMMENTS:

The Department of Water comments that the building permit for the project should not be granted until:

1. The applicant prepares and receives the Department of Water's approval of construction drawings for necessary water facilities, and either constructs said facilities or posts a performance bond for construction;

   These facilities shall include:

   A. domestic service connection;

   B. fire service connection; and

   C. interior plumbing plans with appropriate backflow prevention device, if applicable.

2. The developer will pay applicable charges in effect at the time of receipt.

The Public Works Department and the Fire Department had no comments on the project.

By _____
Peter A. Nakamura
Planner

Bernard P. Carvalho, Jr.
Mayor

Nadine K. Nakamura
Managing Director

Michael A. Dahilig
Director of Planning

Dee M. Crowell
Deputy Director of Planning

PLANNING DEPARTMENT
County of Kaua'i, State of Hawai'i
4444 Rice Street, Suite A-473, Līhu'e, Hawai'i 96766
TEL (808) 241-4050 FAX (808) 241-6699

JAN 29 2014

Senter Petroleum, Inc.
David Harjo, Site Manager
3011 Aukele Street
Lihue, HI 96766

Subject: Special Management Area Minor Permit SMA(M)-2014-5
Owner – Senter Petroleum
Tax Map Key: (4) 3-2-004:016
Nawiliwili, HI

Based on the information submitted, the department has completed its review and assessment of the proposed development and hereby issues a Special Management Area Minor Permit authorizing construction of improvements to a fuel terminal. Approval is subject to the following conditions:

1. The project shall be constructed as represented. Any changes to said facilities shall be reviewed by the Planning Department and the department reserves the right to impose additional conditions.

2. The Applicant shall develop and utilize Best Management Practices (BMP's) during all phases of development in order to minimize erosion, dust, and sedimentation impacts of the project to abutting properties.

3. As recommended by the State Department of Health (DOH): Please refer to letter sent to the Environmental Health Planning Office in Honolulu (attached)

4. The County of Kauai Fire Department states that the project shall comply with the Kauai County Fire Code.

5. The Department of Public Works offers the following comments:

   a. Based on panel 328F of the Flood Insurance Rate Maps (FIRM) dated November 26, 2010, the subject property is located outside of the special

flood hazard area. The flood zone designation is X. Zone X are areas outside of the 0.2% annual chance flood.

b. The applicant **must** maintain the existing sheet flow drainage patterns.

c. Best Management Practices (BMPs) **shall** be provided at all times to the maximum extent practicable to prevent damage by sedimentation, erosion or dust to streams, watercourses, natural areas and the property of others.

6. The Applicant shall comply with the requirements of the County Departments of Public Works – Engineering Div. State of Hawaii, Dept. of Health, as well as any other applicable government agency(ies).

7. In order to minimize adverse impacts on the Federally Listed Threatened Species, Newell's Shearwater and other seabirds, all external lighting (if applicable) shall be only of the following types: full cut-off, downward facing shielded lights. Spotlights aimed upward or spotlighting of structures, landscaping or the ocean shall be prohibited.

8. The Applicant is advised that should any archaeological or historical resources be discovered during ground disturbing/construction work, all work in the area of the archaeological/historical findings shall immediately cease and the Applicant shall contact the State Department of Land and Natural Resources – Historic Preservation Division at (808) 692-8015 and the Planning Department at (808) 241-4050.

Should there be any questions regarding this matter, please contact the department at 808.241.4050.

MICHAEL A. DAHILIG
Director of Planning

cc: COK – DPW Engineering Division, Water, Fire,
State – DLNR Historic Preservation Division, Dept. of Health

Enc.

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

County of Kaua'i
PLANNING DEPT.

'14 JAN -3 P4:11

RECEIVED

GARY L. GILL
ACTING DIRECTOR OF HEALTH

Dileep G. Bal, M.D., M.S., M.P.H.
DISTRICT HEALTH OFFICER

STATE OF HAWAII
DEPARTMENT OF HEALTH
3040 UMI STREET
LIHUE, HAWAII 96766

December 31, 2013

TO: Laura McIntyre, Manager
Environmental Planning Office

FROM: Gerald N. Takamura, Chief
District Environmental Health Program, Kauai

SUBJECT: County of Kaua`i Application for Special Permit Management Area (Minor)
Permit for Application No.: **SMA(M)-2014-5**
Applicant: **Senter Petroleum, Inc.**

I have informed the County of Kauai Planning Department, that we have forwarded this application to your office for review of the "Report for Fuel Terminal Improvements" located at 3185 Waapa Road, Nawiliwili Harbor, Kauai, TMK: (4) 3-2-004:016.

Enclosed are our comments for this application for your consideration.

Please forward to the Office of Environmental Quality Control, Clean Air Branch, Clean Water Branch, Solid and Hazardous Waste Branch and any other programs that you feel are appropriate, that may have comments or concerns.

Please send your comments to the County of Kauai, Department of Public Works and the Applicant, no later than January 19, 2014. I would appreciate it if a copy of the comments or response is also sent to my office for our information and files.

GNT
Encs.

C: Michael Dahilig, Director, Kauai County Planning Department

Special Management Area (Minor) Permit: **SMA (M)-2014-5**
Applicant: **Senter Petroleum, Inc.**

Based on our review of the application, we offer the following environmental health concerns for your consideration.

1. The noise generated during the site preparation and construction phases of this project shall not exceed the applicable maximum permissible sound levels as stated in Title 11, Hawaii Administrative Rules (HAR), Chapter 11-46, "Community Noise Control", unless a noise permit is obtained from the State Department of Health (DOH).

2. Temporary fugitive dust emissions could be emitted when the project site is prepared for construction and when construction activities occur. In accordance with Title 11, HAR, Chapter 11-60.1, "Air Pollution Control", effective air- pollution control measures shall be provided to minimize or prevent any fugitive dust emissions caused by the construction work from affecting the surrounding areas. This includes the off-site roadways used to enter/exit the project. The control measures include but are not limited to the use of water wagons, sprinkler systems, dust fences, etc.

3. In accordance with Title 11, HAR, Chapter 11-58.1, entitled "Solid Waste Management Control", the project's generated grubbed material and construction waste shall be either recycled or disposed of at a solid waste disposal facility that complies with the DOH. The open burning of any of these wastes on or off site is prohibited.

Due to the general nature of the application submitted, we reserve the right to implement future environmental health restrictions when more detailed information is submitted.

Bernard P. Carvalho, Jr.
Mayor

Nadine K. Nakamura
Managing Director

Michael A. Dahilig
Director of Planning

Dee M. Crowell
Deputy Director of Planning

PLANNING DEPARTMENT
County of Kaua'i, State of Hawai'i
4444 Rice Street
Kapule Building, Suite A-473
Lihu'e, Hawai'i 96766-1326
TEL (808) 241-4050 FAX (808) 241-6699

SEP 05 2014

Mr. David Harjo
Senter Petroleum, Inc.
3185 Waapa Road
Lihue, Hawaii 96766

Via e-mail to david.harjo@senterkauai.com

RE: Departmental Determination DD-2015-4
Applicability of Special Management Area "Development" definition to a proposed use
TMK (4)-3-2-004:106

Dear Mr. Harjo,

Mahalo for your request for a departmental determination dated September 5, 2014 concerning the above parcel. As I understand from your correspondence, you have inquired whether the stationing of portable fuel storage vehicles within the SMA is considered "Development" pursuant to state law and our county rules. The fuel storage vehicles would be parked atop a constructed concrete pad approximately eight to twelve inches in thickness. Further, the fuel storage vehicles would be used on site no more than twenty-four (24) months.

Given the documents transmitted as part of your determination request, I believe that the vehicular nature of the tanks and the lack of structural installation lead to a supportable determination the proposal is in fact not development pursuant to the SMA rules and regulations. I would reserve, on behalf of the department, the opportunity to revisit this determination should the usage of these vehicles go beyond the presented twenty four (24) months.

I hope this analysis and determination meets to your satisfaction. Should you have any further questions, please do not hesitate to contact me at the information above.

Me Ke Aloha Pumehana,

Michael A. Dahilig
Director of Planning

BELLES GRAHAM PROUDFOOT WILSON & CHUN, LLP

MICHAEL J. BELLES (1577-0)
4334 Rice Street, Suite 202
Lihue, Kauai, Hawaii 96766
Telephone: (808) 246-6961
Facsimile: (808) 245-3277
Email: mjb@kauai-law.com

Attorney for Applicant
KAUAI PETROLEUM CO., LTD.,
a Hawaii corporation

BEFORE THE PLANNING COMMISSION

OF THE

COUNTY OF KAUAI

In The Matter Of The Application of KAUAI PETROLEUM CO., LTD., a Hawaii corporation, for a Special Management Area Use Permit and a Class IV Zoning Permit for real property identified as Tax Key No.: (4) 3-2-04:016 at Nawiliwili, Lihue, Island of Kauai, State of Hawaii, and containing an area of 57,297 square feet (1.3154 acres), more or less.	SPECIAL MANAGEMENT AREA USE PERMIT SMA(U)-_____-_____ CLASS IV ZONING PERMIT Z-IV-_____ **APPLICATION; EXHIBITS "A" – "K"**

APPLICATION FOR A SPECIAL MANAGEMENT AREA USE PERMIT AND A CLASS IV ZONING PERMIT

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APPLICATION

COMES NOW KAUAI PETROLEUM CO., LTD., a Hawaii corporation, Applicant in the above-captioned proceedings, by and through its undersigned attorneys, and hereby submits the following Application:

SECTION 1. APPLICANT/OWNER/AGENT/SUBJECT PROPERTY.

1.1 Applicant. The Applicant in this matter (hereinafter referred to as the "Applicant"), KAUAI PETROLEUM CO., LTD., is a Hawaii corporation, and the lessee pursuant to Lease No. H-87-29 of the real property that is the subject of this application ("Subject Property").

1.2 Owner. The Owner of the Subject Property is the State of Hawaii by and through its Department of Transportation, Harbors Division, which has authorized the Applicant to proceed with this Application. ***[Exhibit "A"]***.

1.3 Authorized Agent. Michael J. Belles of Belles Graham Proudfoot Wilson & Chun, LLP has been authorized to file this Application on the Applicant's behalf ***[Exhibit "B"]***.

1.4 Subject Property. The land which is the subject of this Application is identified as Tax Key No.: (4) 3-2-04:016 located at Nawiliwili, Lihue, Kauai, Hawaii. The Subject Property contains 57,297 square feet, more or less (approximately 1.3154 acres (being a portion of Governor's Executive Order 2532). Its street address is 3185 Waapa Road, Lihue, and is located in close proximity to Nawiliwili Harbor.

SECTION 2. LOCATION AND LAND USE DESIGNATIONS OF SUBJECT PROPERTY.

2.1 Location. The Subject Property is shown in relation to the surrounding properties located the tax plat map for Tax Key No.: (4) 3-2-04 attached hereto as ***Exhibit "C"***. Its general area on the island of Kauai is shown on ***Exhibit "D"*** which also shows the outline of the Subject Property in relation to the Harbor proper.

2.2 Land Use Designations. The respective State Land Use Commission ("SLUC"), Kaua'i General Plan, County of Kauai Comprehensive Zoning Ordinance ("CZO"), and other relevant land use designations for the Subject Property are as follows:

a. SLUC. The Subject Property is located within the SLUC Urban District, and has been located in the SLUC Urban District the establishment of the SLUC Districts.

b. Kaua'i General Plan. The Subject Property is located in the Kaua'I General Plan Urban Center Use Designation. The Subject Property has been consistently located in the Urban Center designation or classification under prior General Plans.

c. CZO. The Subject Property is located in the General Industrial (I-G), since the adoption of the CZO).

d. Development Plan Area. The Subject Property is located within the Lihue Development Plan Area. The Subject Property has always been located within the said Development Plan since its adoption in November 1977. It was, however, used for industrial purposes since well before the Lihue Development Plan adoption and, in particular for fuel storage since approximately 1951, as can be seen from an aerial photograph taken in 1951 (black and white) and compared with an aerial photograph taken in 2007 (color), both of which are attached hereto as ***Exhibit "E"***. Also attached as ***Exhibit "F"*** is an aerial photograph showing

that, in 1982, the Subject Property had nine (9) aboveground storage tanks.

e. Special Management Area. Approximately one-half (1/2) of the Subject Property is located within the Special Management Area ("SMA") of the County of Kauai (since the adoption of the SMA Rules (December 17, 1979)). The SMA line runs roughly east to west through the Subject Property, parallel with the Harbor edge (please refer to ***Exhibit "C"***, on which the approximate location of the SMA line is marked in red).

f. Shoreline. The Subject Property's boundary that runs roughly parallel with the harbor edge is approximately 254.383 feet from the harbor edge. The School of Ocean and Earth Sciences and Technology of the University of Hawaii did not prepare a coastal erosion map for the Nawiliwili Harbor area. See ***Exhibit "G"***, which is the coastal erosion map for the Nawiliwili Bay area.

g. Constraint Districts. Not applicable.

h. Violations. There are no land use violations affecting the Subject Property.

i. Land Use Permits. The Subject Property has been the subject of the following land use permits:

(i) Special Management Area use Permit SMA(U)-88-14 approved on June 22, 1988, for the replacement of a storage tank and fuel lines.

(ii) Special Management Area Minor Permit SMA(M)2014-5, issued January 29, 2014, for the construction of improvements to a fuel terminal.

(iii) D-2015-4 issued September 5, 2014, for six (6) temporary fuel storage vehicles 32' in height by 12' in diameter, placed first on a storage vehicle with wheels, parked on a concrete pad no less than 8" in thickness.

j. Relevant Land Use Conditions. Not applicable, except as set forth under the foregoing permits.

SECTION 3. PAST, PRESENT AND PROPOSED USES OF SUBJECT PROPERTY.

3.1 Present Uses. The Subject Property has been used, as far back as Applicant can determine, for storage and distribution of petroleum products (Applicant's lease commenced on January 1, 1988, but prior to that time, petroleum storage and distribution uses were occurring.

3.2 Past Uses. The Subject Property had been used for fuel storage and distribution since at least 1951, based on the aerial photo that Applicant was able to examine (see ***Exhibit "E"***).

3.3 Proposed Use. For the purposes of this Application, the Applicant seeks authorization from this Commission to install two (2) new fuel storage tanks (one with a 4,000 barrel capacity and the other with an 8,000 barrel capacity). To install these two storage tanks, the following construction/development is involved:

- installation of earthen/concrete ring wall tank foundations above and below the existing grade;

- expansion of the ecology block dike wall and dike floor to provide additional secondary containment;

- installation of a cathodic protection system to preserve the steel bottoms resting on the earthen foundation;

- erection and painting of the two (2) API 650 aboveground storage tanks;

- installation of electrical power and control conduits, wires and supports; and

- installation of receipt and delivery piping and supports.

All of the work described above shall be in accordance with Environmental Protection Agency ("EPA"), American Petroleum Institute ("API"), American Society of Testing Materials ("ASTM"), National Electrical Code ("NEC"), National Fire Protection Association ("NFPA") and other applicable industry standards and practices.

The storage tanks will be engineered and designed with the following safety features:

- construction of high grade carbon steel compatible with the contents of the tanks;

- designed and tested for water which is approximately 25-30% heavier than the product stored in the tanks;

- equipped with liquid level measuring devices and high levels alarms to prevent product overfills;

- restricted to height limits (safe fill) that provide safety factors to prevent overfills; and

- painted with a high grade polyurethane three-coat painting system.

On September 15, 2014, pursuant to DD-2015-4, the Applicant was allowed to use and place, on a temporary basis (for a period not to exceed 24 months from the date that the use commenced), six (6) fuel storage vehicles on the Subject Property. The locations of the proposed two (2) new fuel tanks, drawn in in blue, will be as shown on ***Exhibit "H"***. Also depicted are the six (6) smaller portable storage tanks, shown clustered together, and the existing four (4) permanent tanks, depicted in black.

This Application, finally, seeks to allow the six (6) portable storage tanks on a permanent basis (DD-2015-4 allowed those six tanks on a temporary basis for a 24-month period, which will expire in March 2017, as the temporary tanks went into service in April 2015), and also to make permanent the vapor flare and shroud1 which are shown on ***Exhibit "I"***.

SECTION 4. DESCRIPTION OF SUBJECT PROPERTY AND OF SURROUNDING LANDS.

4.1 Surrounding Property. Aside from the harbor and shipping facilities, the Subject Property, as shown on ***Exhibit "J"*** is also located near the Aloha Petroleum storage facilities, the old Bulk Storage building, Garden Island Refuse's facilities, the Kauai Athletic Club facilities (formerly Hale Kauai's site), and other industrial types of uses.

4.2 Description of Subject Property. The Subject Property is composed of generally level land at the corner of Kanoa Street, which meets Waapa Road at the point where Waapa curves to the right and then runs alongside the harbor. Immediately across Kanoa is a parcel of land for shipping containers, and then the facilities for shipping are located seaward of the Subject Property.

At this time, as shown on ***Exhibit "G"***, there is a building for storage/semi-office use2, four (4) permanent tanks, and the six (6) portable tanks. Also on site are a vapor flare/shroud and a truck loading rack. Containment for the tanks is provided by means of an ecology block (concrete) dike wall with an impervious dike floor. Around the perimeter of the

1 The vapor flare/shroud are currently on a wheeled lowboy trailer, and were placed on the Subject Property pursuant to DD-2015-4. This is a system for recovering methane vapors from the tanks to both prevent these vapors from entering the atmosphere, and the reduction of emissions, and also as a cost savings mechanism (since the escape of vapors equates to lost revenues).

2 Approximately 1,500 s.f. of the building is used for storage of a forklift, and necessary supplies and tools for the operation and maintenance of the Applicant's tanks and related facilities, while approximately 500 s.f. of the building is for the terminal manager and where drivers and other employees not stationed at the Subject Property can prepare and file necessary paperwork.

proposed new 4,000 barrel tank, the Applicant will extend the wall to the same or higher level and extend the dike floor within the extended wall, and apply a spray-on impermeable polyurethane liner to maintain the impermeability of the containment area. An additional row of ecology blocks will be added to increase the height of the dike wall as required to maintain secondary containment.

Ecology blocks are stackable, pre-cast concrete barrier systems composed of clean, sized, high-quality concrete and aggregate to provide stability, physical integrity and rigidity. This system forms the walls for the secondary containment area which meets or exceeds the EPA-required capacity, the footprint of which will have to be enlarged or modified to accommodate the additional capacity of the two (2) new tanks. The purpose of the containment area is both to protect the facility from storm events, and to contain accidental spills to reduce the risk of exposing natural resources to environmental damage.

The dike wall prevents floodwaters from inundating the fuel tank area, and further ensures that in the event, unlikely, of a spill, petroleum products are confined to the site. The floor of the containment area is generally flat, with an irregular surface.

The existing tanks have a total capacity of approximately 1,000,000 gallons. Regular grade gasoline, premium grade gasoline, jet fuel and diesel are stored and handled in the tanks. The two (2) new tanks will add an additional 504,000 gallons of capacity. The island's supply of jet fuel is minimal and, accordingly, major airline carriers have requested that there be additional storage capacity to increase the available days of supply from three (3) days to a more acceptable level. The island is short on strategically-placed product, and increasing the storage capacity for the Applicant will provide greater availability for the consumers on the island.

The vapor flare/shroud are required by EPA for vapor recovery to prevent escape into the atmosphere (gasoline stations are also required to have similar systems), and to reduce emissions of noxious and explosive vapors into the atmosphere.

The Subject Property currently receives fuel from barges six (6) to ten (10) times per month, and distributes the fuel held within the tanks on an as-needed basis via tanker trucks. With the addition of the greater storage capacity, the Applicant estimates that the receipt of fuel from barges will be reduced to four (4) to six (6) times per month. There are two (2) types of fuel lines in use at the Subject Property:

- cargo lines that distribute fuel to the storage tanks from barges; and
- rack lines that dispense fuel from the tanks to tanker trucks.

Underground and aboveground steel pipe cargo lines convey fuel from the barge dock at the harbor pier through three (3) buried pipelines that are connected to manifolds and/or tanks to distribute the fuel into the storage tanks, one (1) of which is a 4" cargo line for diesel, one (1) 6" line for gasoline and ethanol, and one (1) 6" cargo line for jetfuel.

Aboveground steel pipe rack lines convey each of the fuels from each of the existing ten (10) individual fuel storage tanks to a loading rack where fuel is then dispensed into tanker trucks. The tanker trucks deliver fuel to various retail service stations, to bulk fuel customers on the island and to the airport.

SECTION 5. PERMITS REQUESTED AND REQUIRED.

5.1 SMA Permit. The six (6) temporary tanks that Applicant seeks to make permanent, are located within the SMA. The two (2) new fuel tanks being proposed are not within the SMA, but the addition of a row of blocks to the dike wall (at least in part) and the lining of the floor and walls of the containment area with impermeable, polyurethane lining (at

least in part), as well as installation of the electrical and control conduits and piping for receipt and delivery, are within the SMA. The Planning Director of the Planning Department of the County of Kauai ("Planning Director") has determined that such activity constitutes a "development" as defined by the Special Management Rules and Regulations of the County of Kauai ("SMA Rules"). The total value of the Development will exceed $500,000.00 (estimated at $2,534,095.12). The allocation of the value as to work within the SMA and outside of the SMA has not been done. Based on the inability to allocate the costs, the Planning Director has determined that the Applicant will need to obtain an SMA Use Permit (as defined in Section 1.4.U. of the SMA Rules) for the proposed Development.

5.2 Class IV Zoning Permit. Since the Subject Property is located in the CZO General Industrial District and is greater than one (1) acre in size, Section 8-7.4(A), KCC will require the issuance of a Class IV Zoning Permit for the Development.

SECTION 6. IMPACTS OF DEVELOPMENT.

6.1 Botanical Resources and Wildlife. The Development will have no significant impact on any endangered or protected wildlife or vegetation in the area. The Subject Property has been in industrial use, in an industrial area, since at least 1951 (see ***Exhibit "E"***, the black and white aerial photograph showing the Subject Property with storage tanks – the use would have preceded the date of the photograph). The Subject Property has been heavily disturbed by industrial activities and uses that long preceded the adoption of the County's zoning code.

6.2 Historical Resources. The Applicant is not aware of any archaeological, cultural or historical resources on the surface of the Subject Property which will be affected by the Development. The Subject Property has been heavily disturbed by past activities that

established the containment area within which the new tanks and the footings for the tanks will be installed. There are no historic sites visible on the surface of the Subject Property. The Subject Property is not the site of a known historic settlement area. The Subject Property is surrounded by developed industrial and commercial parcels. In the event of inadvertent historic site or burial discovery in the future, the Applicant will immediately contact the Historical Preservation Division of the Department of Land and Natural Resources.

6.3 Air Quality/Noise. The Development will have little or no impact on the air quality and ambient noise levels in the area. All vehicles or equipment used by the Applicant in connection with the expanded lining of the containment area and the installation of the new tanks, will be properly muffled, housed and maintained to reduce any noise impacts or emission impacts. The Environmental Protection Agency (EPA) and State of Hawaii air quality standards will not be exceeded. Hours of work shall be compliant with the requirements of the State Department of Health and/or the County Department of Public Works, as is required of all construction.

6.4 Flooding and Drainage. The Subject Property is located within Flood Zone X (areas outside of the 0.2% annual chance flood plain), as indicated by the Flood Insurance Rate Map 150002-0328f). The new construction will meet all of the requirements of the Flood Plain Management Ordinance of the County of Kauai, as contained in Chapter 15, Article 1 of the Kauai County Code ("KCC"). The Development will have no impact on flooding on or around the Subject Property.

6.5 Utilities. Currently available utilities are electricity (from Kauai Island Utility Cooperative) and potable water (from the Department of Water). The electrical system will require upgrading for this project, through Kauai Island Utility Cooperative.

6.6 Wastewater Treatment and Disposal. The Subject Property is connected to the County's sewer system, and will not require any upgrade.

6.7 Solid Waste. Solid waste generated by the office use on the Subject Property is processed through a private waste collection company at the Applicant's expense.

6.8 Fire and Police Services/Schools. Fire and police services in the vicinity are located in Lihue, approximately two (2) miles from the Property. The proposed development of the Subject Property will not significantly increase the need for existing fire and police services.

6.9. Schools. The closest schools are Wilcox Elementary School, Chiefess Kamakahelei Middle School, Island School and Kauai High School. However, this is not the type of development that will result in the increase of enrollment at any of the schools.

6.10 Economics. The development will have the following economic impacts:

a. Jobs. The development will result in the creation of no additional permanent job positions. It is projected that approximately 10 to 15 construction jobs (preparing the containment area and installing the new tanks, along with making the temporary tanks and vapor flare/shroud permanent) are also expected to result.

b. Housing. The development does not trigger the imposition of any Workforce Housing requirements under Chapter 7A, Kauai County Code (the Housing Policy for the County of Kauai).

c. Property Values. Since the fair market value of real property is based on the value of the land and physical improvements, the completion of the Development might increase the value of the Property (improvements already exist, and it is unclear whether or to what extent the addition of new talks will increase the assessed valuation of the Subject

Property). However, it should not, in and of itself, have a material impact on the value of, or real property taxes assessed against, surrounding properties.

6.11 Population. The development is not expected to result in an increase in the island's population, as the Applicant is looking to fill positions with persons who are already residents of the island.

6.12 Traffic Circulation. The majority of traffic to the Subject Property would arrive from Rice Street, then Waapa Road. Some of the traffic might arrive from Rice, to Wilcox then Kanoa and finally Waapa. Traffic coming from or headed to the west side of the island would arrive probably from Kaumualii Highway, then to Nawiliwili Road (and then likely to Kanoa and Waapa). The additional storage should not increase traffic on these roads, because the delivery of the fuel from the barges to the Subject Property is by pipeline, and the transport of the fuel to designated sites is driven by the customers' needs to have their tanks filled (and that volume of traffic would exist regardless of whether the number of tanks at the Subject Property is increased or not).

6.13 Heritage Resources. The Lihue Planning District Heritage Resources Map places the Subject Property in the "Residential, Urban Center, Resort, Transportation, Military" Heritage Resources Designation (Kaua'i General Plan, November 2000). The proposed Development is appropriate for the designation, and the industrial use predated the adoption of the General Plan as well as the zoning ordinances.

The proposed Development will be no more intrusive than any of the existing tanks within the General Industrial District and the harbor area, where such fuel tanks are logically expected to be located. Attached as ***Exhibit "J"*** is a diagram showing the tank's elevations viewed from Kanoa Road. As can be seen, even with the addition of the new tanks (one behind the other),

the intrusion into the view plane from that perspective is minimalized to the extent possible, while still allowing additional storage capacity. As a result, the Development will comply with its Heritage Resource Designation.

6.14 On-site Parking. On any given day, one, and sometimes two, terminal managers are on site. These terminal managers are responsible for the ordinary conduct of the business of receiving and distributing fuel, and working with the drivers who make the fuel deliveries (the drivers are not permanently stationed at the Subject Property. A total of four (4) paved parking stalls are available, as shown on _____. The available parking exceeds the number of stalls required by Section 8-7.3(e)(A), KCC, which requires one (1) stall for each three employees.

SECTION 7. SLUC CONSIDERATIONS.

7.1 SLUC Urban District. The Subject Property is located entirely in the SLUC Urban District. Section 205-2(b), Hawaii Revised Statutes ("HRS") specifies that activities and uses in the Urban District shall include those as provided for by ordinances or regulations of the counties within which the Urban District is situated.

7.2 Development's Compliance With SLUC Urban District Standards. The proposed Development involves the addition of two (2) new fuel storage tanks and related facilities (expansion of the containment area, piping, electronic connections, etc.), and making permanent six (6) previously permitted storage tanks allowed on a 24-month basis along with the vapor flare/shroud that prevents the release of fuel vapors and fumes into the environment. The County zoning of General Industrial (I-G) allows for such uses. As such, the proposed Development will be in conformity with the nature and type of uses allowed under Section 205-2(b), HRS.

SECTION 8. GENERAL PLAN CONSIDERATIONS.

8.1 Kauai General Plan Urban Center Land Use Designation. The Subject Property is located in the Kauai General Plan Urban Center Land Use Designation. The policies governing such lands are set forth in Section 5.4.1.1 of the Kauai General Plan, which provides in relevant part as follows:

> **"5.4.1 Urban Center**
>
> **5.4.1.1 Policy**
>
> (a) Lands included within the Urban Center designation shall be centers of government, commerce and transportation that serve the entire county or a large region. Uses may include shopping centers, government offices, churches and other institutions, office complexes, and industrial facilities. Residential or resort uses may also be located within the Urban Center designation, where compatible.
>
> (b) Urban Center areas are typically served by wastewater collection and treatment facilities and major roads. Urban Center lands may be zoned for any type of use, including General Commercial, General Industrial, Resort, and Residential."

8.2 Development's Compliance with Kaua'i General Plan Standards. The proposed Development involves providing additional storage capacity for fuels within a specified, and existing, containment area within the General Industrial zone, in an area surrounded by other industrial uses, including harbor use, transportation and shipping facilities, another fuel tank site, and solid waste collection/recycling operations. The Development itself will have no significant impact on the surrounding environment, as it will be compatible with other industrial uses in the area, as well as with the surrounding environment. As such, the development complies with the Kaua'i General Plan policy for the Urban Center Designation in that is proposed for an area on

appropriately zoned land, and will concentrate industrial development within an industrial area.

SECTION 9. CZO ZONING DISTRICT CONSIDERATIONS.

SECTION 9. CZO INDUSTRIAL DISTRICT CONSIDERATIONS.

9.1 CZO Industrial District. The Subject is zoned General Industrial ("I-G"). The uses that are specifically permitted in the CZO General Industrial District are set forth in Section 8-2.4(n)(1) through (20), as follows:

(1) Accessory uses and structures
(2) Animal hospitals
(3) Automobile services, sales, repair and storage
(4) Cemeteries, mortuaries and crematoriums
(5) Communication facilities
(6) Construction material manufacturing
(7) Construction material storage
(8) Excavation and extraction
(9) Factories
(10) Food processing and packaging
(11) Light manufacturing
(12) Manufacturing in retail sales
(13) Mineral processing
(14) Private and public utilities and facilities
(15) Public parks and monuments
(16) Restaurants, bars and food services
(17) Research and development
(18) Retail sales
(19) Transportation terminals and docks.
(20) Warehouses.

The uses for which a use permit are required in the General Industrial District are set forth in Sections 8-2.4(p)(1) through (10), as follows:

(1) Commercial recreation and parks
(2) Diversified agriculture
(3) Inflammable or noxious chemical processing or storage
(4) Junk yards and dumps

(5) Livestock and poultry yards and piggeries
(6) Museums, libraries and public services
(7) Office and professional buildings
(8) Project development in accordance with Article 18 of this Chapter
(9) Stockyards
(10) Any other use or structure which the Planning Director finds to be similar in nature and appropriate to the district.

9.2 Development's Compliance with CZO General Industrial District Standards. The proposed Development involves expanding an existing fuel storage facility by accommodating greater storage capacity, which is not specifically described as a permitted use in the General Industrial District. The fuels, however, are a necessary component of this island community, as it provides means of transport for a variety of transportation modes (motor vehicles and aircraft alike), and locating the expansion to a property that has been used for fuel storage since prior to 1951 is appropriate. With the containment measures that exist and that will be supplemented, the Development itself will have no significant impact on the surrounding environment or properties, as these uses are appropriate to and compatible with the zoning district in which it is proposed.

Components of the facility's improvements are implemented to satisfy EPA, API, ASTM , NEC, National Fire Protection Association and State Department of Health standards. The materials for the tanks, and the design and equipping of these tanks have been critical factors in increasing the safety for the persons and properties in the neighborhood of the tanks, and the environment.

SECTION 10. SMA CONSIDERATIONS.

10.1 Recreational Resources. There are no public recreational opportunities that were previously available on the Subject Property. The Development will not have any negative impact on any public recreational opportunities located on or near the Subject Property. The Development is not located on the shoreline (it is, however, within the 500' distance established by Section 8-27.1(b), KCC), and will not overburden the use of, nor restrict access to, any shoreline areas.

10.2 Historic Resources. The Development will have no impact on any known historic, cultural or archaeological resources located on the Subject Property. However, as stated above, the Applicant will protect and preserve any historic resources that may be found as a result of the Development.

10.3 Scenic and Open Space Resources. The Development will have no negative impact on the scenic and open space resources on and around the Subject Property. The Development will be compatible with and blend in with the uses and structures located in the surrounding area. The Development will not interfere with any views to or along the shoreline and will not involve alterations to existing landforms. The Development will not interfere with views from the nearest coastal roadway (which in this area would be Rice Street) to the shoreline.

10.4 Coastal Ecosystems. The Subject Property is not located along any streams or the shoreline, and is a little over 254 feet from the armored harbor edge.

10.5 Economic Uses. The Development will create short-term economic benefits associated with the construction/installation work. After completion, the Development will provide increased fuel storage for customers' needs. No negative impacts to the economy

are anticipated.

10.6 Coastal Hazards. As shown on the County of Kauai's flood insurance rate map (Flood Insurance Rate Map 150002-0328f), the Development is to located in Flood Zone X. The Development will have no contributory impact on flooding on or around the Subject Property.

10.7 Managing Development/Public Participation. The Development activities on the Subject Property are complimentary to, and consistent with, past, present and future development in this area of Kauai. The Development will not result in an irrevocable commitment to the loss or destruction of any natural or cultural resources. The Development is not part of a larger development that will have cumulative effects on the environment; or that will involve a commitment for larger actions.

10.8 Beach Protection/Marine Resources. The seaward boundary of the Subject Property is a little over 254 feet from the harbor's armored edge. The Development will have no impact on the shoreline or beach areas located in the Nawiliwili area. The Development will not involve any development within the beach or coastal area which would have any impact on marine or coastal resources.

10.9 Value of Development. The Development involves activities with a value in excess of $500,000.00 (approximately $2,534,095.12).

SECTION 11. SHORELINE SETBACK ASSESSMENT

11.1 Erosion Rate Not Established. The Nawiliwili Bay area has not been covered under the School of Ocean and Earth Sciences and Technology ("SOEST") mapping for the island of Kauai (see ***Exhibit "F"***), and therefore, no annual coastal erosion hazard rate ("AEHR") is available for the Subject Property or its surroundings.

Therefore, under Section 8-27.3(c), KCC the setback calculation for the Subject Property is set forth under Table 2, as follows:

40 feet + 70 x AEHR for building footprints of 5,000 s.f. or less, or

40 feet + 100 x AEHR for building footprints greater than 5,000 s.f.

In this case, the formula yields, regardless of whether the appropriate multiplier is 70 or 100, the following:

40 feet + (70 or 100) x 0 AEHR = 40 feet

In short, the erosion rate setback is 40 feet from the shoreline (which in this case would be the armored harbor edge. The proposed Development, occurring in excess of 250 feet from the armored harbor edge, then, meets the requirements of the County's shoreline setback standards.

SECTION 12. LIHUE DEVELOPMENT PLAN.

12.1 Development Policies. The Lihue Development Plan recognized the Nawiliwili Harbor facilities as being the major mode of transportation for cargo for the island, identifying the need for expansion of docks, storage facilities and resolution of circulation conflicts within the land-based harbor facilities area. And yet, the Nawiliwili area is not identified as one of the Planning sub-areas, nor is its existence factored into establishing priorities, goals and objectives as, at the focus appear to be with respect to commercial development and housing.

12.2 Compliance. The proposed Development does not appear to conflict with any of the goals or objectives contained in the Lihue Development Plan. Nevertheless, the Development is consistent with will be compatible with the uses in the industrial areas and uses abutting it. The proposed Development will provide short-term economic opportunity for Kauai

residents (i.e., contractors and skilled workers in the construction industry). The proposed Development will have no negative impact on the public safety or welfare, on any endangered species of plants or animals, on archaeologic or historic sites, or on recreational opportunities on or around the Subject Property, as it is confined to a parcel that has been used for fuel storage uses since prior to 1951. As such, it is appropriate for the area.

SECTION 13. HRS CHAPTER 343 (ENVIRONMENTAL IMPACT STATEMENTS).

The Development is not subject to the provisions of Chapter 343, HRS, as it does not involve the use of State or County lands; does not involve lands within the SLUC Conservation District; does not involve land within the shoreline area as defined in Section 205A-41, HRS; does not involve any historic site as designated in the national or State registers; does not involve lands in the Waikiki Special District; does not propose the reclassification of any SLUC Conservation District lands; and does not propose construction of new, or expansion or modification of, any helicopter facilities.

SECTION 14. NATIVE HAWAIIAN ISSUES.

The Development will have no impact on any known traditional or customary practices of native Hawaiians. There are no known traditional or customary practices of native Hawaiians that are occurring within the Subject Property that will be affected. There are no special gathering practices taking place on or upon the Subject Property that will be affected. The Development will not detrimentally affect access to any streams, the shoreline or other adjacent areas, or gathering along any streams, the shoreline or in the ocean. There are no known religious practices taking place within the Subject Property. The Development will have no negative impact on any cultural or historic sites or resources located within the Subject Property.

SECTION 15. SUMMARY OF COMPLIANCE WITH APPLICABLE LAND USE DESIGNATIONS.

15.1 SLUC. The Development activities on the Subject Property will be compatible with the SLUC Urban District designation. Section 205-2(b), HRS.

15.2 Kaua'i General Plan. The Development activities on the Subject Property will be compatible with the General Plan Residential, Urban Center, Resort, Transportation, Military Land Use Designation. General Plan, Section 5.4.2.

15.3 Lihue Development Plan. The Development activities on the Subject Property appear to be compatible with the Lihue Development Plan, as incorporated in Chapter 10, Article 5, KCC.

15.4 CZO. The Development activities on the Subject Property will be compatible with the CZO General Industrial (I-G). Section 8-2.4, KCC.

15.5 SMA. The Development activities on the Subject Property will fulfill the provisions of the SMA Rules in that:

a. The Development will have no affect on public access to publicly owned or used beaches and recreational areas.

b. No wildlife or endangered plant or animal species are located on the Subject Property.

c. Provisions for solid and liquid waste treatment, disposition and management will be developed in order to minimize adverse effects on the Special Management Area.

d. Alteration to existing land forms or vegetation and the construction of structures will cause minimum adverse effects to water resources and scenic and recreational

amenities, and will minimize danger of floods, wind damage, storm surge, landslides, erosion, siltation, or failure in the event of earthquake.

e. The Development will not require dredging, filling, or altering any bay, estuary, salt marsh, river mouth, slough or lagoon.

f. The Development will not reduce the size of any beach or other area useable for public recreation.

g. The Development will not reduce or impose restrictions upon public access to tidal and submerged lands, beaches, portions or rivers or streams within the Special Management Area and the mean high tide line where there is no beach.

h. The Development will not substantially interfere with or detract from the line of sight toward the sea from the State highway nearest the coast;

i. The Development will not adversely affect water quality, existing areas of open water free of visible structures, existing and potential fisheries and fishing grounds, wildlife habitats, or potential or existing agriculture uses of land.

j. The Development will not have any substantial environmental or ecological effect, except as such adverse effect is minimized to the extent practicable and clearly outweighed by public health, safety, or compelling public interests.

k. The Development is consistent with the objectives, policies, and guidelines set forth in HRS Chapter 205A and Sections 3.0 and 4.0 of the SMA Rules.

l. The Development is consistent with permitted uses in the SLUC Urban District, the Kauai General Plan, the Lihue Development Plan, and the CZO.

15.6 Shoreline Setback. The Development meets shoreline setback requirements.

SECTION 16. CONCLUSION.

The Applicant respectfully requests that the Planning Commission of the County of Kauai grant the Applicant the requested Special Management Area Use Permit and Class IV Zoning Permit for the Development.

DATED: Lihue, Kauai, Hawaii, _____.

BELLES GRAHAM PROUDFOOT
WILSON & CHUN, LLP

By_____
MICHAEL J. BELLES
Attorneys for Applicant
KAUAI PETROLEUM CO., LTD.

APPENDIX D

Correspondence

NOTICE TO REQUESTER

(Use multiple forms if necessary)

TO: Iris van der Zander, ESI / izander@esciencei.com HW Section

FROM: Hawaii Dept. of Health, Solid & Hazardous Waste Branch, 586-4226
(Agency/name & telephone number of contact person at agency)

DATE REQUEST RECEIVED: 9/3/15

DATE OF THIS NOTICE: 9/10/15

GOVERNMENT RECORDS YOU REQUESTED (attach copy of request or provide brief description below):

1.
2.
3. See attachment
4.

The HW record is ready for review. Please call for appt.

NOTICE IS PROVIDED TO YOU THAT YOUR REQUEST:

- [x] **Will be granted in its entirety.**
- [ ] **Cannot be granted because**
  - [ ] Agency does not maintain the records. Agency believed to maintain records:
  - [ ] Agency needs a further description or clarification of the records requested. Please contact the agency and provide the following information:
  - [ ] Request requires agency to create a summary or compilation from records not readily retrievable.

- [ ] **Is denied in its entirety** [ ] **Will be granted only as to certain parts**
  based upon the following exemption provided in HRS § 92F-13 and/or § 92F-22 and other laws cited below (portions of records that agency will not disclose should be described in general terms).

RECORDS OR INFORMATION WITHHELD	APPLICABLE STATUTES	AGENCY JUSTIFICATION

REQUESTER'S RESPONSIBILITIES:

You are required to (1) pay any lawful fees assessed; (2) make any necessary arrangements with the agency to inspect, copy or receive copies as instructed below; and (3) provide the agency any additional information requested. If you do not comply with the requirements set forth in this notice within 20 business days after the postmark date of this notice or the date the agency makes the records available, you will be presumed to have abandoned your request and the agency shall have no further duty to process your request. Once the agency begins to process your request, you may be liable for any fees incurred. If you wish to cancel or modify your request, you must advise the agency upon receipt of this notice.

METHOD & TIMING OF DISCLOSURE:

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Method of Disclosure:

☒ Inspection at the following location: 919 Ala Moana Blvd, Rm 212, Honolulu.

☐ As requested, a copy of the record(s) will be provided in the following manner:

- ☐ Available for pick-up at the following location: _____.
- ☐ Will be mailed to you.
- ☐ Will be transmitted to you by other means requested: _____.

Timing of Disclosure: All records, or first increment where applicable, will be made available or provided to you:

☒ On please call for appointment.

☐ After prepayment of fees and costs of $ _____ (50% of fees +100% of costs, as estimated below).
Payment may be made by cash or: ☐ personal check ☐ other _____.

For incremental disclosures, each subsequent increment will be disclosed within 20 business days after:

- ☐ The prior increment (if one prepayment of fees is required and received).
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Disclosure is being made in increments because the records are voluminous and the following extenuating circumstances exist:

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- ☐ Request requires extensive agency efforts to search, review, or segregate the records or otherwise prepare the records for inspection or copying.
- ☐ Agency requires additional time to respond to the request in order to avoid an unreasonable interference with its other statutory duties and functions.
- ☐ A natural disaster or other situation beyond agency's control prevents agency from responding to the request within 10 business days.

ESTIMATED FEES & COSTS:

The agency is authorized to charge you certain fees and costs to process your request (even if no record is subsequently found to exist), but must waive the first $30 in fees assessed for general requesters and the first $60 in fees when the agency finds that the request made is in the public interest. See HAR §§ 2-71-19, -31 and -32. The agency may require prepayment of 50% of the total estimated fees and 100% of the total estimated costs prior to processing your request. The following is the estimate of the fees and costs that the agency will charge you, with the applicable waiver amount deducted:

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	Review & segregation	Estimate of time to be spent: 15 ($5.00 for each 15-minute period)	$ 5.00
	Fees waived	☒ general ($30) ☐ public interest ($60)	<$ 30.00>
	Other	_____ (Pursuant to HAR §§ 2-71-19 & 2-71-31)	$
	Total Estimated Fees:		**$** 0
Costs:	Copying	Estimate of # of pages to be copied: _____ (@ $ _____ per page.)	$
	Other	_____	$
	Total Estimated Costs:		**$**

For questions about this notice, please contact the person named above. Questions regarding compliance with the UIPA may be directed to the Office of Information Practices at 808-586-1400 or oip@hawaii.gov.

SEP 03 2015

REQUEST TO ACCESS A GOVERNMENT RECORD

UST:
HW:
SW:

DATE: 9/03/15

TO: Solid and Hazardous Waste Branch

FROM: Iris van der Zander (Environmental Science International, Inc)
Name or Alias

354 Uluniu St Ste 304, Kailua, HI 96734
Contact Information

(808) 261-0740 Ext. 116; izander@esciencei.com

Although you are not required to provide any personal information, you should provide enough information to allow the agency to contact you about this request. The processing of this request may be stopped if the agency is unable to contact you. Therefore, please provide any information that will allow the agency to contact you (name or alias, telephone or fax number, mailing address, e-mail address, etc.).

I WOULD LIKE THE FOLLOWING GOVERNMENT RECORD:

Describe the government record as specifically as possible so that it can be located. Try to provide a record name, subject matter, date, location, purpose, or names of persons to whom the record refers, or other information that could help the agency identify the record. A complete and accurate description of the government record you request will prevent delays in locating the record. Attach a second page if needed.

All records relating to the following property are requested:

Facility Name	Facility Address	TMK Numbers
Kauai Petroleum Terminal	3185 Waapa Rd Lihue, Kauai	(4) 3-2-004:016

Kauai Petroleum Company, Ltd.
HW-7164

I WOULD LIKE: (please check one or more of the options below)

☒ **To inspect the government record.**

☐ **A copy of the government record:** (Please check one of the options below.) See the back of this page for information about fees that you may be required to pay for agency services to process your record request. Note: Copying and transmission charges may also apply to certain options.

- ☐ Pick up at agency (**date and time**): _____
- ☐ Mail
- ☐ Fax (toll free and only if available)
- ☐ Other, if available (please specify): _____

☐ If the agency maintains the records in a form other than paper, please advise in which format you would prefer to have the record.

☒ Electronic ☐ Audio ☐ Other (please specify): _____

☐ Check this box if you are attaching a request for waiver of fees in the public interest (see waiver information on back).

SEE BACK FOR IMPORTANT INFORMATION

9/3

NOTICE TO REQUESTER

(Use multiple forms if necessary)

TO: Iris van der Zander, ESI / izander@esciencei.com UST Section

FROM: Hawaii Dept. of Health, Solid & Hazardous Waste Branch, 586-4226

(Agency/name & telephone number of contact person at agency)

DATE REQUEST RECEIVED: 9/3/15

DATE OF THIS NOTICE: 9/16/15

GOVERNMENT RECORDS YOU REQUESTED (attach copy of request or provide brief description below):

1.
2.
3. See attachment
4.

There are no UST records.

NOTICE IS PROVIDED TO YOU THAT YOUR REQUEST:

☐ **Will be granted in its entirety.**

☒ **Cannot be granted because**

- ☒ Agency does not maintain the records. Agency believed to maintain records:
- ☐ Agency needs a further description or clarification of the records requested. Please contact the agency and provide the following information:
- ☐ Request requires agency to create a summary or compilation from records not readily retrievable.

☐ **Is denied in its entirety** ☐ **Will be granted only as to certain parts**

based upon the following exemption provided in HRS § 92F-13 and/or § 92F-22 and other laws cited below (portions of records that agency will not disclose should be described in general terms).

RECORDS OR INFORMATION WITHHELD	APPLICABLE STATUTES	AGENCY JUSTIFICATION

REQUESTER'S RESPONSIBILITIES:

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Method of Disclosure:

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	Fees waived	☐ general ($30) ☐ public interest ($60)	<$ 31.00>
	Other	____ (Pursuant to HAR §§ 2-71-19 & 2-71-31)	$
	Total Estimated Fees:		$ 0
Costs:	Copying	Estimate of # of pages to be copied: ____ (@ $ ____ per page.)	$
	Other	____	$
	Total Estimated Costs:		**$**

For questions about this notice, please contact the person named above. Questions regarding compliance with the UIPA may be directed to the Office of Information Practices at 808-586-1400 or oip@hawaii.gov.

SEP 03 2015

REQUEST TO ACCESS A GOVERNMENT RECORD

UST: C
HW:
SW:

DATE: 9/03/15

TO: Solid and Hazardous Waste Branch

FROM: Iris van der Zander (Environmental Science International, Inc)
Name or Alias

354 Uluniu St Ste 304, Kailua, HI 96734
Contact Information

(808) 261-0740 Ext. 116; izander@esciencei.com

Although you are not required to provide any personal information, you should provide enough information to allow the agency to contact you about this request. The processing of this request may be stopped if the agency is unable to contact you. Therefore, please provide any information that will allow the agency to contact you (name or alias, telephone or fax number, mailing address, e-mail address, etc.).

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All records relating to the following property are requested:

Facility Name	Facility Address	TMK Numbers
Kauai Petroleum Terminal	3185 Waapa Rd Lihue, Kauai	(4) 3-2-004:016

I WOULD LIKE: (please check one or more of the options below)

☒ **To inspect the government record.**

☐ **A copy of the government record:** (Please check one of the options below.) See the back of this page for information about fees that you may be required to pay for agency services to process your record request. Note: Copying and transmission charges may also apply to certain options.

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- ☐ Fax (toll free and only if available)
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☒ Electronic ☐ Audio ☐ Other (please specify): _____

☐ Check this box if you are attaching a request for waiver of fees in the public interest (see waiver information on back).

SEE BACK FOR IMPORTANT INFORMATION

9/3

NOTICE TO REQUESTER

(Use multiple forms if necessary)

TO: Iris van der Zander, ESI / izander@esciencei.com SW Section

FROM: Hawaii Dept. of Health, Solid & Hazardous Waste Branch, 586-4226

(Agency/name & telephone number of contact person at agency)

DATE REQUEST RECEIVED: 9/3/15

DATE OF THIS NOTICE: 9/10/15

GOVERNMENT RECORDS YOU REQUESTED (attach copy of request or provide brief description below):

1.
2.
3. See attachment
4.

NOTICE IS PROVIDED TO YOU THAT YOUR REQUEST: There are no SW records.

☐ **Will be granted in its entirety.**

☒ **Cannot be granted because**

- ☑ Agency does not maintain the records. Agency believed to maintain records:
- ☐ Agency needs a further description or clarification of the records requested. Please contact the agency and provide the following information:
- ☐ Request requires agency to create a summary or compilation from records not readily retrievable.

☐ **Is denied in its entirety** ☐ **Will be granted only as to certain parts**

based upon the following exemption provided in HRS § 92F-13 and/or § 92F-22 and other laws cited below (portions of records that agency will not disclose should be described in general terms).

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	Fees waived	☑ general ($30) ☐ public interest ($60)	<$ 30.00>
	Other	____ (Pursuant to HAR §§ 2-71-19 & 2-71-31)	$
	Total Estimated Fees:		**$** 0
Costs:	Copying	Estimate of # of pages to be copied: ____ (@ $____ per page.)	$
	Other	____	$
	Total Estimated Costs:		**$**

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SEP 03 2015 (1)

REQUEST TO ACCESS A GOVERNMENT RECORD

UST: ___

HW: ___

SW NONE

DATE: 9/03/15

TO: Solid and Hazardous Waste Branch

FROM: Iris van der Zander (Environmental Science International, Inc)
Name or Alias

354 Uluniu St Ste 304, Kailua, HI 96734
Contact Information

(808) 261-0740 Ext. 116; izander@esciencei.com

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☒ **To inspect the government record.**

☐ **A copy of the government record:** (Please check one of the options below.) See the back of this page for information about fees that you may be required to pay for agency services to process your record request. Note: Copying and transmission charges may also apply to certain options.

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☒ Electronic ☐ Audio ☐ Other (please specify): _____

☐ Check this box if you are attaching a request for waiver of fees in the public interest (see waiver information on back).

SEE BACK FOR IMPORTANT INFORMATION

9/3

TRANSMISSION VERIFICATION REPORT

TIME : 09/03/2015 09:45
NAME : ESI
FAX : 8082610749
TEL : 8082610740
SER.# : 000A6J633728

DATE,TIME	09/03 09:44
FAX NO./NAME	5867537
DURATION	00:00:22
PAGE(S)	02
RESULT	OK
MODE	STANDARD ECM

FACSIMILE TRANSMITTAL

Environmental Science International
354 Uluniu Street, Suite 304, Kailua, Hawaii 96734
(808) 261-0740 phone / (808) 261-0749 fax

❄ **THERE ARE 2 PAGES TO SEND, INCLUDING THIS PAGE.** ❄

DATE: September 03, 2105

TO: Solid and Hazardous Waste Branch

ATTN: Manager

FAX NUMBER: (808) 586-7509 **Project No. 115043**

FROM: Iris van der Zander

To Whom It May Concern,

I would like to request copies of any records for the Kauai Petroleum Terminal located at 3185 Waapa Road, Lihue Kauai TMK No. (4) 3-2-004:016.

If you have any questions or need any more information please give me a call at 561-5357

Mahalo,

Iris van der Zander

CONFIDENTIALITY NOTICE

The documents accompanying this fax contain information that is confidential and may be legally privileged. The information is intended for the individual or entity named on this transmittal. If you are not the intended recipient, be aware that any unauthorized disclosure, copying, distribution, or use of this information is prohibited. If you have received this fax in error, please notify us immediately by telephone so that we can arrange for the retrieval of the original documents at no cost to you.

REQUEST TO ACCESS A GOVERNMENT RECORD

DATE: 9/03/15

TO: Solid and Hazardous Waste Branch

FROM: Iris van der Zander (Environmental Science International, Inc)
Name or Alias

354 Uluniu St Ste 304, Kailua, HI 96734
Contact Information

(808) 261-0740 Ext. 116; izander@esciencei.com

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☒ Electronic ☐ Audio ☐ Other (please specify): _____

☐ Check this box if you are attaching a request for waiver of fees in the public interest (see waiver information on back).

SEE BACK FOR IMPORTANT INFORMATION

TRANSMISSION VERIFICATION REPORT

TIME : 09/03/2015 09:30
NAME : ESI
FAX : 8082610749
TEL : 8082610740
SER.# : 000A6J633728

DATE,TIME	09/03 09:29
FAX NO./NAME	5867537
DURATION	00:00:23
PAGE(S)	02
RESULT	OK
MODE	STANDARD ECM

FACSIMILE TRANSMITTAL

Environmental Science International
354 Uluniu Street, Suite 304, Kailua, Hawaii 96734
(808) 261-0740 phone / (808) 261-0749 fax

❄ **THERE ARE 2 PAGES TO SEND, INCLUDING THIS PAGE.** ❄

DATE: September 03, 2015

TO: Hazard Evaluation and Emergency Response Office

ATTN: Manager

FAX NUMBER: (808) 586-7537

FROM: Iris van der Zander

To Whom It May Concern,

I would like to request copies of any records for the Kauai Petroleum Terminal located 3185 Waapa Road, Lihue Kauai (TMK No. (4) 3-2-004:016).

If you have any questions or need any more information please give me a call at 561-5357.

Mahalo,

Iris van der Zander

CONFIDENTIALITY NOTICE
The documents accompanying this fax contain information that is confidential and may be legally privileged. The information is intended for the individual or entity named on this transmittal. If you are not the intended recipient, be aware that any unauthorized disclosure, copying, distribution, or use of this information is prohibited. If you have received this fax in error, please notify us immediately by telephone so that we can arrange for the retrieval of the original documents at no cost to you.

REQUEST TO ACCESS A GOVERNMENT RECORD

DATE: 09/03/2015

TO: Hazard Evaluation & Emergency Response Office (Fax: 586-7537)

FROM: Iris van der Zander (environmental Science International, Inc.)
Name or Alias
354 Uluniu Street Ste 304, Kailua, HI 96734
Contact Information
(808)-561-5357

Although you are not required to provide any personal information, you should provide enough information to allow the agency to contact you about this request. The processing of this request may be stopped if the agency is unable to contact you. Therefore, please provide any information that will allow the agency to contact you (name or alias, telephone or fax number, mailing address, e-mail address, etc.).

I WOULD LIKE THE FOLLOWING GOVERNMENT RECORD:

Describe the government record as specifically as possible so that it can be located. Try to provide a record name, subject matter, date, location, purpose, or name of persons to whom the record refers, or other information that could help the agency identify the record. A complete and accurate description of the government record you request will prevent delays in locating the record. Attach a second page if needed.
All Records relating to the following property are requested: Kauai Petroleum Terminal, 3185 Waapa Rd., Lihue, Kauai, TMK Number (4) 3-2-004:016

I WOULD LIKE: (please check one or more of the options below)

☐ To inspect the government record.

☐ A copy of the government record: (Please check one of the options below.) See the back of this page for information about fees that you may be required to pay for agency services to process your record request. Note: Copying and transmission charges may also apply to certain options.

- ☐ Pick up at agency (date and time):_____
- ☐ Mail
- ☐ Fax (toll free and only if available)
- ☐ Other, if available (please specify):_____

☐ If the agency maintains the records in a form other than paper, please advise in which format you would prefer to have the record.

☐ Electronic ☐ Audio ☐ Other (please specify):_____

☐ Check this box if you are attaching a request for waiver of fees in the public interest (see waiver information on back).

SEE BACK FOR IMPORTANT INFORMATION

OFFICIAL USE ONLY:

_____ _____
Office Manager Date

OIP (rev. 7/29/99)

State of Hawaii
Department of Transportation
Harbors Division

REQUEST FOR INFORMATION
APPLICATION FORM

Please print or type. Complete form as thoroughly possible. Date of Application: 8/11/15

Requestor's Information	
Name: Lauren Cruz	Company Name: Environmental Science International
Address: 354 Uluniu St., Suite 304 Kailua, HI	Phone and/or E-mail 808.261-0740

Please check all that apply:

1. The requestor represents a:
☐ Harbors Division contractor / consultant ☒ Harbors Division Tenant; agent or contractor of Tenant
☐ Government agency ☐ Member of the general public

2. Information or document(s) requested (check all that apply):
☒ Computer-Aided Design and Drafting (CADD) electronic file ☒ Portable document file (PDF) ☒ GIS data
☒ Prints ☒ Correspondence ☒ Statistical data ☒ Report (Title: _____)
☐ Other (Please specify):

3. This request was submitted:
☐ In person ☐ via Fax ☐ via Mail ☒ via E-mail ☐ Other (please specify) _____

4. Project information (if known):
H.C. No. _____ Title: Unknown

5. Purpose of request:
We are conducting an Environmental Assessment for a current tenant.

6. Reproduction:
☐ Third party document copying requested Company providing service: _____

7. Requestor's Signature:
Printed Name Lauren Cruz Signature: [signature] Date: 8/11/15

8. Disclaimer / Indemnification
The recipient of the requested information is required to print and sign the applicable disclaimer/indemnification form(s) attached based on the requested information:
☑ Exhibit A - "Disclaimer/Indemnification Clause" (For all general information requested, excluding electronic CADD files)
☑ Exhibit B - "Recipient's Indemnification Clause" (For all information requested, including electronic CADD files)

Harbors Division will contact the requestor as soon as this application is processed.

THIS SECTION TO BE COMPLETED BY HARBORS DIVISION STAFF:

Submitted by : Document Request Log No. HAR-E No. _____

Printed Name	Signature	Date

Concurred by: (Section Head)

Printed Name	Signature	Date

APPROVED / DISAPPROVED by: (Branch/District Manager)

Printed Name	Signature	Date

The Branch shall notify the requestor of their approval/disapproval of this request.

expenses, damages, attorney's fees and defense cost arising out of or relating to (a) any modification, re-use and/or any other unauthorized use of DOTHs documents by Recipient or any person or entity that acquires or obtains DOTH's documents from or through the Recipient, and (b) any differences that may exist between the documents and/or electronic files and the printed hard copies of the documents, including construction documents.

I, hereby represent that I have the authority to enter into this Recipient's Indemnification Clause on behalf of Environmental Science Inter'l. I clearly understand and agree to the above terms and conditions of this Indemnification clause and disclaimer.

Lauren Cruz
PRINTED NAME

SIGNATURE

8/11/15
DATE

Its: Project Manager

RECIPIENT'S INDEMNIFICATION CLAUSE
Project Number: _____ unknown _____
Project Title: _____

I, the "Recipient" of Department of Transportation Harbors Division's Instruments of Service for the referenced project, agree to the following:

Instruments of Service
The Recipient acknowledges that Drawings, Specifications and other documents, including electronic data (Computer-Aided Design and Drafting ("CADD") files), received from Department of Transportation Harbors Division ("DOTH") for this Project are for use solely with respect to this Project. DOTH makes no warranties, either express or implied, of merchantability and fitness of DOTH's Instruments of Service for any particular purpose. DOTH's Instruments of Service shall not be used by the Recipient or others on other projects.

In no event shall DOTH be liable for indirect or consequential damages as a result of the use, reuse or modification of DOTH's Instruments of Service by the Recipient or any person or entity that acquires or obtains DOTH's Instruments of Service from or through the Recipient.

Recipient acknowledges and agrees that there are assumptions/constraints to the Computer Aided Design (CAD) base maps files provided by the STATE as follows:

1) The extent of the coordinate system change from Old Hawaiian Datum (OHD) to North American Datum of 1983 High Accuracy Reference Network (NAD 83 HARN) is limited to coordinates on three designated physical points as noted on the CAD base files notes. Each Consultant who uses the base maps shall be solely responsible to verify all coordinates and existing field conditions.

Limits of Use

Because the CADD information stored in electronic form can be modified by other parties, intentionally or otherwise, without notice or indication of said modifications, DOTH reserves the right to remove all indicia of its ownership and/or involvement in the material from each electronic medium not held in its possession.

Recipient shall retain copies of DOTH's Instruments of Service for information only. Said materials shall not be used by Recipient, or transferred to any other party for use in other projects, additions to the current project, or any other purpose for which the material was not intended.
Recipient is aware that differences may exist between these CADD/electronic files delivered and the printed hard copies of the Instruments of Service or existing conditions. DOTH makes no representation regarding the accuracy or completeness of the CADD files that Recipient receives. In the event that a conflict arises between the CADD file and the signed, sealed or stamped hard copies, the signed, sealed or stamped hard copies shall govern.

Furthermore, Recipient agrees that Recipient is solely responsible for determining if any conflict exists. Under no circumstances shall the Recipient who received DOTH's CADD base maps and then uses it, be relieved of its own duty to fully comply with the contract documents, including, and without

Howard West

From: Dean.Watase@hawaii.gov
Sent: Thursday, October 08, 2015 1:37 PM
To: Howard West
Cc: Calvert.JT.Chun@hawaii.gov; Patti.E.Miyashiro@hawaii.gov; Robert.Crowell@hawaii.gov; Carter.Luke@hawaii.gov; Arnold.Liu@hawaii.gov; Robert Chong; Sandra.C.Rossetter@hawaii.gov
Subject: Kauai Petroleum Internal Draft EA

Hi Howard,

Understanding that we want to transmit the Draft EA to OEQC by October 28, I'm providing some initial comments for your consideration. There may be additional comments forthcoming.

GENERAL COMMENTS:

1. Transfer of ownership history. I think it would be beneficial to provide an brief overview of the change in ownership over the years.

2. Is there any ESA Phase I or II information for the area within the terminal?

SPECIFIC COMMENTS:

1. Page ES-5 and Page 4-11, Section 4.4.2. Migratory birds is a major issue on Kauai. If it is technically or operationally feasible, may want to consider strengthening the description of light fixtures to include "shielded and downward oriented". Bob Crowell is probably better versed in this issue so he may have additional insights.

2. Page 1-1, Section 1 and Page 2-1, Section 2.1. Clarification to the statement about who owns harbor lands. The State of Hawaii owns the lands (side note, I believe DOT Highways owns the right-of-ways so they are unique in that regard). Harbors manages and controls these lands through Governor's Executive Orders.

SECTION 1 – GENERAL DESCRIPTION

This report describes the Environmental Assessment [EA] performed by Environmental Science International, Inc. [ESI], on behalf of Kauai Petroleum Company, Ltd. [Kauai Petroleum], for the Kauai Petroleum Fuel Terminal, which is located at Nawiliwili Harbor in Nawiliwili, Kauai, hereinafter referred to as the "Terminal" (Figure 1). The ~~Terminal~~ is owned by the State of Hawaii ~~Department of Transportation [DOT] Harbors Division~~ and is identified by the County of Kauai Property Assessment Division as Tax Map Key [TMK] No. (4) 3-2-004:016 (Figure 2). It is located on land zoned as urban (State Land Use Commission [SLUC], 2000) (Figure 3).

"...land..."

The Terminal occupies 1.3154 acres of land owned by ~~DOT Harbors Division~~. It is bounded on the north by the Tomra Recycling Network facility, on the east by Kanoa Street, on the south by Waapa Road, and on the west by the former Lihue Sugar Plantation molasses storage facility property, which presently is a vacant parcel following the recent removal of the molasses tanks and associated structures (Figure 4). The DOT Harbors Division Pier 2 shed is across Waapa Road from the Terminal. The Matson overseas cargo container yard is across Kanoa Street.

3. Page 1-8, Section 1.5.2. I understand that ethanol may not be required as a gas additive starting next year? If yes, please update that ethanol may not be needed/used.

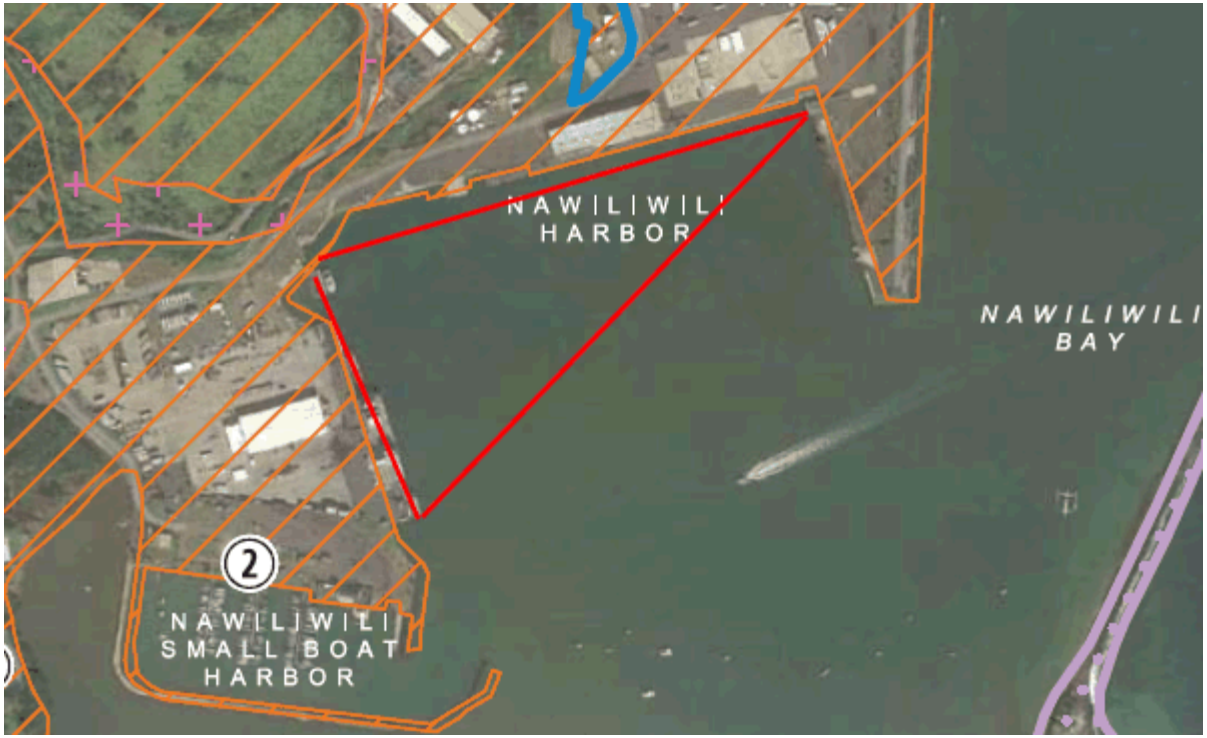
1.5.2.1 General Description of Fuel Additives

The ethanol additive used at the Terminal consists of 90 to 95 percent ethanol mixed with gasoline and other petroleum hydrocarbons. The HiTEC fuel additive consists of a mixture of a proprietary chemical compound (a complex amine), naphtha, and other petroleum hydrocarbons. The diesel fuel consists primarily of polymers with up to 40 percent petroleum hydrocarbons. The diesel fuel dye consists of 68 percent Solvent Red 164 (an azo dye) mixed with petroleum hydrocarbons.

4. Page 5-10, Section 5.6.1. I believe Nawiliwili Harbor is a secured facility, so the red triangle area shown below is off limits to the public. Recreational activities occur outside this area. Bob should be able to clarify this statement.

5.6.1 Existing Recreational Activities and Areas

Nawiliwili Harbor is an active commercial harbor. Recreational activities in the harbor include canoe paddling and fishing. Recreational activities outside the breakwater include fishing, boating, and surfing. There is active beach recreation at Kalapaki Beach. The Kauai Athletic Club is approximately 430 feet northwest of the Terminal and Nawiliwili Park is located approximately 980 feet northeast of the Terminal. The Nawiliwili Small Boat Harbor is more than 2,000 feet southwest from the Terminal.



5. Page 5-10, Section 5.6.2. Correction to the text. The 2025 Master Plan was produced by DOT Harbors.

5.6.2 Potential Impacts to Recreational Activities and Areas

The Terminal has not had an adverse impact on recreational activities in the harbor area and future improvements to the Terminal will not have an adverse impact on current recreational activities. As stated in the Kauai Commercial Harbors 2025 Master Plan (~~County of Kauai~~, 1997), the Nawiliwili Harbor area and the area surrounding the Terminal have been designated for future industrial development (DOT, 2001).

Should be DOT Harbors

6. Page 6-1, Section 6.1. Clarification to the statement is needed. DOT Harbors looks at capacity from two perspectives: yard and berth. From the yard capacity

perspective, I believe Nawiliwili has ample yard space. From the berth capacity perspective, Nawiliwili may be closer to capacity. Also, perhaps reference should be made to 'vessel' traffic below, i.e., vessel traffic will worsen.

6.1 TRANSPORTATION

Nawiliwili Harbor serves as the primary commercial harbor for Kauai and currently handles approximately 90 percent of all cargo transported to or leaving Kauai (Towill, 2015). Cruise ships arrive at Pier 2 and the cruise market is anticipated to grow. Freight tonnage is expected to increase approximately 20 percent by 2035 (Towill, 2015). Kauai's existing harbors appear to be at capacity and budget-constrained (Carter & Burgess, Inc. [Carter & Burgess], 2002). As a result, it is predicted that traffic associated with Nawiliwili Harbor will worsen and will have an economic impact on freight operations. Therefore it is essential that changes at the Terminal are analyzed in the light of traffic impact.

7. Page 1-4, Section 1.4.2 and Page 6-2, Section 6.1.2. Seems counter-intuitive that truck volume would remain the same despite the increased storage capacity. Suggest elaborating on this statement to support it.

6.1.2 Potential Impacts to Transportation Infrastructure and Mitigation

The heavy truck traffic associated with the Terminal is minimal, averaging 19 to 23 trucks daily. No increase in the volume of vehicle traffic associated with the Terminal is expected to occur following installation of the future ASTs.

Side comment. Reminder to applicant to send construction drawings to Engineering Branch for review and approval.

Mahalo

.....

Dean Watase, Senior Planner
Department of Transportation, Harbors Division
79 South Nimitz Highway

Honolulu, HI 96813
(808) 587.1883

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Howard West

From: Sandra.C.Rossetter@hawaii.gov
Sent: Wednesday, October 21, 2015 4:20 PM
To: Howard West
Subject: Re: Revised Distribution List

The following are comments from PM. Please incorporate them. We have the transmittal letter prepared and ready to go. I'll call you in the morning to see if you have any questions.

Just some minor corrections to Page 7-4 under the heading "7.1.1. State of Hawaii Department of Transportation, Harbors Division":

1) Spelling of my name is Patti, not Pattie.
2) change to read at the end of the fourth line. "...and to discuss a~~n extension to the~~ new 35 year lease for the Terminal ~~for 35 years~~."

There were no additional comments.

Mahalo

Sandra Rossetter

Harbors Division | Planning Office
79 S. Nimitz Highway
Honolulu, Hawaii 96813
(808) 587- 1886

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From: Howard West <HWest@esciencei.com>
To: "Dean.Watase@hawaii.gov" <Dean.Watase@hawaii.gov>, "sandra.c.rossetter@hawaii.gov" <sandra.c.rossetter@hawaii.gov>,
Cc: "Calvert.JT.Chun@hawaii.gov" <Calvert.JT.Chun@hawaii.gov>, "Patti.E.Miyashiro@hawaii.gov" <Patti.E.Miyashiro@hawaii.gov>, Robert Chong <RChong@esciencei.com>, "russell.whang@ppetrol.com" <russell.whang@ppetrol.com>, "Harjo, David (David.Harjo@ppetrol.com)" <David.Harjo@ppetrol.com>, "Chris.Tamura@ppetrol.com" <Chris.Tamura@ppetrol.com>
Date: 10/16/2015 04:50 PM
Subject: Revised Distribution List

Dean and Sandra,

Attached is the revised distribution list. Included are the additional parties you recommended. Let me know if you find any errors or if there are other parties you may have thought of.

Mahalo,

Howard

Howard B. West, Ph.D.
President
Environmental Science International, Inc.

354 Uluniu Street, Suite 304
Kailua, Hawaii 96734

Office: 808-261-0740, Ext. 132
Cellular: 808-479-4320
Fax: 808-261-0749

hauwahine@esciencei.com

http://www.esciencei.com

[attachment "115043 DistributionList_withContactInfo_101615.docx" deleted by Sandra C Rossetter/HAR/HIDOT]

APPENDIX E

Covered Source Air Permit and Permit Application

DAVID Y. IGE
GOVERNOR OF HAWAII

KEITH YAMAMOTO
ACTING DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. Box 3378
HONOLULU, HAWAII 96801-3378

In reply, please refer to:
File:

December 10, 2014

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
(7007 2560 0002 3864 2549)

14-906E CAB
File No. 0370

Mr. Sayle Hirashima
CFO/VP
Mid Pac Petroleum, LLC
1100 Alakea Street, 8th Floor
Honolulu, Hawaii 96813

Dear Mr. Hirashima:

Subject: **Covered Source Permit (CSP) No. 0370-02-C**
Application for Initial Permit No. 0370-04
Mid Pac Petroleum, LLC
Kauai Petroleum Company, Ltd.
Petroleum Bulk Loading Terminal
Located At: 3185 Waapa Road, Lihue, Kauai
Date of Expiration: December 9, 2019

The subject covered source permit is issued in accordance with Hawaii Administrative Rules, Title 11, Chapter 60.1. The issuance of this permit is based on the plans, specifications, and information submitted as part of your initial application received on September 29, 2014, and additional information received on October 29, 2014, and October 31, 2009. A receipt for the application filing fee of $1,000.00 is enclosed.

The covered source permit is issued subject to the conditions/requirements set forth in the following Attachments:

Attachment I: Standard Conditions
Attachment IIA: Special Conditions - Petroleum Storage Tanks
Attachment IIB: Special Conditions - Tank Truck Load Rack
Attachment IIC: Special Conditions - Equipment in Gasoline Service
Attachment IID: Special Conditions - Diesel Engine Generator
Attachment II - INSIG: Special Conditions - Insignificant Activities
Attachment III: Annual Fee Requirements
Attachment IV: Annual Emissions Reporting Requirements

The following forms are enclosed for your use and submittal as required:

Compliance Certification Form
Annual Emissions Report Form: Internal Floating Roof Storage Tanks
Annual Emissions Report Form: Tank Truck Load Rack
Annual Emissions Report Form: Diesel Engine Generator
Monitoring Report Form: Internal Floating Roof Storage Tanks
Monitoring Report Form: Tank Truck Load Rack
Monitoring Report Form: Flare Hours of Operation
Monitoring Report Form: Equipment Leaks
Monitoring Report Form: Malfunctions
Monitoring Report Form: Diesel Engine Generator Hours of Operation
Monitoring Report Form: Diesel Engine Generator Fuel Certification
Monitoring Report Form: Opacity Exceedances
Excess Emissions Report Form: Equipment Leaks

The following are enclosed for your use in monitoring visible emissions:

Visible Emissions Form Requirements, State of Hawaii
Visible Emissions Form

This permit: (a) shall not in any manner affect the title of the premises upon which the equipment is to be located; (b) does not release the permittee from any liability for any loss due to personal injury or property damage caused by, resulting from or arising out of the design, installation, maintenance, or operation of the equipment; and (c) in no manner implies or suggests that the Department of Health, Clean Air Branch (herein after referred to as Department), or its officers, agents, or employees, assumes any liability, directly or indirectly, for any loss due to personal injury or property damage caused by, resulting from or arising out of the design, installation, maintenance, or operation of the equipment.

If you have any questions, please contact Mr. Darin Lum of the Clean Air Branch at (808) 586-4200.

Sincerely,

STUART YAMADA, P.E., CHIEF
Environmental Management Division

DL:nn
Enclosures

c: Logan Kastner, EHS – Kauai
CAB Monitoring Section

ATTACHMENT I: STANDARD CONDITIONS
COVERED SOURCE PERMIT NO. 0370-02-C

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

This permit is granted in accordance with the Hawaii Administrative Rules (HAR), Title 11, Chapter 60.1, Air Pollution Control, and is subject to the following standard conditions:

1. Unless specifically identified, the terms and conditions contained in this permit are consistent with the applicable requirement, including form, on which each term or condition is based.

   (Auth.: HAR §11-60.1-90)

2. This permit, or a copy thereof, shall be maintained at or near the source and shall be made available for inspection upon request. The permit shall not be willfully defaced, altered, forged, counterfeited, or falsified.

   (Auth.: HAR §11-60.1-6; SIP §11-60-11)[2]

3. This permit is not transferable whether by operation of law or otherwise, from person to person, from place to place, or from one piece of equipment to another without the approval of the Department, except as provided in HAR, Section 11-60.1-91.

   (Auth.: HAR §11-60.1-7; SIP §11-60-9)[2]

4. A request for transfer from person to person shall be made on forms furnished by the Department.

   (Auth.: HAR §11-60.1-7)

5. In the event of any changes in control or ownership of the facilities to be constructed or modified, this permit shall be binding on all subsequent owners and operators. The permittee shall notify the succeeding owner and operator of the existence of this permit and its conditions by letter, copies of which will be forwarded to the Department and the U.S. Environmental Protection Agency (EPA), Region 9.

   (Auth.: HAR §11-60.1-5, §11-60.1-7, §11-60.1-94)

6. The facility covered by this permit shall be constructed and operated in accordance with the application, and any information submitted as part of the application, for the Covered Source Permit. There shall be no deviation unless additional or revised plans are submitted to and approved by the Department, and the permit is amended to allow such deviation.

   (Auth.: HAR §11-60.1-2, §11-60.1-4, §11-60.1-82, §11-60.1-84, §11-60.1-90)

7. This permit (a) does not release the permittee from compliance with other applicable statutes of the State of Hawaii, or with applicable local laws, regulations, or ordinances, and

(b) shall not constitute, nor be construed to be an approval of the design of the covered source.

(Auth.: HAR §11-60.1-5, §11-60.1-82)

8. The permittee shall comply with all the terms and conditions of this permit. Any permit noncompliance constitutes a violation of HAR, Chapter 11-60.1 and the Clean Air Act and is grounds for enforcement action; for permit termination, suspension, reopening, or amendment; or for denial of a permit renewal application.

   (Auth.: HAR §11-60.1-3, §11-60.1-10, §11-60.1-19, §11-60.1-90)

9. If any term or condition of this permit becomes invalid as a result of a challenge to a portion of this permit, the other terms and conditions of this permit shall not be affected and shall remain valid.

   (Auth.: HAR §11-60.1-90)

10. The permittee shall not use as a defense in an enforcement action that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the terms and conditions of this permit.

    (Auth.: HAR §11-60.1-90)

11. This permit may be terminated, suspended, reopened, or amended for cause pursuant to HAR, Sections, 11-60.1-10 and 11-60.1-98, and Hawaii Revised Statutes (HRS), Chapter 342B-27, after affording the permittee an opportunity for a hearing in accordance with HRS, Chapter 91.

    (Auth.: HAR §11-60.1-3, §11-60.1-10, §11-60.1-90, §11-60.1-98)

12. The filing of a request by the permittee for the termination, suspension, reopening, or amendment of this permit, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

    (Auth.: HAR §11-60.1-90)

13. This permit does not convey any property rights of any sort, or any exclusive privilege.

    (Auth.: HAR §11-60.1-90)

14. The permittee shall notify the Department and U.S. EPA, Region 9, in writing of the following dates:

a. The **anticipated date of initial start-up** for each emission unit of a new source or significant modification not more than sixty (60) days or less than thirty (30) days prior to such date;
b. The **actual date of construction commencement** within fifteen (15) days after such date; and
c. The **actual date of start-up** within fifteen (15) days after such date.

(Auth.: HAR §11-60.1-90)

15. The permittee shall furnish, in a timely manner, any information or records requested in writing by the Department to determine whether cause exists for terminating, suspending, reopening, or amending this permit, or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Department copies of records required to be kept by the permittee. For information claimed to be confidential, the Director of Health (Director) may require the permittee to furnish such records not only to the Department but also directly to the U.S. EPA, Region 9, along with a claim of confidentiality.

(Auth.: HAR §11-60.1-14, §11-60.1-90)

16. The permittee shall notify the Department in writing, of the **intent to shut down air pollution control equipment for necessary scheduled maintenance** at least twenty-four (24) hours prior to the planned shutdown. The submittal of this notice shall not be a defense to an enforcement action. The notice shall include the following:

a. Identification of the specific equipment to be taken out of service, as well as its location and permit number;
b. The expected length of time that the air pollution control equipment will be out of service;
c. The nature and quantity of emissions of air pollutants likely to be emitted during the shutdown period;
d. Measures such as the use of off-shift labor and equipment that will be taken to minimize the length of the shutdown period; and
e. The reasons why it would be impossible or impractical to shut down the source operation during the maintenance period.

(Auth.: HAR §11-60.1-15; SIP §11-60-16)[2]

17. **Except for emergencies which result in noncompliance with any technology-based emission limitation in accordance with HAR, Section 11-60.1-16.5, in the event any emission unit, air pollution control equipment, or related equipment malfunctions or breaks down in such a manner as to cause the emission of air pollutants in violation of HAR, Chapter 11-60.1 or this permit**, the permittee shall immediately notify the Department of the malfunction or breakdown, unless the protection of personnel or public health or safety demands immediate attention to the malfunction or breakdown and makes such notification infeasible. In the latter case, the notice shall be provided as soon as

practicable. Within five (5) working days of this initial notification, the permittee shall also submit, in writing, the following information:

a. Identification of each affected emission point and each emission limit exceeded;
b. Magnitude of each excess emission;
c. Time and duration of each excess emission;
d. Identity of the process or control equipment causing the excess emission;
e. Cause and nature of each excess emission;
f. Description of the steps taken to remedy the situation, prevent a recurrence, limit the excessive emissions, and assure that the malfunction or breakdown does not interfere with the attainment and maintenance of the National Ambient Air Quality Standards and state ambient air quality standards;
g. Documentation that the equipment or process was at all times maintained and operated in a manner consistent with good practice for minimizing emissions; and
h. A statement that the excess emissions are not part of a recurring pattern indicative of inadequate design, operation, or maintenance.

The submittal of these notices shall not be a defense to an enforcement action.

(Auth.: HAR §11-60.1-16; SIP §11-60-16)[2]

18. The permittee may request confidential treatment of any records in accordance with HAR, Section 11-60.1-14.

(Auth.: HAR §11-60.1-14, §11-60.1-90)

19. This permit shall become invalid with respect to the authorized construction if construction is not commenced as follows:

a. Within eighteen (18) months after the permit takes effect, is discontinued for a period of eighteen (18) months or more, or is not completed within a reasonable time.
b. For phased construction projects, each phase shall commence construction within eighteen (18) months of the projected and approved commencement dates in the permit. This provision shall be applicable only if the projected and approved commencement dates of each construction phase are defined in Attachment II, Special Conditions, of this permit.

(Auth.: HAR §11-60.1-9, §11-60.1-90)

20. The Department may extend the time periods specified in Standard Condition No. 19 upon a satisfactory showing that an extension is justified. Requests for an extension shall be submitted in writing to the Department.

(Auth.: HAR §11-60.1-9, §11-60.1-90)

21. The permittee shall submit fees in accordance with HAR, Chapter 11-60.1, Subchapter 6.

    (Auth.: HAR §11-60.1-90)

22. All certifications shall be in accordance with HAR, Section 11-60.1-4.

    (Auth.: HAR §11-60.1-4, HAR §11-60.1-90)

23. The permittee shall allow the Director, the Regional Administrator for the U.S. EPA and/or an authorized representative, upon presentation of credentials or other documents required by law:

    a. To enter the premises where a source is located or emission-related activity is conducted, or where records must be kept under the conditions of this permit and inspect at reasonable times all facilities, equipment, including monitoring and air pollution control equipment, practices, operations, or records covered under the terms and conditions of this permit and request copies of records or copy records required by this permit; and
    b. To sample or monitor at reasonable times substances or parameters to ensure compliance with this permit or applicable requirements of HAR, Chapter 11-60.1.

    (Auth.: HAR §11-60.1-11, §11-60.1-90)

24. Within thirty (30) days of **permanent discontinuance of the construction, modification, relocation, or operation of a covered source covered by this permit**, the discontinuance shall be reported in writing to the Department by a responsible official of the source.

    (Auth.: HAR §11-60.1-8; SIP §11-60-10)[2]

25. Each permit renewal application shall be submitted to the Department and the U.S. EPA, Region 9, no less than twelve (12) months and no more than eighteen (18) months prior to the permit expiration date. The Director may allow a permit renewal application to be submitted no less than six (6) months prior to the permit expiration date, if the Director determines that there is reasonable justification.

    (Auth.: HAR §11-60.1-101, 40 CFR §70.5(a)(1)(iii))[1]

26. The terms and conditions included in this permit, including any provision designed to limit a source's potential to emit, are federally enforceable unless such terms, conditions, or requirements are specifically designated as not federally enforceable.

    (Auth.: HAR §11-60.1-93)

27. The compliance plan and compliance certification submittal requirements shall be in accordance with HAR, Sections 11-60.1-85 and 11-60.1-86. As specified in HAR,

Section 11-60.1-86, the compliance certification shall be submitted to the Department and the U.S. EPA, Region 9, once per year, or more frequently as set by any applicable requirement.

(Auth.: HAR §11-60.1-90)

28. **Any document (including reports) required to be submitted by this permit shall be certified as being true, accurate, and complete by a responsible official in accordance with HAR, Sections 11-60.1-1 and 11-60.1-4, and shall be mailed to the following address:**

Clean Air Branch
Environmental Management Division
Hawaii Department of Health
919 Ala Moana Boulevard, Room 203
Honolulu, HI 96814

Upon request and as required by this permit, all correspondence to the State of Hawaii Department of Health associated with this Covered Source Permit shall have duplicate copies forwarded to:

Chief
Permits Office, (Attention: Air-3)
Air Division
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street
San Francisco, CA 94105

(Auth.: HAR §11-60.1-4, §11-60.1-90)

29. To determine compliance with submittal deadlines for time-sensitive documents, the postmark date of the document shall be used. If the document was hand-delivered, the date received ("stamped") at the Clean Air Branch shall be used to determine the submittal date.

(Auth.: HAR §11-60.1-5, §11-60.1-90)

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[1]The citations to the Code of Federal Regulations (CFR) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the CFR. Due to the integration of the preconstruction and operating permit requirements, permit conditions may incorporate more stringent requirements than those set forth in the CFR.

[2]The citations to the State Implementation Plan (SIP) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the SIP.

ATTACHMENT IIA: SPECIAL CONDITIONS
PETROLEUM STORAGE TANKS
COVERED SOURCE PERMIT NO. 0370-02-C

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

In addition to the standard conditions of the Covered Source Permit, the following special conditions shall apply to the permitted facility:

Section A. Equipment Description

1. Attachment IIA of this permit encompasses the following petroleum storage tanks and associated appurtenances:

   a. Tank No. 1 – 7,300 barrel internal floating roof petroleum storage tank;
   b. Tank No. 4 – 7,500 barrel internal floating roof petroleum storage tank; and
   c. Tank No. 9 – 3,100 barrel internal floating roof petroleum storage tank.

   (Auth.: HAR §11-60.1-3)

2. The permittee shall attach an identification tag or name plate on each petroleum storage tank, with the tank identification no. The identification tag or name plate shall be permanently displayed on the equipment in a conspicuous location.

   (Auth.: HAR §11-60.1-5)

Section B. Applicable Federal Regulations

1. Petroleum Storage Tank Nos. 1, 4, and 9

   The petroleum storage tanks are subject to the provisions of the following federal regulations when storing gasoline:

   a. 40 Code of Federal Regulations (CFR) Part 63, National Emission Standards for Hazardous Air Pollutants for Source Categories, Subpart A, General Provisions; and
   b. 40 CFR Part 63, Subpart BBBBBB, National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-174; 40 CFR §63.1, §63.11081)[1]

2. The permittee shall comply with all applicable requirements of the standards listed above, including all emission limits, notification, testing, monitoring, and reporting requirements. The major requirements of these standards are detailed in the special conditions of this permit.

   (Auth.: HAR §11-60.1-3, §11-60.1-90)

Section C. Operational Limitations

1. Construction and Operation (Tank Nos. 1, 4, and 9)

   The petroleum storage tanks shall be equipped with an internal floating roof and meet the following specifications:

   a. The true vapor pressure of the volatile organic liquid (VOL) stored inside the petroleum storage tanks shall be maintained below eleven (11) pounds per square inch absolute (psia) at all times;
   b. The petroleum storage tanks shall meet the following requirements when storing gasoline. Equip each internal floating roof gasoline storage tank according to the requirements of 40 CFR §60.112b(a)(1), except for the secondary seal requirements under 40 CFR §60.112b(a)(1)(ii)(B) and the requirements in 40 CFR §60.112b(a)(1)(iv) through (ix); and
   c. The permittee shall be in compliance with the applicable requirements specified in Attachment IIA, Special Condition No. C.1.b, for the internal floating roof storage tanks at the first degassing and cleaning activity after January 10, 2011, or by January 10, 2018, whichever is first.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-174; 40 CFR §63.11087)[1]

Section D. Monitoring and Recordkeeping Requirements

1. Records

   All records, including support information, shall be maintained for at least five (5) years from the date of the monitoring sample, measurement, test, report, or application. Support information includes all maintenance, inspection, and repair records, and copies of all reports required by this permit. These records shall be true, accurate, and maintained in a permanent form suitable for inspection and made available to the Department or its representative(s) upon request.

   (Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

2. The permittee shall maintain and operate a tank gauging system for each petroleum storage tank to monitor the throughput of petroleum product for the purpose of calculating annual emissions.

   (Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90)

3. Inspections (Tank Nos. 1, 4, and 9)

   Internal floating roof storage tank inspections of the floating roof systems shall be performed according to the requirements of 40 CFR §60.113b(a).

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-174; 40 CFR §63.11092)[1]

4. Records (Tank Nos. 1, 4, and 9)

   When storing gasoline, the permittee shall keep records for each gasoline storage tank in accordance with 40 CFR §60.115b. For each petroleum storage tank, the following records shall also be maintained at the facility:

   a. Records showing the dimensions (feet) of the storage tanks and the analysis showing the capacity (gallons or barrels) of the storage tanks shall be maintained for the life of the tank;
   b. Type of seal(s);
   c. Type of VOL stored, the period of storage, and the maximum true vapor pressure (psia) of the VOL stored during the respective storage period. Determination of the maximum true vapor pressure shall be done in accordance with 40 CFR §60.116b(e). The method used to determine the maximum true vapor pressure shall be identified in the records; and
   d. Each inspection and corrective action performed; including records of the storage tank identification no., the date the tank was inspected, the observed condition of each component of the control equipment (seals, internal floating roof, fittings, etc.), and any repairs made.

   (Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90, §11-60.1-174, 40 CFR §63.11094)[1]

5. Malfunctions

   The permittee shall keep the following records for malfunctions:

   a. Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment.
   b. Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR §63.11085(a), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-174; 40 CFR §63.11094)[1]

Section E. Notification and Reporting Requirements

1. Standard Condition Reporting

   Notification and reporting pertaining to the following events shall be done in accordance with Attachment I, Standard Condition Nos. 17 and 24, respectively:

   a. Emissions of air pollutants in violation of HAR, Chapter 11-60.1 or this permit (excluding technology-based emission exceedances due to emergencies); and
   b. Permanent discontinuance of construction, modification, relocation, or operation of the facility covered by this permit.

   (Auth.: HAR §11-60.1-8, §11-60.1-15, §11-60.1-16, §11-60.1-90)

2. Deviations

   The permittee shall report **within five (5) working days** any deviations from permit requirements, including those attributed to upset conditions, the probable cause of such deviations, and any corrective actions or preventive measures taken. Corrective actions may include a requirement for testing, or more frequent monitoring, or could trigger implementation of a corrective action plan.

   (Auth.: HAR §11-60.1-3, §11-60.1-15, §11-60.1-16, §11-60.1-90)

3. Compliance Certification

   a. During the permit term, the permittee shall submit at least **annually** to the Department and U.S. EPA, Region 9, the attached **Compliance Certification Form** pursuant to HAR, Subsection 11-60.1-86. The permittee shall indicate whether or not compliance is being met with each term or condition of this permit. The compliance certification shall include, at a minimum, the following information:

      i. The identification of each term or condition of the permit that is the basis of the certification;
      ii. The compliance status;
      iii. Whether compliance was continuous or intermittent;
      iv. The methods used for determining the compliance status of the source currently and over the reporting period;
      v. Any additional information indicating the source's compliance status with any applicable enhanced monitoring and compliance certification, including the requirements of Section 114(a)(3) of the Clean Air Act or any applicable monitoring and analysis provisions of Section 504(b) of the Clean Air Act;
      vi. Brief description of any deviations including identifying as possible exceptions to compliance any periods during which compliance is required and which the excursion or exceedances as defined in 40 CFR 64 occurred; and
      vii. Any additional information as required by the Department, including information to determine compliance.

b. The compliance certification shall be submitted within **sixty (60) days after** the end of each calendar year and shall be signed and dated by a responsible official.
c. Upon the written request of the permittee, the deadline for submitting the compliance certification may be extended, if the Department determines that reasonable justification exists for the extension.

(Auth.: HAR §11-60.1-4, §11-60.1-86, §11-60.1-90)

4. Notifications

a. The permittee shall submit to the Department and U.S. EPA, Region 9, a Notification of Compliance Status as specified in 40 CFR §63.9(h). The Notification of Compliance Status must specify which compliance options included in Table 1 of 40 CFR Part 63, Subpart BBBBBB, is used to comply with Subpart BBBBBB. The Notification of Compliance Status shall be submitted in accordance with Attachment IIA, Special Condition No. E.3.
b. The permittee shall submit to the Department and U.S. EPA, Region 9, additional notifications specified in 40 CFR §63.9, as applicable.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, §11-60.1-174; 40 CFR §63.11093)[1]

5. Annual Emissions

a. As required by Attachment IV and in conjunction with the requirements of Attachment III, Annual Fee Requirements, the permittee shall submit **annually** the total tons per year emitted of each regulated air pollutant including hazardous air pollutants (HAPs). The reporting of annual emissions is due **within sixty (60) days** following the end of each calendar year. Completion and submittal of the **Annual Emissions Form: Internal Floating Roof Storage Tanks**, shall be used for reporting.
b. Upon the written request of the permittee, the deadline for reporting of annual emissions may be extended, if the Department determines that reasonable justification exists for the extension.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-114)

6. Monitoring Reports

The permittee shall submit **semi-annually** the following written reports to the Department and U.S. EPA, Region 9. The reports shall be submitted **within sixty (60) days after** the end of each semi-annual calendar period (January 1 - June 30 and July 1 - December 31).

a. A compliance report for Tank Nos. 1, 4, and 9. The enclosed **Monitoring Report Form: Internal Floating Roof Storage Tanks** shall be used for reporting.
b. The number, duration, and a brief description of each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. Include a description of actions taken by the permittee during a malfunction to minimize emissions in accordance with

40 CFR §63.11085(a), including actions taken to correct a malfunction. The enclosed **Monitoring Report Form: Malfunctions** shall be used for reporting.

c. Any deviations from permit requirements shall be clearly identified.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-174; 40 CFR §63.11095)[1]

Section F. Agency Notification

Any document (including reports) required to be submitted by this covered source permit shall be in accordance with Attachment I, Standard Condition No. 28.

(Auth.: HAR §11-60.1-4, §11-60.1-90)

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[1]The citations to the Code of Federal Regulations (CFR) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the CFR. Due to the integration of the pre-construction and operating permit requirements, permit conditions may incorporate more stringent requirements than those set forth in the CFR.

[2]The citations to the State Implementation Plan (SIP) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the SIP.

ATTACHMENT IIB: SPECIAL CONDITIONS
TANK TRUCK LOAD RACK
COVERED SOURCE PERMIT NO. 0370-02-C

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

In addition to the Standard Conditions of the Covered Source Permit, the following Special Conditions shall apply to the permitted facility:

Section A. Equipment Description

1. Attachment IIB of this permit encompasses the following equipment:

   a. One (1) bottom-loading petroleum tank truck load rack with four (4) to six (6) product arms and associated appurtenances; and
   b. One (1) air-assisted flare with a stack height of 32.0 feet (with shroud) located at primary location or 13.1 feet located at alternate location. Primary and alternate locations are as indicated in the covered source permit application.

   (Auth.: HAR §11-60.1-3)

2. An identification tag or nameplate shall be displayed on the equipment to show the model number, serial number, and manufacturer. The identification tag or nameplate shall be attached to the equipment in a permanent and conspicuous location.

   (Auth.: HAR §11-60.1-5)

Section B. Applicable Federal Regulations

1. The petroleum tank truck load rack and associated appurtenances are subject to the provisions of the following federal regulations when loading gasoline:

   a. 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants for Source Categories, Subpart A, General Provisions;
   b. 40 CFR Part 63, Subpart BBBBBB, National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities;
   c. 40 CFR Part 60, Standards of Performance for New Stationary Sources, Subpart A, General Provisions; and
   d. 40 CFR Part 60, Subpart XX, Standards of Performance for Bulk Gasoline Terminals.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161, §11-60.1-174; 40 CFR §60.1, §60.500, §63.1, §63.11081)[1]

2. The permittee shall comply with all applicable requirements of the standards listed above, including all emission limits, notification, testing, monitoring and reporting requirements. The major requirements of these standards are detailed in the special conditions of this permit.

   (Auth.: HAR §11-60.1-3, §11-60.1-90)

Section C. Operational Limitations

1. The maximum throughput of the petroleum tank truck load rack shall not exceed 949,000 barrels of gasoline/naphtha, 793,000 barrels of jet fuel, 219,000 barrels of diesel, and 94,900 barrels of ethanol, per any rolling twelve-month (12-month) period.

   (Auth.: HAR §11-60.1-3, §11.60.1-5, §11-60.1-90)

2. The permittee shall use submerged filling at the petroleum tank truck load rack with a submerged fill pipe that is no more than six (6) inches from the bottom of the cargo tank.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-174; 40 CFR §63.11088, Table 2)[1]

3. The total hours of operation of the flare shall not exceed 2,920 hours in any rolling twelve-month (12-month) period.

   (Auth.: HAR §11-60.1-3, §11.60.1-5, §11-60.1-90)

4. The permittee shall install, maintain, and operate the flare as an air pollution control device for the petroleum tank truck load rack.

   (Auth.: HAR §11-60.1-3, §11.60.1-5, §11-60.1-90)

5. The flare shall be connected, fully functional and operational at all times whenever the petroleum tank truck load rack is in operation loading gasoline/naphtha or ethanol. The flare shall be operated at all times when emissions of gasoline/naphtha or ethanol may be vented to it.

   (Auth.: HAR §11-60.1-3, §11.60.1-5, §11-60.1-90, §11-60.1-161; 40 CFR §60.18, §60.503)[1]

6. The flare shall be operated and maintained in accordance with the manufacturer's specifications.

   (Auth.: HAR §11-60.1-3, §11.60.1-5, §11-60.1-90)

7. The flare pilot gas shall be propane.

   (Auth.: HAR §11-60.1-3, §11.60.1-5, §11-60.1-90)

8. The flare shall be designed and operated with no visible emissions as determined by the methods specified in Attachment IIB, Special Condition No. F.4, except for periods not to exceed a total of five (5) minutes during any two (2) consecutive hours.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.18, §60.503)[1]

9. The flare shall be operated with a flame present at all times, as determined by the methods specified in Attachment IIB, Special Condition No. D.8.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.18, §60.503)[1]

10. The flare shall be used only with the net heating value of the gas being combusted being 300 Btu/scf or greater. The net heating value of the gas being combusted shall be determined by the methods specified in 40 CFR §60.18(f)(3).

    (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.18, §60.503)[1]

11. The flare shall be designed for and operated with an exit velocity less than the velocity V_{max}, as determined by the methods specified in 40 CFR §60.18(f)(6).

    (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.18, §60.503)[1]

12. The permittee shall comply with the following requirements:

    a. The petroleum tank truck loading rack shall be equipped with a vapor collection system designed to collect the total organic compounds vapors displaced from gasoline tank trucks during product loading;
    b. The emissions to the atmosphere from the vapor collection system due to the loading of liquid product into gasoline tank trucks shall not exceed thirty-five (35) milligrams of total organic compounds per liter of gasoline loaded;
    c. Each vapor collection system shall be designed to prevent any total organic compounds vapors collected at one loading rack from passing to another loading rack;
    d. Loadings of liquid product into all gasoline tank trucks shall be limited to vapor-tight gasoline tank trucks using the following procedures:

        i. The permittee shall obtain the vapor tightness documentation described in Attachment IIB, Special Condition No. D.9, for each gasoline tank truck which is loaded at the subject facility;
        ii. The permittee shall require the tank identification number to be recorded as each gasoline tank truck is loaded at the subject facility;
        iii. The permittee shall cross-check each tank identification number obtained in Attachment IIB, Special Condition No. C.12.d.ii, with the file of tank vapor tightness documentation within two (2) weeks after the corresponding tank is loaded, unless either of the following conditions is maintained:

            (1) If less than an average of one gasoline tank truck per month over the last twenty-six (26) weeks is loaded without vapor tightness documentation then the documentation cross-check shall be performed each quarter; or
            (2) If less than an average of one gasoline tank truck per month over the last fifty-two (52) weeks is loaded without vapor tightness documentation then the documentation cross-check shall be performed semiannually;

(3) If either the quarterly or semiannual cross-check reveals that these conditions were not maintained, the permittee must return to biweekly monitoring until such time as these conditions are again met.

iv. The permittee shall notify the owner or operator of each nonvapor-tight gasoline tank truck loaded at the subject facility within one (1) week of the documentation cross-check in Attachment IIB, Special Condition No. C.12.d.iii;
v. The permittee shall take steps assuring that the nonvapor-tight gasoline tank truck will not be reloaded at the subject facility until vapor tightness documentation for that tank is obtained;
vi. Alternate procedures to Attachment IIB, Special Condition Nos. C.12.d.i thru C.12.d.v, for limiting gasoline tank truck loadings may be used upon application to, and approved by, the Department.

e. The permittee shall ensure that loadings of gasoline tank trucks at the subject facility are made only into tanks equipped with vapor collection equipment that is compatible with the terminal's vapor collection system;
f. The permittee shall ensure that the terminal's and the gasoline tank truck's vapor collection systems are connected during each loading of a gasoline tank truck at the subject facility. Examples of actions to accomplish this include training drivers in the hookup procedures and posting visible reminder signs at the subject loading racks;
g. The vapor collection and liquid loading equipment shall be designed and operated to prevent gauge pressure in the delivery tank from exceeding 4,500 pascals (450 mm of water) during product loading. This level is not to be exceeded when measured by the procedures specified in Attachment IIB, Special Condition No. F.3; and
h. No pressure-vacuum vent in the bulk gasoline terminal's vapor collection system shall begin to open at a system pressure less than 4,500 pascals (450 mm of water).

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.502)[1]

Section D. Monitoring and Recordkeeping Requirements

1. Records

All records, including support information, shall be maintained for at least five (5) years from the date of the monitoring sample, measurement, test, report, or application. Support information includes all maintenance, inspection, and repair records, and copies of all reports required by this permit. These records shall be true, accurate, and maintained in a permanent form suitable for inspection and made available to the Department or its representative(s) upon request.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

2. The permittee shall maintain and operate a non-resetting volumetric flow meter to monitor and record the throughput of gasoline/naphtha, jet fuel, diesel, and ethanol at the petroleum

tank truck load rack. The non-resetting meter shall not allow the manual resetting or other manual adjustments of the meter readings. The installation of any new non-resetting meters or the replacement of any existing non-resetting meters shall be designed to accommodate a minimum of five (5) years of equipment operation, considering any operational limitations, before the meter returns to a zero reading.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90)

3. The permittee shall install, operate, and maintain a non-resetting hour meter on the flare to monitor and record the total hours of operation of the flare. The non-resetting meter shall not allow the manual resetting or other manual adjustments of the meter readings. The installation of any new non-resetting meter or the replacement of any existing non-resetting meter shall be designed to accommodate a minimum of five (5) years of equipment operation, considering any operational limitations, before the meter returns to a zero reading.

   (Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90)

4. Each calendar month, the permittee shall inspect the vapor collection system, the vapor processing system, and each loading rack handling gasoline during the loading of gasoline tank trucks for total organic compounds liquid or vapor leaks. For purposes of this paragraph, detection methods incorporating sight, sound, or smell are acceptable. Each detection of a leak shall be recorded and the source of the leak repaired within **fifteen (15) calendar days** after it is detected. For equipment in gasoline service, leaks shall be inspected and repaired in accordance with Attachment IIC, Special Condition Nos. C.1 and C.2.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.502)[1]

5. The permittee shall maintain records on the following items:

   a. Each monthly inspection performed, including the date(s) of inspections, findings, leak determination method, corrective actions taken, and the inspector's name. Inspection findings shall state whether or not leaks were detected. For each leak detected, record the location, nature, and severity of each leak;
   b. Records of all equipment replaced or repaired;
   c. The total throughputs of gasoline/naphtha, jet fuel, diesel, and ethanol loaded at the petroleum tank truck load rack on a monthly and rolling twelve-month (12-month) basis. Monthly records shall include:

      i. Date of meter reading;
      ii. Meter reading at the beginning of each month;
      iii. Total throughputs of each product for each month; and
      iv. Total throughputs of each product on a rolling twelve-month (12-month) basis.

   d. The total hours of operation of the flare on a monthly and rolling twelve-month (12-month) basis. Monthly records shall include:

i. Date of meter reading;
ii. Meter reading at the beginning of each month;
iii. Total hours of operation for each month; and
iv. Total hours of operation on a rolling twelve-month (12-month) basis.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90)

6. Malfunctions

The permittee shall keep the following records for malfunctions:

a. Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment; and
b. Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR §63.11085(a), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-174; 40 CFR §63.11094)[1]

7. The permittee shall monitor the flare to ensure that it is operated and maintained in conformance with its design.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.18, §60.503)[1]

8. The permittee shall monitor the presence of a flare pilot flame using a thermocouple or any other equivalent device to detect the presence of a flame.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.18, §60.503)[1]

9. The permittee shall maintain a tank truck vapor tightness documentation file on all gasoline tank trucks loaded at the subject facility. The file for each gasoline tank truck shall be updated at least once per year to reflect current test results as determined by 40 CFR Part 60, Appendix A, EPA Reference Method 27, Determination of Vapor Tightness of Gasoline Delivery Tank Using Pressure-Vacuum Test. This documentation file shall include, as a minimum, the following information:

a. Test title: Gasoline Delivery Tank Pressure Test - EPA Reference Method 27;
b. Tank truck owner and address;
c. Tank identification number;
d. Test location and date;
e. Tester name and signature;
f. Witnessing inspector, if any: Name, signature, and affiliation;
g. Vapor tightness repair: Nature of repair work and when performed in relation to vapor tightness testing; and

h. Test results: Test pressure, pressure or vacuum change, mm of water, time period of test, number of leaks found with instrument, and leak definition.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161, §11-60.1-174; 40 CFR §60.505, §63.11094)[1]

10. As an alternative to keeping records at the terminal of each gasoline tank truck as indicated in Attachment IIB, Special Condition No. D.9, the permittee may comply with the requirements in either paragraph a or b below:

    a. An electronic copy of each record is instantly available at the terminal.

        i. The copy of each record is an exact duplicate image of the original paper record with certifying signatures.
        ii. The Department is notified in writing that each terminal using this alternative is in compliance with paragraph a.

    b. For facilities that use a terminal automation system to prevent gasoline tank trucks that do not have valid tank truck vapor tightness documentation from loading (e.g., via a card lock-out system), a copy of the documentation is made available (e.g., via facsimile) for inspection by the Department during the course of a site visit, or within mutually agreeable time frame.

        i. The copy of each record is an exact duplicate image of the original paper record with certifying signatures.
        ii. The Department is notified in writing that each terminal using this alternative is in compliance with paragraph b.

    (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161, §11-60.1-174; 40 CFR §60.505, §63.11094)[1]

11. The permittee shall keep documentation of all notifications required per Attachment IIB, Special Condition No. C.12.d.iv on file.

    (Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, §11-60.1-161, 40 CFR §60.505)[1]

12. The permittee shall keep records of all replacements or additions of components performed on an existing vapor processing system.

    (Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, §11-60.1-161; 40 CFR §60.505)[1]

13. The permittee shall make records available **within twenty-four (24) hours** of a request by the Department or the U.S. EPA, Region 9, to document the load rack's average daily gasoline throughput.

    (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-174; 40 CFR §63.11088, 40 CFR Part 63, Subpart BBBBBB, Table 2)[1]

Section E. Notification and Reporting Requirements

1. Notification and reporting pertaining to the following events shall be done in accordance with Attachment I, Standard Condition Nos. 14, 16, 17, and 24 respectively:

    a. Anticipated date of initial start-up, actual date of construction commencement, and actual date of start-up;
    b. Intent to shut down air pollution control equipment for necessary scheduled maintenance;
    c. Emissions of air pollutants in violation of HAR, Chapter 11-60.1 or this permit (excluding technology-based emission exceedances due to emergencies); and
    d. Permanent discontinuance of construction, modification, relocation, or operation of the facility covered by this permit.

    (Auth.: HAR §11-60.1-8, §11-60.1-15, §11-60.1-16, §11-60.1-90)

2. The permittee shall report **within five (5) working days** *any deviations from permit requirements*, including those attributable to upset conditions, the probable cause of such deviations and any corrective actions or preventive measures taken. Corrective actions may include a requirement for testing, or more frequent monitoring, or could trigger implementation of a corrective action plan.

    (Auth.: HAR §11-60.1-3, §11-60.1-15, §11-60.1-16, §11-60.1-90)

3. Annual Emissions

    a. As required by Attachment IV and in conjunction with the requirements of Attachment III, Annual Fee Requirements, the permittee shall submit **annually** the total tons per year emitted of each regulated air pollutant including hazardous air pollutants (HAPs). The reporting of annual emissions is due **within sixty (60) days** following the end of each calendar year. Completion and submittal of the **Annual Emissions Form: Tank Truck Load Rack**, shall be used for reporting.
    b. Upon the written request of the permittee, the deadline for reporting of annual emissions may be extended, if the Department determines that reasonable justification exists for the extension.

    (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-114)

4. Compliance Certification

   a. During the permit term, the permittee shall submit at least **annually** to the Department and U.S. EPA, Region 9, the attached **Compliance Certification Form** pursuant to HAR, Subsection 11-60.1-86. The permittee shall indicate whether or not compliance is being met with each term or condition of this permit. The compliance certification shall include, at a minimum, the following information:

      i. The identification of each term or condition of the permit that is the basis of the certification;
      ii The compliance status;
      iii. Whether compliance was continuous or intermittent;
      iv. The methods used for determining the compliance status of the source currently and over the reporting period;
      v. Any additional information indicating the source's compliance status with any applicable enhanced monitoring and compliance certification, including the requirements of Section 114(a)(3) of the Clean Air Act or any applicable monitoring and analysis provisions of Section 504(b) of the Clean Air Act;
      vi. Brief description of any deviations including identifying as possible exceptions to compliance any periods during which compliance is required and which the excursion or exceedances as defined in 40 CFR 64 occurred; and
      vii. Any additional information as required by the Department, including information to determine compliance.

   b. The compliance certification shall be submitted within **sixty (60) days after** the end of each calendar year and shall be signed and dated by a responsible official.
   c. Upon the written request of the permittee, the deadline for submitting the compliance certification may be extended, if the Department determines that reasonable justification exists for the extension.

   (Auth.: HAR §11-60.1-4, §11-60.1-86, §11-60.1-90)

5. Notifications

   a. The permittee shall submit to the Department and U.S. EPA, Region 9, a Notification of Compliance Status as specified in 40 CFR §63.9(h). The Notification of Compliance Status shall be submitted in accordance with Attachment IIB, Special Condition No. E.4.
   b. The permittee shall submit to the Department and U.S. EPA, Region 9, additional notifications specified in 40 CFR §63.9, as applicable.

   (Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, §11-60.1-174; 40 CFR §63.11093)[1]

6. Monitoring Reports

The permittee shall submit **semi-annually** the following written reports to the Department and U.S. EPA, Region 9. The reports shall be submitted **within sixty (60) days after** the end of each semi-annual calendar period (January 1 - June 30 and July 1 - December 31).

a. The total throughputs of gasoline/naphtha, jet fuel, diesel, and ethanol loaded at the petroleum tank truck load rack. The enclosed **Monitoring Report Form: Tank Truck Load Rack** shall be used for reporting.
b. The total hours of operation of the flare. The enclosed **Monitoring Report Form: Flare Hours of Operation** shall be used for reporting.
c. Any opacity exceedances of the flare.
d. A compliance report containing the following information:

For the petroleum tank truck load rack, each loading of a gasoline tank truck for which vapor tightness documentation had not been previously obtained by the facility.

e. The number, duration, and a brief description of each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. Include a description of actions taken by the permittee during a malfunction to minimize emissions in accordance with 40 CFR §63.11085(a), including actions taken to correct a malfunction. The enclosed **Monitoring Report Form: Malfunctions** shall be used for reporting.
f. An excess emissions report containing the following information:

i. Each instance of a non-vapor-tight gasoline tank truck loading at the facility in which the permittee failed to take steps to assure that such gasoline tank truck would not be reloaded at the facility before vapor tightness documentation for that gasoline tank truck was obtained; and
ii. Each reloading of a non-vapor-tight gasoline tank truck at the facility before vapor tightness documentation for that gasoline tank truck is obtained by the facility in accordance with 40 CFR §63.11094(b).

g. Any deviations from permit requirements shall be clearly identified.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, §11-60.1-174; 40 CFR §63.11095)[1]

7. The permittee shall notify the owner or operator of each nonvapor-tight gasoline tank truck loaded at the subject facility within one (1) week after the loading has occurred as required in Attachment IIB, Special Condition No. C.12.d.iv.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, §11-60.1-161, 40 CFR §60.502)[1]

8. The permittee shall submit the manufacturer, model number, and serial number of the flare to the Department within **five (5) working days** after initial startup of the flare. The final number of product load arms and final flare location shall also be submitted at this time.

   (Auth.: HAR §11-60.1-5, §11-60.1-90)

Section F. Testing Requirements

1. **Within sixty (60) days** after achieving the maximum expected operating capacity of the petroleum tank truck load rack, but not later than **one-hundred eighty (180) days** after the initial startup of the petroleum tank truck load rack, and **annually** thereafter, the permittee shall conduct or cause to be conducted performance tests on the petroleum tank truck load rack to determine compliance with Attachment IIB, Special Condition No. C.12.g.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.503)[1]

2. Immediately before the performance test required to determine compliance with Attachment IIB, Special Condition No. C.12.g, the permittee shall use Method 21 referenced in Appendix A of 40 CFR Part 60 to monitor for leakage of vapor all potential sources in the terminal's vapor collection system equipment while a gasoline tank truck is being loaded. The permittee shall repair all leaks with readings of 10,000 ppm (as methane) or greater before conducting the performance test.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.503)[1]

3. The permittee shall determine compliance with Attachment IIB, Special Condition No. C.12.g as follows:

   a. A pressure measurement device (liquid manometer, magnehelic gauge, or equivalent instrument), capable of measuring up to five hundred (500) mm of water gauge pressure with ± 2.5 mm of water precision, shall be calibrated and installed on the terminal's vapor collection system at a pressure tap as close as possible to the connection with the gasoline tank truck.
   b. During the performance test, the pressure shall be recorded every five (5) minutes while a gasoline truck is being loaded; the highest instantaneous pressure that occurs during each loading shall also be recorded. Every loading position must be tested at least once during the performance test.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.503)[1]

4. The procedures in 40 CFR Part 60, Appendix A, Method 22 shall be used to determine the compliance of the flare with the visible emission provisions in Attachment IIB, Special

Condition No. C.8. The observation period is two (2) hours and shall be used in accordance with Method 22.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.18, §60.503)[1]

5. The tests shall be made at the expense of the permittee including providing sampling and testing facilities. The Department may monitor the tests.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161, 40 CFR §60.8)[1]

6. Any deviations from these conditions, test methods, or procedures may be cause for rejection of the test results unless such deviations are approved by the Department before the tests.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161, 40 CFR §60.8)[1]

7. **At least thirty (30) days** *prior to performing the performance test*, the permittee shall submit a written performance test plan to the Department and the U.S. EPA, Region 9, that describes the test date(s), test duration, test locations, test methods, source operation, and other parameters that may affect test results. Such a plan shall conform to U.S. EPA guidelines including quality assurance procedures. A performance test plan that does not have the approval of the Department may be grounds to invalidate any test and require a retest.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161, 40 CFR §60.8)[1]

8. **Within sixty (60) days** *after completion of the performance test*, the permittee shall submit to the Department and the U.S. EPA, Region 9, the test report which shall include the operating conditions of the petroleum tank truck loading rack at the time of the test, the summarized test results, comparative results with the permit emission limits, and other pertinent field and laboratory data.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161, 40 CFR §60.8)[1]

9. Upon written request and justification, the Department may waive the requirement for a specific annual performance test. The waiver request is to be submitted prior to the required performance test and must include documentation justifying such action. Documentation should include, but is not limited to, the results of the prior test indicating compliance by a wide margin, documentation of continuing compliance, and further that operations of the source have not changed since the previous performance test.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161, 40 CFR §60.8)[1]

Section G. Agency Notification

Any document (including reports) required to be submitted by this covered source permit shall be in accordance with Attachment I, Standard Condition No. 28.

(Auth.: HAR §11-60.1-4, §11-60.1-90)

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[1]The citations to the Code of Federal Regulations (CFR) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the CFR. Due to the integration of the pre-construction and operating permit requirements, permit conditions may incorporate more stringent requirements than those set forth in the CFR.

[2]The citations to the State Implementation Plan (SIP) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the SIP.

ATTACHMENT IIC: SPECIAL CONDITIONS
EQUIPMENT IN GASOLINE SERVICE
COVERED SOURCE PERMIT NO. 0370-02-C

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

In addition to the standard conditions of the Covered Source Permit, the following special conditions shall apply to the permitted facility:

Section A. Equipment Description

Attachment IIC of this permit encompasses each piece of equipment used in a system that transfers gasoline or gasoline vapors. Equipment under Attachment IIC is each valve, pump, pressure relief device, sampling connection system, open-ended valve or line, flange or other connector in the gasoline liquid transfer, and vapor collection systems. Equipment under Attachment IIC also includes the entire vapor processing system except for exhaust port(s) or stack(s).

(Auth.: HAR §11-60.1-3)

Section B. Applicable Federal Regulations

1. Each piece of equipment in gasoline service is subject to the provisions of Attachment IIC and the following federal regulations:

   a. 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants for Source Categories, Subpart A, General Provisions; and
   b. 40 CFR Part 63, Subpart BBBBBB, National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-174; 40 CFR §63.11081)[1]

2. The permittee shall comply with all applicable requirements of the standards listed above, including all emission limits, notification, testing, monitoring, and reporting requirements. The major requirements of these standards are detailed in the special conditions of this permit.

   (Auth.: HAR §11-60.1-3, §11-60.1-90)

Section C. Operational Limitations and Standards

1. Leak Inspection

   a. The permittee shall perform monthly leak inspections of all equipment in gasoline service. For the monthly leak inspection, detection methods incorporating sight, sound, and smell are acceptable.

b. A log book shall be used and shall be signed by the permittee at the completion of each inspection. A section of the log book shall contain a list, summary description, or diagram(s) showing the location of all equipment in gasoline service at the facility.
c. Each detection of a liquid or vapor leak shall be recorded in the log book.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-174; 40 CFR §63.11089)[1]

2. Leak Repair

a. When a leak is detected, an initial attempt at repair shall be made as soon as practicable, but no later than five (5) calendar days after the leak is detected. Repair or replacement of leaking equipment shall be completed within fifteen (15) calendar days after detection of each leak, except as provided in Attachment IIC, Special Condition No. C.2.b.
b. Delay of repair of leaking equipment will be allowed if the repair is not feasible within fifteen (15) days.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-174; 40 CFR §63.11089)[1]

Section D. Monitoring and Recordkeeping Requirements

1. Records

All records, including support information, shall be maintained for at least five (5) years from the date of the monitoring sample, measurement, test, report, or application. Support information includes all maintenance, inspection, and repair records, and copies of all reports required by this permit. These records shall be true, accurate, and maintained in a permanent form suitable for inspection and made available to the Department or its representative(s) upon request.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

2. Recordkeeping

a. The permittee shall prepare and maintain a record describing the types, identification numbers, and locations of all equipment in gasoline service. If an instrument program is implemented for leak inspections, the record shall contain a full description of the program.
b. The permittee shall record in a log book for each leak that is detected the following information:

i. The equipment type and identification number;
ii. The nature of the leak (i.e., vapor or liquid) and the method of detection (i.e., sight, sound, or smell);

iii. The date the leak was detected and the date of each attempt to repair the leak;
iv. Repair methods applied in each attempt to repair the leak;
v. "Repair delayed" and the reason for the delay if the leak is not repaired within fifteen (15) calendar days after discovery of the leak;
vi. The expected date of successful repair of the leak if the leak is not repaired within fifteen (15) days;
vii. The date of successful repair of the leak; and
viii. Inspector's name and signature.

(Auth: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, §11-60.1-174, 40 CFR §63.11094)[1]

Section E. Notification and Reporting Requirements

1. Standard Condition Reporting

Notification and reporting pertaining to the following events shall be done in accordance with Attachment I, Standard Condition Nos. 17 and 24, respectively:

a. Emissions of air pollutants in violation of HAR, Chapter 11-60.1 or this permit (excluding technology-based emission exceedances due to emergencies); and
b. Permanent discontinuance of construction, modification, relocation, or operation of the facility covered by this permit.

(Auth.: HAR §11-60.1-8, §11-60.1-15, §11-60.1-16, §11-60.1-90; SIP §11-60-10, §11-60-16)[2]

2. Deviations

The permittee shall report **within five (5) days** any deviations from the permit requirements, including those attributed to upset conditions, the probable cause of such deviations, and any corrective actions or preventive measures taken. Corrective actions may include a requirement for additional testing, more frequent monitoring, or implementation of a corrective action plan.

(Auth.: HAR §11-60.1-3, §11-60.1-15, §11-60.1-16, §11-60.1-90)

3. Compliance Certification

a. During the permit term, the permittee shall submit at least **annually** to the Department and U.S. EPA, Region 9, the attached **Compliance Certification Form** pursuant to HAR, Subsection 11-60.1-86. The permittee shall indicate whether or not compliance is being met with each term or condition of this permit. The compliance certification shall include, at a minimum, the following information:

i. The identification of each term or condition of the permit that is the basis of the certification;
ii. The compliance status;
iii. Whether compliance was continuous or intermittent;
iv. The methods used for determining the compliance status of the source currently and over the reporting period;
v. Any additional information indicating the source's compliance status with any applicable enhanced monitoring and compliance certification, including the requirements of Section 114(a)(3) of the Clean Air Act or any applicable monitoring and analysis provisions of Section 504(b) of the Clean Air Act;
vi. Brief description of any deviations including identifying as possible exceptions to compliance and periods during which compliance is required and which the excursion or exceedances as defined in 40 CFR 64 occurred; and
vii. Any additional information as required by the Department, including information to determine compliance.

b. The compliance certification shall be submitted within **sixty (60) days after** the end of each calendar year, and shall be signed and dated by a responsible official.
c. Upon the written request of the permittee, the deadline for submitting the compliance certification may be extended, if the Department determines that reasonable justification exists for the extension.

(Auth.: HAR §11-60.1-4, §11-60.1-86, §11-60.1-90)

4. Notifications

a. The permittee shall submit to the Department and U.S. EPA, Region 9, a Notification of Compliance Status as specified in 40 CFR §63.9(h). Notification of compliance status shall be submitted in accordance with Attachment IIC, Special Condition No. E.3.
b. The permittee shall submit to the Department and U.S. EPA, Region 9, additional notifications specified in 40 CFR §63.9, as applicable.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, §11-60.1-174; 40 CFR §63.9, §63.11093)[1]

5. Monitoring Reports

The permittee shall submit **semi-annually** the following written reports to the Department and U.S. EPA, Region 9. The reports shall be submitted **within sixty (60) days after** the end of each semi-annual calendar period (January 1 - June 30 and July 1 - December 31).

a. For equipment leak inspections, the number of equipment leaks not repaired within fifteen (15) days after detection. The enclosed **Monitoring Report Form: Equipment Leaks** shall be used for reporting.

b. An excess emissions report containing the following information:

For each occurrence of an equipment leak for which no repair attempt was made within five (5) days or for which repair was not completed within fifteen (15) days after detection:

i. The date on which the leak was detected;
ii. The date of each attempt to repair the leak;
iii. The reasons for the delay of repair; and
iv. The date of successful repair.

The enclosed **Excess Emissions Report Form: Equipment Leaks** shall be used for reporting.

c. Any deviations from permit requirements shall be clearly identified.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, §11-60.1-174; 40 CFR §63.11089, §63.11095)[1]

Section F. Agency Notification

Any document (including reports) required to be submitted by this covered source permit shall be done in accordance with Attachment I, Standard Condition No. 28.

(Auth.: HAR §11-60.1-4, §11-60.1-90)

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[1]The citations to the Code of Federal Regulations (CFR) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the CFR. Due to the integration of the preconstruction and operating permit requirements, permit conditions may incorporate more stringent requirements than those set forth in the CFR.

[2]The citations to the State Implementation Plan (SIP) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the SIP.

ATTACHMENT IID: SPECIAL CONDITIONS
DIESEL ENGINE GENERATOR
COVERED SOURCE PERMIT NO. 0370-02-C

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

In addition to the Standard Conditions of the Covered Source Permit, the following Special Conditions shall apply to the permitted facility:

Section A. Equipment Description

1. This permit encompasses the following equipment and related appurtenances:

   One (1) 300 bhp or less diesel engine generator (Tier 4 rated) with a stack height of 8.5 feet located at primary location or at alternate location. Primary and alternate locations are as indicated in the covered source permit application.

   (Auth.: HAR §11-60.1-3)

2. An identification tag or name plate shall be displayed on the diesel engine generator to show model no., serial no., and manufacturer. The identification tag or name plate shall be permanently attached to the diesel engine generator in a conspicuous location.

   (Auth.: HAR §11-60.1-5, §11-60.1-90)

Section B. Applicable Federal Regulations

1. The diesel engine generator is subject to the provisions of the following federal regulations:

   a. 40 CFR Part 60, Standards of Performance for New Stationary Sources, Subpart A, General Provisions;
   b. 40 CFR Part 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines;
   c. 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants for Source Categories, Subpart A, General Provisions; and
   d. 40 CFR Part 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161, 40 CFR §60.1, §60.4200, §63.1, §63.6585)[1]

2. The permittee shall comply with all applicable provisions of the standards listed above, including all emission limitations and all notification, testing, monitoring, and reporting requirements. The major requirements of these standards are detailed in the special conditions of this permit.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161, 40 CFR §60.1, §60.4200, §63.1, §63.6585)[1]

Section C. Emission and Operational Limitations, and/or Standards

1. The total hours of operation of the diesel engine generator shall not exceed 4,745 hours in any rolling twelve-month (12-month) period.

   (Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

2. The diesel engine generator shall be fired only on diesel no. 2 with a maximum sulfur content of 0.0015% by weight and a minimum cetane index of forty (40) or a maximum aromatic content of thirty-five (35) volume percent.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, 40 CFR §60.4207, §63.6590)[1]

3. For any six (6) minute averaging period, the diesel engine generator shall not exhibit visible emissions of twenty (20) percent opacity or greater, except as follows: during start-up, shut-down, or equipment breakdown, the diesel engine generator may exhibit visible emissions not greater than sixty (60) percent opacity for a period aggregating not more than six (6) minutes in any sixty (60) minutes.

   (Auth.: HAR §11-60.1-3, §11-60.1-32, §11-60.1-90)

4. The diesel engine generator shall be properly maintained and kept in good operating condition at all times with scheduled inspections and maintenance as recommended by the manufacturer; or as needed.

   (Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

Section D. Monitoring and Recordkeeping Requirements

1. The permittee shall install, operate, and maintain a non-resetting hour meter on the diesel engine generator to monitor and record the total hours of operation of the diesel engine generator. The non-resetting meter shall not allow the manual resetting or other manual adjustments of the meter readings. The installation of any new non-resetting meter or the replacement of any existing non-resetting meter shall be designed to accommodate a minimum of five (5) years of equipment operation, considering any operational limitations, before the meter returns to a zero reading.

   (Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90)

2. The permittee shall maintain records on the following items:

   a. The total hours of operation of the diesel engine generator on a monthly and rolling twelve-month (12-month) basis. Monthly records shall include:

i. Date of meter reading;
ii. Meter reading at the beginning of each month;
iii. Total hours of operation for each month; and
iv. Total hours of operation on a rolling twelve-month (12-month) basis.

b. Fuel delivery receipts showing the fuel type, sulfur content (percent by weight), cetane index or aromatic content (volume percent), date of delivery, and gallons of fuel delivered to the site for use in the diesel engine generator shall be maintained. Fuel sulfur content, cetane index, and aromatic content may be demonstrated by providing the supplier's fuel specification sheet for the type of fuel purchased and received; and

c. Records on inspections, maintenance, and any repair work conducted on the diesel engine generator. At a minimum, these records shall include: the date of the inspection/work, name and title of personnel performing inspection/work, a short description of the action and/or any such repair work, and a description of the part(s) inspected or repaired.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90)

3. Visible Emissions (VE)

The permittee shall conduct **monthly** (calendar month) VE observations for the diesel engine generator by a certified reader in accordance with 40 CFR Part 60, Appendix A, Method 9, or U.S. EPA approved equivalent methods, or alternate methods with prior written approval from the Department. For each month, two (2) consecutive six (6) minute observations shall be taken at fifteen (15) second intervals. Records shall be completed and maintained in accordance with the **Visible Emissions Form Requirements**. The monthly VE observations are not required for the months that the diesel engine generator did not operate.

(Auth.: HAR §11-60.1-3, §11-60.1-32, §11-60.1-90)

4. All records, including support information, shall be maintained for at least **five (5) years** from the date of any required monitoring, recordkeeping, testing, or reporting. Support information includes all maintenance, inspection, and repair records and copies of all reports required by this permit. These records shall be true, accurate, and maintained in a permanent form suitable for inspection and made available to the Department or their representative upon request.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

Section E. Notification and Reporting Requirements

1. Notification and reporting pertaining to the following events shall be done in accordance with Attachment I, Standard Condition Nos. 14, 17, and 24, respectively:

a. *Anticipated date of initial start-up, actual date of construction commencement, and actual date of start-up;*
b. *Emissions of air pollutants in violation of HAR, Chapter 11-60.1 or this permit (excluding technology-based emission exceedances due to emergencies); and*
c. *Permanent discontinuance of construction, modification, relocation, or operation of the facility covered by this permit.*

(Auth.: HAR §11-60.1-8, §11-60.1-15, §11-60.1-16, §11-60.1-90)

2. The permittee shall report within **five (5) working days** *any deviations from permit requirements*, including those attributable to upset conditions, the probable cause of such deviations and any corrective actions or preventative measures taken. Corrective actions may include a requirement for more frequent monitoring, or could trigger implementation of a corrective action plan.

(Auth.: HAR §11-60.1-3, §11-60.1-15, §11-60.1-16, §11-60.1-90)

3. Monitoring Reports

The permittee shall submit **semi-annually** the following written report to the Department for monitoring purposes. The report shall be submitted within **sixty (60) days** *after the end of each semi-annual calendar period (January 1 to June 30 and July 1 to December 31)* and shall include the following:

a. The total hours of operation of the diesel engine generator on a monthly and rolling twelve-month (12-month) basis. The enclosed **Monitoring Report Form: Diesel Engine Generator Hours of Operation**, shall be used for reporting;
b. The type of fuel fired, maximum sulfur content (percent by weight), minimum cetane index and maximum aromatic content (volume percent). The enclosed **Monitoring Report Form: Diesel Engine Generator Fuel Certification**, shall be used for reporting; and
c. Any opacity exceedances as determined by the required VE monitoring. Each exceedance reported shall include the date, six (6) minute average opacity reading, possible reason for exceedance, duration of exceedance, and corrective actions taken. If there are no exceedances, the permittee shall submit in writing a statement indicating that for each equipment there were no exceedances for that semi-annual period.

   The enclosed **Monitoring Report Form: Opacity Exceedances**, shall be used.

d. Any deviations from permit requirements shall be clearly identified.

(Auth.: HAR §11-60.1-3, §11-60.1-32, §11-60.1-90)

4. Annual Emissions Reports

   As required by Attachment IV and in conjunction with the requirements of Attachment III, Annual Fee Requirements, the permittee shall submit on an **annual basis** the total tons per year emitted of each regulated air pollutant, including hazardous air pollutants. The reporting of annual emissions is due within **sixty (60) days** *after the end of each calendar year.* The enclosed **Annual Emissions Report Form: Diesel Engine Generator**, shall be used in reporting.

   Upon the written request of the permittee, the deadline for reporting annual emissions may be extended if the Department determines that reasonable justification exists for the extension.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-114)

5. Compliance Certification Form

   During the permit term, the permittee shall submit at least **annually** to the Department and U.S. EPA, Region 9, the attached **Compliance Certification Form** pursuant to HAR, Section 11-60.1-86. The permittee shall indicate whether or not compliance is being met with each term or condition of this permit. The compliance certification shall include, at a minimum, the following information:

   a. The identification of each term or condition of the permit that is the basis of the certification;
   b. The compliance status;
   c. Whether compliance was continuous or intermittent;
   d. The methods used for determining the compliance status of the source currently and over the reporting period;
   e. Any additional information indicating the source's compliance status with any applicable enhanced monitoring and compliance certification including the requirements of Section 114(a)(3) of the Clean Air Act or any applicable monitoring and analysis provisions of Section 504(b) of the Clean Air Act;
   f. Brief description of any deviations including identifying as possible exceptions to compliance any periods during which compliance is required and in which the excursion or exceedances as defined in 40 CFR 64 occurred; and
   g. Any additional information as required by the Department including information to determine compliance.

   The compliance certification shall be submitted **within sixty (60) days** after the end of each calendar year, and shall be signed and dated by a responsible official.

Upon written request of the permittee, the deadline for submitting the compliance certification may be extended, if the Department determines that reasonable justification exists for the extension.

(Auth.: HAR §11-60.1-4, §11-60.1-86, §11-60.1-90)

6. Initial Notification

   The permittee shall submit to the Department and U.S. EPA Region 9, an initial notification of applicability within 120 days after initial startup of the diesel engine generator. The notification shall include the information in 40 CFR §63.9(b)(2)(i) through (v), and a statement that the diesel engine generator has no additional requirements and an explanation of the basis of the exclusion.

   (Auth.: HAR §11-60.1-3, §11-60.1-90; 40 CFR §60.4214, §63.6645)[1]

7. The permittee shall submit the manufacturer, model number, and serial number of the diesel engine generator to the Department within **five (5) working days** after initial startup of the diesel engine generator. The final location of the diesel engine generator shall also be submitted at this time.

   (Auth.: HAR §11-60.1-5, §11-60.1-90)

Section F. Agency Notification

Any document (including reports) required to be submitted by this permit shall be done in accordance with Attachment I, Standard Condition No. 28.

(Auth.: HAR §11-60.1-4, §11-60.1-90)

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[1]The citations to the Code of Federal Regulations (CFR) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the CFR. Due to the integration of the preconstruction and operating permit requirements, permit conditions may incorporate more stringent requirements than those set forth in the CFR.

[2]The citations to the State Implementation Plan (SIP) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the SIP.

ATTACHMENT II - INSIG: SPECIAL CONDITIONS
INSIGNIFICANT ACTIVITIES
COVERED SOURCE PERMIT NO. 0370-02-C

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

In addition to the Standard Conditions of the Covered Source Permit, the following Special Conditions shall apply to the permitted facility:

Section A. Equipment Description.

This attachment encompasses insignificant activities listed in HAR, §11-60.1-82(f) and (g) for which provisions of this permit and HAR, Subchapter 2, General Prohibitions apply.

(Auth.: HAR §11-60.1-3)

Section B. Operational Limitations.

1. The permittee shall take measures to operate applicable insignificant activities in accordance with the provisions of HAR, Subchapter 2 for visible emissions, fugitive dust, incineration, process industries, sulfur oxides from fuel combustion, storage of volatile organic compounds, volatile organic compound water separation, pump and compressor requirements, and waste gas disposal.

   (Auth.: HAR §11-60.1-3, §11-60.1-82, §11-60.1-90)

2. The Department may at any time require the permittee to further abate emissions if an inspection indicates poor or insufficient controls.

   (Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-82, §11-60.1-90)

Section C. Monitoring and Recordkeeping Requirements.

1. The Department reserves the right to require monitoring, recordkeeping, or testing of any insignificant activity to determine compliance with the applicable requirements.

   (Auth.: HAR §11-60.1-3, §11-60.1-90)

2. All records, including support information, shall be maintained for at least **five (5) years** from the date of any required monitoring, recordkeeping, testing, or reporting. Support information includes all maintenance, inspection, and repair records and copies of all reports required by this permit. These records shall be true, accurate, and maintained in a permanent form suitable for inspection and made available to the Department or their representative upon request.

   (Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

Section D. Notification and Reporting.

Compliance Certification

During the permit term, the permittee shall submit at least **annually** to the Department and U.S. EPA, Region 9, the attached **Compliance Certification Form**, pursuant to HAR, Section 11-60.1-86. The permittee shall indicate whether or not compliance is being met with each term or condition of this permit. The compliance certification shall be submitted **within sixty (60) days** *after the end of each calendar year*, and shall be signed and dated by a responsible official. The compliance certification shall include at a minimum the following information:

1. The identification of each term or condition of the permit that is the basis of the certification;
2. The compliance status;
3. Whether compliance was continuous or intermittent;
4. The methods used for determining the compliance status of the source currently and over the reporting period;
5. Any additional information indicating the source's compliance status with any applicable enhanced monitoring and compliance certification including the requirements of Section 114(a)(3) of the Clean Air Act or any applicable monitoring and analysis provisions of Section 504(b) of the Clean Air Act;
6. Brief description of any deviations including identifying as possible exceptions to compliance and periods during which compliance is required and which the excursion or exceedances as defined in 40 CFR 64 occurred; and
7. Any additional information as required by the Department including information to determine compliance.

Upon written request of the permittee, the deadline for submitting the compliance certification may be extended, if the Department determines that reasonable justification exists for the extension.

In lieu of addressing each emission unit as specified in the **Compliance Certification Form**, the permittee may address insignificant activities as a single unit provided compliance is met with all applicable requirements. If compliance is not totally attained, the permittee shall identify the specific insignificant activity and provide the details associated with the noncompliance.

(Auth.: HAR §11-60.1-4, §11-60.1-86, §11-60.1-90

Section E. Agency Notification.

Any document (including reports) required to be submitted by this Covered Source Permit shall be done in accordance with Attachment I, Standard Condition No. 28.

(Auth.: HAR §11-60.1-4, §11-60.1-90)

ATTACHMENT III: ANNUAL FEE REQUIREMENTS
COVERED SOURCE PERMIT NO. 0370-02-C

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

The following requirements for the submittal of annual fees are established pursuant to Hawaii Administrative Rules (HAR), Title 11, Chapter 60.1, Air Pollution Control. Should HAR, Chapter 60.1 be revised such that the following requirements are in conflict with the provisions of HAR, Chapter 60.1, the permittee shall comply with the provisions of HAR, Chapter 60.1:

1. Annual fees shall be paid in full:

   a. Within **one-hundred twenty (120) days** after the end of each calendar year; and
   b. Within **thirty (30) days** after the permanent discontinuance of the covered source.

2. The annual fees shall be determined and submitted in accordance with Hawaii Administrative Rules, Chapter 11-60.1, Subchapter 6.

3. The annual emissions data for which the annual fees are based shall accompany the submittal of any annual fees and be submitted on forms furnished by the Department of Health.

4. The annual fees and the emission data shall be mailed to:

Clean Air Branch
Environmental Management Division
Hawaii Department of Health
919 Ala Moana Boulevard, Room 203
Honolulu, HI 96814

ATTACHMENT IV: ANNUAL EMISSIONS REPORTING REQUIREMENTS
COVERED SOURCE PERMIT NO. 0370-02-C

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the nature and amounts of emissions.

1. Complete the attached form(s):

   Annual Emissions Report Form: Internal Floating Roof Storage Tanks
   Annual Emissions Report Form: Tank Truck Load Rack
   Annual Emissions Report Form: Diesel Engine Generator

2. The reporting period shall be from January 1 to December 31 of each year. All reports shall be submitted to the Department of Health within **sixty (60) days** after the end of each calendar year and shall be mailed to the following address:

   Clean Air Branch
   Environmental Management Division
   Hawaii Department of Health
   919 Ala Moana Boulevard, Room 203
   Honolulu, HI 96814

3. The permittee shall retain the information submitted, including all emission calculations. These records shall be in a permanent form suitable for inspection, retained for a minimum of five (5) years, and made available to the Department of Health upon request.

4. Any information submitted to the Department of Health without a request for confidentiality shall be considered public record.

5. In accordance with HAR, Section 11-60.1-14, the permittee may request confidential treatment of specific information, including information concerning secret processes or methods of manufacture, by submitting a written request to the Director and clearly identifying the specific information that is to be accorded confidential treatment.

COMPLIANCE CERTIFICATION FORM
COVERED SOURCE PERMIT NO. 0370-02-C
PAGE 1 OF ___

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the following certification at least annually, or more frequently as requested by the Department.

(Make Copies of the Compliance Certification Form for Future Use)

For Period: _____ Date: _____

Company/Facility Name: _____

Responsible Official (Print): _____

Title: _____

Responsible Official (Signature): _____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by Department of Health as public record. I further state that I will assume responsibility for the construction, modification, or operation of the source in accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, and any permit issued thereof.

COMPLIANCE CERTIFICATION FORM
COVERED SOURCE PERMIT NO. 0370-02-C
(CONTINUED, PAGE 2 OF ___)

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

The purpose of this form is to evaluate whether or not the facility was in compliance with the permit terms and conditions during the covered period. If there were any deviations to the permit terms and conditions during the covered period, the deviation(s) shall be certified as *intermittent compliance* for the particular permit term(s) or condition(s). Deviations include failure to monitor, record, report, or collect the minimum data required by the permit to show compliance. In the absence of any deviation, the particular permit term(s) or condition(s) may be certified as *continuous compliance*.

Instructions:
Please certify Sections A, B, and C below for continuous or intermittent compliance. Sections A and B are to be certified as a group of permit conditions. Section C shall be certified individually for each operational and emissions limit condition as listed in the Special Conditions section of the permit (list all applicable equipment for each condition). Any deviations shall also be listed individually and described in Section D. The facility may substitute its own generated form in verbatim for Sections C and D.

A. Attachment I, Standard Conditions

Permit term/condition	Equipment	Compliance
All standard conditions	All Equipment listed in the permit	☐ Continuous ☐ Intermittent

B. Special Conditions - Monitoring, Recordkeeping, Reporting, Testing, and INSIG

Permit term/condition	Equipment	Compliance
All monitoring conditions	All Equipment listed in the permit	☐ Continuous ☐ Intermittent
Permit term/condition	Equipment	Compliance
All recordkeeping conditions	All Equipment listed in the permit	☐ Continuous ☐ Intermittent
Permit term/condition	Equipment	Compliance
All reporting conditions	All Equipment listed in the permit	☐ Continuous ☐ Intermittent
Permit term/condition	Equipment	Compliance
All testing conditions	All Equipment listed in the permit	☐ Continuous ☐ Intermittent
Permit term/condition	Equipment	Compliance
All INSIG conditions	All Equipment listed in the permit	☐ Continuous ☐ Intermittent

COMPLIANCE CERTIFICATION FORM
COVERED SOURCE PERMIT NO. 0370-02-C
(CONTINUED, PAGE ____ OF ___)

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

C. Special Conditions - Operational and Emissions Limitations

Each permit term/condition shall be identified in chronological order using attachment and section numbers (e.g., Attachment II, B.1, Attachment IIA, Special Condition No. B.1.f, etc.). Each equipment shall be identified using the description stated in Section A of the Special Conditions (e.g., unit no., model no., serial no., etc.). Check all methods (as required by permit) used to determine the compliance status of the respective permit term/condition.

Permit term/condition	Equipment(s)	Method	Compliance
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent

(Make Additional Copies if Needed)

D. Deviations

Permit Term/ Condition	Equipment(s) / Brief Summary of Deviation	Deviation Period time (am/pm) & date (mo/day/yr)	Date of Written Deviation Report to DOH (mo/day/yr)
		Beginning: Ending:	
		Beginning: Ending:	
		Beginning: Ending:	
		Beginning: Ending:	
		Beginning: Ending:	
		Beginning: Ending:	
		Beginning: Ending:	

*Identify as possible exceptions to compliance any periods during which compliance is required and in which an excursion or exceedance as defined under 40 CFR 64 occurred.

(Make Additional Copies if Needed)

ANNUAL EMISSIONS REPORT FORM
INTERNAL FLOATING ROOF STORAGE TANKS
COVERED SOURCE PERMIT NO. 0370-02-C
(PAGE 1 OF 2)

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the nature and amounts of emissions.

For Period: _____ Date: _____

Facility Name: _____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Responsible Official (Print): _____

Title: _____

Responsible Official (Signature): _____

TANK NUMBER	1	2	4	9
TANK CAPACITY (gallons)				
TANK DIAMETER (ft)				
TANK EXTERIOR COLOR				
NO. OF TURNOVERS				
PRODUCT TYPE				
REID VAPOR PRESSURE (psia)				
TRUE VAPOR PRESSURE (psia)				
VAPOR MOLECULAR WEIGHT				
DISTILLATION SLOPE				
AVG. STORAGE TEMP. (°F)				
ANNUAL THROUGHPUT (gallons)				

ANNUAL EMISSIONS REPORT FORM
INTERNAL FLOATING ROOF STORAGE TANKS
COVERED SOURCE PERMIT NO. 0370-02-C
(CONTINUED, PAGE 2 OF 2)

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

COMPLETE THIS SHEET FOR EACH STORAGE TANK (Make Copies As Needed)

TANK NO.

DECK FITTINGS			
Access hatch (24" dia)	QTY	**Gauge-hatch/sample port**	QTY
bolted cover, gasket		Weighted mechanical, gasket	
unbolted cover, gasket		Weighted mechanical, ungasketed	
unbolted cover, no gasket		Slit fabric seal, 10% open area	
Fixed roof support column well	QTY	**Vacuum breaker**	QTY
Round pipe, ungasketed sliding cover		Weighted mechanical, ungasketed	
Round pipe, gasketed sliding cover		Weighted mechanical, gasketed	
Round pipe, flex fabric sleeve seal		**Deck drain (3" dia.)**	QTY
Built-up col., ungasketed sliding cover		Open	
Built-up col., gasketed sliding cover		90% closed	
Unslotted guide-pole and well	QTY	**Stub drain**	
Ungasketed sliding cover		**Deck leg**	QTY
Ungasketed sliding cover w/ pole sleeve		Adjustable, internal floating	
Gasketed sliding cover		Adjustable, pontoon area, ungasketed	
Gasketed sliding cover w/pole wiper		Adjustable, pontoon area, gasketed	
Gasketed sliding cover w/pole sleeve		Adjustable, pontoon area, sock	
Slotted guide-pole/sample well	QTY	Adjustable, center area, ungasketed	
Ungasketed or gasketed sliding cover		Adjustable, center area, gasketed	
Ungasketed or gasketed sliding cover w/float		Adjustable, center area, sock	
Gasketed sliding cover w/pole wiper		Adjustable, double deck roofs	
Gasketed sliding cover w/pole sleeve		**Rim vent**	QTY
Gasketed sliding cover w/float & pole wiper		Weighted mechanical, ungasketed	
Gasketed sliding cover w/float, wiper & sleeve		Weighted mechanical, gasketed	
Automatic gauge float well	QTY	**Ladder well**	QTY
unbolted cover, ungasketed		Sliding cover, ungasketed	
unbolted cover, gasket		Sliding cover, gasketed	
bolted cover, gasket			

Type of deck (check one)

___ Column-supported fixed roof with bolted deck, total length of deck seams _____ ft
___ Column-supported fixed roof with welded deck
___ Self-supporting fixed roof with bolted deck, total length of deck seams _____ ft
___ Self-supporting fixed roof with welded deck
___ Other, describe _____ total length of deck seams _____ ft

Type of rim-seal system (check all that apply)

___ Mechanical shoe seal	___ Liquid mounted seal	___ Vapor mounted seal
___ Primary only	___ Primary only	___ Primary only
___ Shoe mounted secondary	___ Weather shield	___ Weather shield
___ Rim mounted secondary	___ Rim mounted secondary	___ Rim mounted secondary

ANNUAL EMISSIONS REPORT FORM
TANK TRUCK LOAD RACK
COVERED SOURCE PERMIT NO. 0370-02-C

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

In accordance with HAR, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the nature and amounts of emissions.

(Make Copies for Additional Use)

For Reporting Period: _____ Date: _____

Company: _____

Facility Name: _____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Responsible Official (print):_____

Title and Phone Number:_____

Responsible Official (signature)_____

Report the product throughput for the reporting period in the following table:

Product	Total Throughput (barrels/yr)
Gasoline/Naphtha	
Jet Fuel	
Diesel	
Ethanol	

ANNUAL EMISSIONS REPORT FORM
DIESEL ENGINE GENERATOR
COVERED SOURCE PERMIT NO. 0370-02-C

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the nature and amounts of emissions.

(Make Copies for Future Use)

For Period: _____ Date: _____

Company/Facility Name: _____

Equipment Location: _____

Equipment Description: _____

Equipment Capacity/Rating (specify units): _____
(Units such as horsepower, kilowatt, tons/hour, etc.)

Serial/ID Nos.: _____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Responsible Official (Print): _____

Title: _____

Responsible Official (Signature): _____

TYPE OF FUEL FIRED	ANNUAL FUEL CONSUMPTION (GALLONS/YEAR)	MAXIMUM SULFUR CONTENT (% BY WEIGHT)

MONITORING REPORT FORM
INTERNAL FLOATING ROOF STORAGE TANKS
COVERED SOURCE PERMIT NO. 0370-02-C

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

In accordance with HAR, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health and U.S. EPA, Region 9, the following information semi-annually:

(Make Copies for Additional Use)

For Reporting Period: _____ Date: _____

Company: _____

Facility Name: _____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Responsible Official (print):_____

Title and Phone Number:_____

Responsible Official (signature)_____

1. Report true vapor pressure exceedances above 11 psia for the reporting period:

Tank No.	True Vapor Pressure (psia)	How Determined	Type of Fuel Stored	Period of Exceedance	Storage Temperature (°F)

2. Report a summary of tank inspection for the reporting period:

Tank No.	Inspection Date	Deficiencies/Defects Description	Date and Repair Made	Date Tank was Last Emptied

3. For the reporting period, attach the information required from 40 CFR §60.115b(a) for complying with Option 2(b) in Table 1 of 40 CFR Part 63, Subpart BBBBBB as applicable for Tank Nos. 1, 4, and 9.

4. Identify deviations from permit requirements.

MONITORING REPORT FORM
TANK TRUCK LOAD RACK
COVERED SOURCE PERMIT NO. 0370-02-C

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

In accordance with HAR, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health and U.S. EPA, Region 9, the following information semi-annually:

(Make Copies for Additional Use)

For Reporting Period: _____ Date: _____

Company: _____

Facility Name: _____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Responsible Official (print):_____

Title and Phone Number:_____

Responsible Official (signature)_____

1. Report the petroleum tank truck load rack throughput for the reporting period:

Month	Product				Product			
	Gasoline/ Naphtha (gallons)	Jet Fuel (gallons)	Diesel (gallons)	Ethanol (gallons)	Gasoline/ Naphtha Rolling 12-Months (gallons)	Jet Fuel Rolling 12-Months (gallons)	Diesel Rolling 12-Months (gallons)	Ethanol Rolling 12-Months (gallons)
January								
February								
March								
April								
May								
June								
July								
August								
September								
October								
November								
December								

2. Identify deviations from permit requirements.

MONITORING REPORT FORM
FLARE HOURS OF OPERATION
COVERED SOURCE PERMIT NO. 0370-02-C

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the following information semi-annually:

(Make Copies for Future Use)

For Period: _____ Date: _____

Company/Facility Name: _____

Equipment Location: _____

Equipment Description: _____

Equipment Capacity/Rating (specify units): _____
(Units such as horsepower, kilowatt, tons/hour, etc.)

Serial/ID Nos.: _____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Responsible Official (Print): _____

Title: _____

Responsible Official (Signature): _____

MONTH	TOTAL HOURS OF OPERATION MONTHLY BASIS	TOTAL HOURS OF OPERATION ROLLING 12-MONTH BASIS
JANUARY		
FEBRUARY		
MARCH		
APRIL		
MAY		
JUNE		
JULY		
AUGUST		
SEPTEMBER		
OCTOBER		
NOVEMBER		
DECEMBER		

MONITORING REPORT FORM
EQUIPMENT LEAKS
COVERED SOURCE PERMIT NO. 0370-02-C

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

In accordance with HAR, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health and U.S. EPA, Region 9, the following information semi-annually:

(Make Copies for Additional Use)

For Reporting Period: _____ Date: _____

Company: _____

Facility Name: _____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Responsible Official (print):_____

Title and Phone Number:_____

Responsible Official (signature)_____

For equipment leak inspection and repair performed in accordance with Attachment IIC, report each leak not repaired within fifteen (15) days after detection:

Leak Detection Date	Equipment Type and Identification Number	Reasons Why Repair not Feasible	Date Repair Completed

MONITORING REPORT FORM
MALFUNCTIONS
COVERED SOURCE PERMIT NO. 0370-02-C

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

In accordance with HAR, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health and U.S. EPA, Region 9, the following information semi-annually:

(Make Copies for Additional Use)

For Reporting Period: _____ Date: _____

Company: _____

Facility Name: _____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Responsible Official (print):_____

Title and Phone Number:_____

Responsible Official (signature)_____

Report each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emissions limitation to be exceeded:

Date	Description	Duration	Corrective Actions

MONITORING REPORT FORM
DIESEL ENGINE GENERATOR HOURS OF OPERATION
COVERED SOURCE PERMIT NO. 0370-02-C

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the following information semi-annually:

(Make Copies for Future Use)

For Period: _____ Date: _____

Company/Facility Name: _____

Equipment Location: _____

Equipment Description: _____

Equipment Capacity/Rating (specify units): _____
(Units such as horsepower, kilowatt, tons/hour, etc.)

Serial/ID Nos.: _____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Responsible Official (Print): _____

Title: _____

Responsible Official (Signature): _____

MONTH	TOTAL HOURS OF OPERATION MONTHLY BASIS	TOTAL HOURS OF OPERATION ROLLING 12-MONTH BASIS
JANUARY		
FEBRUARY		
MARCH		
APRIL		
MAY		
JUNE		
JULY		
AUGUST		
SEPTEMBER		
OCTOBER		
NOVEMBER		
DECEMBER		

MONITORING REPORT FORM
OPACITY EXCEEDANCES
COVERED SOURCE PERMIT NO. 0370-02-C

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the following information **semi-annually**:

(Make Copies for Future Use)

For Period:_____ Date:_____

Company/Facility Name:_____

Facility Name:_____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Responsible Official (Print):_____

Title:_____

Responsible Official (Signature):_____

Visible Emissions:

Report the following on the lines provided below: all date(s) and six (6) minute average opacity reading(s) which the opacity limit was exceeded during the monthly observations; or if there were no exceedances during the monthly observations, then write "no exceedances" in the comment column.

EQUIPMENT or EMISSION POINT DESCRIPTION	SERIAL/ID NO.	DATE	6 MIN. AVER. (%)	COMMENTS

EXCESS EMISSIONS REPORT FORM
EQUIPMENT LEAKS
COVERED SOURCE PERMIT NO. 0370-02-C

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

In accordance with Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health and U.S. EPA, Region 9, the following information semi-annually.

(Make Copies for Additional Use)

For Reporting Period: _____ Date: _____

Company: _____

Facility Name: _____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Responsible Official (print):_____

Title and Phone Number:_____

Responsible Official (signature)_____

For each occurrence of an equipment leak for which no repair attempt was made within five (5) days or for which repair was not completed within fifteen (15) days after detection, provide the information requested below:

Date Leak Detected	Date of Each Attempt to Repair Leak	Reasons for Delay of Repair	Date of Successful Repair

VISIBLE EMISSIONS FORM REQUIREMENTS
STATE OF HAWAII
COVERED SOURCE PERMIT NO. 0370-02-C

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

The ***Visible Emissions (VE) Form*** shall be completed **monthly** (*each calendar month*) for each equipment subject to opacity limits in accordance with 40 CFR Part 60, Appendix A, Method 9. At least **annually** (*calendar year*), VE observation shall be conducted for each equipment subject to opacity limits by a certified reader in accordance with Method 9. The VE Form shall be completed as follows:

1. VE observations shall take place during the day only. The opacity shall be noted in five (5) percent increments (e.g., 25%).

2. Orient the sun within a 140 degree sector to your back. Provide a source layout sketch on the VE Form using the symbols as shown.

3. For VE observations of stacks, stand at least three (3) stack heights but not more than a quarter mile from the stack.

4. For VE observations of fugitive emissions from crushing and screening plants, stand at least 4.57 meters (15 feet) from the visible emissions source, but not more than a quarter mile from the visible emission source.

5. Two (2) consecutive six (6) minute observations shall be taken at fifteen (15) second intervals for each stack or emission point.

6. The six (6) minute average opacity reading shall be calculated for each observation.

7. If possible, the observations shall be performed as follows:

    a. Read from where the line of sight is at right angles to the wind direction.
    b. The line of sight shall not include more than one (1) plume at a time.
    c. Read at the point in the plume with the greatest opacity (without condensed water vapor), ideally while the plume is no wider than the stack diameter.
    d. Read the plume at fifteen (15) second intervals only. Do not read continuously.
    e. The equipment shall be operating at the maximum permitted capacity.

8. If the equipment was shut-down for that period, briefly explain the reason for shut-down in the comment column.

The permittee shall retain the completed VE Forms for recordkeeping. These records shall be in a permanent form suitable for inspection, retained for a minimum of five (5) years, and made available to the Department of Health, or their representative upon request.

Any required initial and annual performance test performed in accordance with Method 9 by a certified reader shall satisfy the respective equipment's VE monitoring requirements for the month the performance test is performed.

VISIBLE EMISSIONS FORM
COVERED SOURCE PERMIT NO. 0370-02-C

Issuance Date: December 10, 2014 **Expiration Date: December 9, 2019**

(Make Copies for Future Use for Each Stack or Emission Point)

Company Name:_____

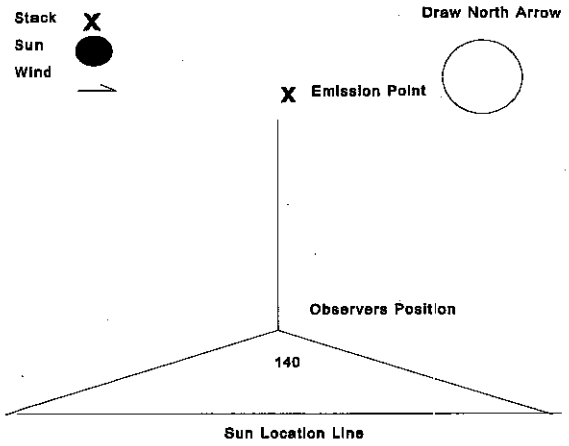
For stacks, describe equipment and fuel:_____

For fugitive emissions from crushers and screens, describe:

Fugitive emission point:_____

Plant Production (tons/hr):_____

(During observation)



Site Conditions:

Emission point or stack height above ground (ft):_____

Emission point or stack distance from observer (ft):_____

Emission color (black or white):_____

Sky conditions (% cloud cover):_____

Wind speed (mph):_____

Temperature (EF):_____

Observer Name:_____

Certified? (Yes/No):_____

Observation Date and Start Time:_____

	Seconds				
MINUTES	0	15	30	45	COMMENTS
1					
2					
3					
4					
5					
6					
Six (6) Minute Average Opacity Reading (%):					

Observation Date and Start Time:_____

	Seconds				
MINUTES	0	15	30	45	COMMENTS
1					
2					
3					
4					
5					
6					
Six (6) Minute Average Opacity Reading (%):					

September 29, 2014

Hawaii Department of Health
Environmental Management Division
Clean Air Branch
919 Ala Moana Blvd., Room 203
Honolulu, HI 96814
Attention: Mr. Darin Lum

cc: Chief (Attention: AIR-3)
Permits Office, Air Division
U.S. EPA, Region 9
75 Hawthorne Street
San Francisco, CA 94105

Subject: Application for an Initial Covered Source Permit
Kauai Terminal Upgrade Project – Phase I
Kauai Petroleum Co., Ltd. – Kauai Terminal
3185 Waapa Road, Lihue, Kauai

Dear Mr. Lum:

Mid Pac Petroleum, LLC, owner of Kauai Petroleum Co., Ltd., respectfully submits the enclosed application for an Initial Covered Source Permit. The Kauai Terminal currently operates under Noncovered Source Permit 0370-01-N. Due to changing market conditions, Mid Pac would like to upgrade the terminal to accommodate additional products and load at higher rates. The project consists of two (2) phases, the first of which is addressed in this application. We would appreciate any extra attention that the Department of Health (DOH) Clean Air Branch can give to processing this application as soon as possible.

Background

The Kauai Terminal currently receives both gasoline and jet fuel from marine barges, stores these products in four (4) above ground storage tanks, and bottom loads into outbound tank trucks at a single-bay truck loading rack. Permitted Tank Nos. 1, 4, and 9 store gasoline, while unpermitted Tank No. 2 stores jet fuel.

Current specifications in Noncovered Source Permit No. 0370-01-N:

1. Although Section A, Tables 1 and 2 both refer to diesel, Clean Air Branch exempted permitting the conversion to jet fuel service earlier this year on March 20, 2014; [1]
2. Tank No. 2 (jet fuel) is not listed in Section A, Table 1, but is footnoted as exempt from permitting;
3. Loading Arm No. 3 (jet fuel) is listed in Section A, Table 2, but the loading method has not yet been updated to reflect bottom loading instead of top loading;[2]

[1] Mid Pac received a written response letter from the Clean Air Branch dated March 20, 2014 confirming an air permit exemption for a previous project to change the existing Tank No. 2 and Loading Arm No. 3 from diesel service to jet fuel service, and increase jet fuel throughput from 143,000 bbl/yr to 350,000 bbl/yr. [DOH letter 14-171E CAB, File No. 0370].

[2] Mid Pac received a written response letter from the Clean Air Branch dated August 23, 2012 confirming an air permit exemption for a previous project to change the existing top loading diesel arm to a bottom loading diesel arm, and add a red dye injection system to the diesel loading arm [DOH letter 12-695E CAB, File No. 0307].

4. Maximum throughput of gasoline, listed in Section B, is limited to 235,800 barrels per rolling twelve-month period; and
5. Maximum throughput of jet fuel, although not listed in Section B, is limited to 350,000 barrels per year as indicated in Mid Pac's March 4, 2014 letter requesting exemption from permitting for a recent jet fuel conversion project. This throughput limit is enforceable per Standard Condition No. 5, which requires the facility to operate "in accordance with the application, and any information submitted as part of the application".

Proposed Modifications

Phase I of the project calls for 1) adding diesel, ethanol, and naphtha to the terminal's current slate of products, 2) increasing product loading rates and annual throughputs, and 3) increasing storage capacity by installing up to six (6) temporary aboveground storage tanks (ASTs). Mid Pac has planned these modifications with an understanding that the terminal will become a Covered Source as part of Phase I of the project. As demonstrated in this application, the project will not result in the terminal becoming a major source, but does trigger the requirement to install a vapor control device.

Proposed modifications associated with Phase I include the following:

1. Receive, store, and load three (3) additional products: diesel, denatured ethanol, and naphtha.
2. Change product service for Tank Nos. 1 and 9 from gasoline to gasoline/naphtha: In order to gain operational flexibility, Mid Pac would like to store these products interchangeably and therefore combine any related limits for gasoline and naphtha. Material properties for gasoline and naphtha are similar enough to merit permitting in this manner.
3. Change product service for Tank No. 4 from gasoline to gasoline/naphtha/diesel: In addition to statements above related to interchangeable storage of gasoline and naphtha, Mid Pac would like to resume diesel service at the terminal and is seeking operational flexibility to store diesel in this tank, particularly during Phase I of the project.
4. Install between four and six (4-6) temporary aboveground storage tanks (ASTs) for ethanol/diesel storage: Mid Pac would like to add this storage capacity in support of its objectives to increase loading rates and perform inline blending of ethanol to comply with industry standards. Flexibility to store diesel in these tanks during Phase I of the project is also desired. Each AST will be of steel construction and have an internal floating roof with a mechanical-shoe rim seal. They are considered temporary tanks because new construction of a larger permanent ethanol storage tank is being considered later as part of Phase II.
5. Install a concrete pad for the temporary ASTs, which are pre-manufactured and portable by design. The project calls for modifying site containment by rerouting an existing concrete block wall around the temporary ASTs. This will add secondary impervious containment capacity.
6. Install new distribution piping to receive and load products: This will include pumps, pipes, and valving to connect the temporary ASTs to the existing dock and truck loading rack.

7. Install an elevated flare to serve as a control device for gasoline, naphtha, and ethanol vapors generated at the truck loading rack. The flare will be between 13 and 32 feet in total height, have of a vapor burn capacity of approximately 10,000 cubic feet per hour, require no steam assist, and burn propane as pilot gas.
8. Install a portable diesel generator, up to 300 bhp in size, to temporarily supplement electrical power needs during Phase I of the project. The generator will include an EPA-designated Tier 4 engine and burn ultra low sulfur diesel fuel. This generator will be replaced with a permanent power supply during Phase II of the project, however a like or smaller generator may be retained indefinitely beyond Phases I & II of the project to serve as an emergency backup power supply.
9. Increase the truck rack loading rate for all products from 420 GPM to approximately 600 GPM by installing new, more efficient pumps and safety-related equipment such as additive injection equipment, new metering and control valves, and computerized automation systems. This equipment will also allow the terminal to begin inline blending of ethanol into gasoline. Between one and three (1-3) additional loading arm(s) will be added as part of these modifications to the truck loading rack.
10. Increase truck loading rack annual throughput limits: New limits proposed in this permit application were determined based on projected changes in market demand for these products along with Mid Pac's preference to avoid becoming a major source at the present time. See Table 1.

Permitting Evaluation

Additional content is included on Form S-2 and Form C-1 in this application documenting applicability and non-applicability to certain regulations.

Potential-to-emit (PTE) emissions for criteria pollutants and hazardous air pollutant (HAPs) are also included in this application in support of completing regulatory determinations.

Construction and modification activities outlined in this application are specific to Phase I of the terminal upgrade project. Additional construction and modification activities are being considered as part of Phase II of the project, and may trigger other requirements and applicable regulations. It is our understanding that the DOH Clean Air Branch will consider Phase II of our upgrade project as a separate permitting effort when details are presented at a later date.

Table 1
Kauai Terminal
Upgrade Project – Phase I
Modification Summary

Description	Pre-Project	Post-Project (Phase I)
Storage Tanks / Product Services		
Tank No. 1	Gasoline	Gasoline / Naphtha
Tank No. 2	Jet Fuel	Jet Fuel
Tank No. 4	Gasoline	Gasoline / Naphtha / Diesel
Tank No. 9	Gasoline	Gasoline / Naphtha
Temporary ASTs (4-6)	N/A	Denatured Ethanol / Diesel
Construction		
Temporary ASTs (4-6)	N/A	Internal Floating Roof
Vapor Control Device	N/A	Elevated Flare
Diesel Generator	N/A	≤ 300 bhp, Tier 4 Engine
Annual Throughput Limits		
Gasoline	235,800 bbl/yr	N/A
Gasoline / Naphtha	N/A	949,000 bbl/yr
Jet Fuel	350,000 bbl/yr	793,000 bbl/yr
Diesel	N/A	219,000 bbl/yr
Ethanol	N/A	94,900 bbl/yr
Truck Loading Rack		
Rack Pumping Rate	420 GPM	600 GPM
Equipment Upgrades	• Outdated equipment • No inline blending • 3 loading arms	• New metering • Inline blending • Additive injection • Automation systems • 4 to 6 loading arms

Supplemental Materials

All necessary application materials are included in this permit application package.

- Attachment A : Form S-1
- Attachment B : Form S-2
- Attachment C : Form C-1
- Attachment D : Form C-2
- Attachment E : Facility Plot Plan with Proposed Phase I Modifications
- Attachment F : Air Quality Assessment
- Attachment G : Potential-to-Emit Emission Calculations
- Attachment H : TANKS 4.09d Model Output

If you have any questions or need additional information, please contact Russell Whang at (808) 535-5941 or by email at Russell.Whang@MidPacPetroleum.com.

Sincerely,

Sayle Hirashima
CFO/VP
Mid Pac Petroleum, LLC
Kauai Petroleum Co., Ltd.

cc: Russell Whang
David Harjo

Attachment A

Form S-1
Standard Air Pollution Control Permit Application Form

Kauai Terminal Upgrade Project – Phase I
Application for an Initial Covered Source Permit

Mid Pac Petroleum, LLC
Kauai Petroleum Co., Ltd.
Petroleum Bulk Loading Terminal
Permit No. 0370-01-N

Mid Pac PETROLEUM

File/Application No.: _____

S-1: Standard Air Pollution Control Permit Application Form

(Covered Source Permit and Noncovered Source Permit)

State of Hawaii
Department of Health
Environmental Management Division
Clean Air Branch
P.O. Box 3378 • Honolulu, HI 96801-3378 • Phone: (808) 586-4200

1. Company Name: Mid Pac Petroleum, LLC

2. Facility Name (if different from the Company): Kauai Petroleum Co., Ltd. Petroleum Bulk Loading Terminal

3. Mailing Address: 1100 Alakea St., 8th Floor

   City: Honolulu State: HI Zip Code: 96813

   Phone Number: (808) 535-5941

4. Name of Owner/Owner's Agent: Russell Whang

   Title: Manager, Supply & Commercial Sales Phone: (808) 535-5941

   Mailing Address: 1100 Alakea St., 8th Floor

   City: Honolulu State: HI Zip Code: 96813-2833

5. Plant Site Manager/Other Contact: Chris Tamura

   Title: Kauai Terminal Supervisor Phone: (808) 635-6362

   Mailing Address: 3185 Waapa Road

   City: Lihue State: HI Zip Code: 96766

6. Permit Application Basis: (Check all applicable categories.)

   ☐ Initial Permit for a New Source ☒ Initial Permit for an Existing Source

   ☐ Renewal of Existing Permit ☐ General Permit

   ☐ Temporary Source ☐ Transfer of Permit

   ☒ Modification to a Covered Source: → Is Modification? ☒ Significant ☐ Minor ☐ Uncertain

   ☐ Modification to a Noncovered Source

7. If renewal or modification, include existing permit number: 0370-01-N

8. Does the Proposed Source require a County Special Management Area Permit? ☐ Yes ☒ No

9. Type of Source (Check One): ☒ Covered Source ☐ Covered and PSD Source

   ☐ Noncovered Source ☐ Uncertain

10. Standard Industrial Classification Code (SICC), if known: NAICS Code 424710 (formerly SIC Code 5171)

11. Proposed Equipment/Plant Location (e.g. street address): 3185 Waapa Road

City: Lihue State: HI Zip Code: 96766

UTM Coordinates (meters): East: 463250.6 North: 2427961.4

UTM Zone: 4 UTM Horizontal Datum: ☐ Old Hawaiian ☐ NAD-27 ☒ NAD-83

12. General Nature of Business: Petroleum products bulk loading operation

13. Date of Planned Commencement of Construction or Modification: ASAP

14. Is ***any*** of the equipment to be leased to another individual or entity? ☐ Yes ☒ No

15. Type of Organization: ☐ Corporation ☐ Individual Owner ☐ Partnership

☐ Government Agency (Government Facility Code: ____)

☒ Other: Limited Liability Company

Any applicant for a permit who fails to submit any relevant facts or who has submitted incorrect information in any permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional information as necessary to address any requirements that become applicable to the source after the date it filed a complete application, but prior to the issuance of the noncovered source permit or release of a draft covered source permit. (HAR §11-60.1-64 & 11-60.1-84)

RESPONSIBLE OFFICIAL (as defined in HAR §11-60.1-1)

Name (Last): Hirashima (First): Sayle (MI): ____

Title: CFO/VP Phone: (808) 535-5990

Mailing Address: 1100 Alakea Street, 8th Floor

City: Honolulu State: HI Zip Code: 96813-2833

Certification by Responsible Official (pursuant to HAR §11-60.1-4)

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record. I further state that I will assume responsibility for the construction, modification, or operation of the source in accordance with the Hawaii Administrative Rules (HAR), Title 11, Chapter 60.1, Air Pollution Control, and any permit issued thereof.

NAME (Print/Type): Sayle Hirashima

(Signature): [signature] Date: 9/29/14

FOR AGENCY USE ONLY:

File/Application No.: ____

Island: ____

Date Received: ____

Submit the following documents as part of your application:

A. The ***Emissions Units Table***, filled in as completely as possible. Use separate sheets of paper as needed. General instructions include the following:

1. Identify each **emission point** with a unique number for this plant site, consistent with emission point identification used on the location drawing and previous permits; if known, provide the SICC number. Emission points shall be identified and described in sufficient detail to establish the basis for **fees** and applicability of requirement of HAR, Chapter 11-60.1. Examples of emission point names are: heater, vent, boiler, tank, baghouse, fugitive, etc. Abbreviations may be used.
   a. For each emission point use as many lines as necessary to list regulated and hazardous air pollutant data. For hazardous air pollutants, also list the Chemical Abstracts Service number (CAS#).
   b. Indicate the emission points that discharge together for any length of time.
   c. The **Equipment Date** is the date of equipment construction, reconstruction, or modification. Provide supporting documentation.

2. State the **maximum emission rates** in terms sufficient to establish compliance with the applicable requirements and standard reference test methods. Provide all supporting emission calculations and assumptions:
   a. Include all regulated and hazardous air pollutants and air pollutants for which the source is major, as defined in HAR §11-60.1-1. Examples of regulated pollutant names are: Carbon Monoxide (CO), Nitrogen Oxides (NO_X), Sulfur Dioxide (SO_2), Volatile Organic Compounds (VOC), particulate matter (PM), and particulate less than 10 microns (PM_{10}). Abbreviations may be used.
   b. Include fugitive emissions.
   c. **Pounds per hour (#/HR)** is the maximum potential emission rate expected by applicant.
   d. **Tons per year** is the annual maximum potential emissions expected by the applicant, taking into account the typical operating schedule.

3. Describe ***Stack Source Parameters***:
   a. **Stack Height** is the height above the ground.
   b. **Direction** refers to the exit direction of stack emissions: up, down or horizontal.
   c. **Flow Rate** is the actual, not the calculated, flow rate.

4. Provide any additional information, if applicable, as follows:
   a. If combinations of different fuels are used that cause any of the stack source parameters to differ, complete one row for each possible set of stack parameters and identify each fuel in the **Equipment Description**.
   b. For a rectangular stack, indicate the length and width.
   c. Provide any information on stack parameters or any stack height limitations developed pursuant to Section 123 of the Clean Air Act.

B. A **process flow diagram** identifying **all** equipment used in the process, including the following:
1. Identify and describe each emission point.
2. Identify the locations of safety valves, bypasses, and other such devices which when activated may release air pollutants to the atmosphere.

C. A **facility location map**, drawn to a reasonable scale and showing the following:
1. The property involved and all structures on it. Identify property/fence lines plainly.
2. Layout of the facility.
3. Location and identification of the proposed emissions unit on the property.
4. Location of the property and equipment with respect to streets and all adjacent property. Show the location of all structures within 100 meters of the applicant's emissions unit. Provide the building dimensions (height, length, and width) of all structures that have heights greater than 40% of the stack height of the emissions unit.

D. Provide a description of any proposed modifications or permit revisions. Include any justification or supporting information for the proposed modifications or permit revisions.

Company Name: Kauai Petroleum Co., Ltd. Petroleum Bulk Loading Terminal File No.: _____

Location: 3185 Waapa Road, Lihue, HI 96766

(Make as many copies of this page as necessary) Page 1 of 2

EMISSIONS UNITS TABLE

Review of applications and issuance of permits will be expedited by supplying all necessary information on this table.

AIR POLLUTANT DATA: EMISSION POINTS				AIR POLLUTANT	AIR POLLUTANT EMISSION RATE PTE		UTM Zone: 4 Horizontal Datum [a]: NAD-83 Coordinates (mtrs)		STACK SOURCE PARAMETERS						
Stack No.	Unit No.	Equipment Name/ Description & SICC number	Equipment Date	Regulated/ Hazardous Air Pollutant Name & CAS#	#/ HR	Tons/ YR			Stack Height (mtrs)	Direction (u/d/h) [b]	Inside Diameter (mtrs)	Velocity (m/s)	Flow Rate (m^3/s)	Temp. ($^\circ$ K)	Capped (Y/N)
		Petroleum Product Loading Rack - 4 to 6 Loading Arms - Bottom Loading	1950's /2004 /2014		See Attachment G-1		East North	463250.6 2427961.4	N/A	N/A	N/A	N/A	N/A	Ambient	
		Storage Tank 1 - Internal floating roof - 7,300 bbl capacity - 35.9' D x 39.9' shell H - Gasoline / Naphtha	1966		See Attachment G-1		East North	463250.6 2427961.4	12	u	11	0	0	Ambient	
		Storage Tank 2 - Internal floating roof - 7,200 bbl nominal capacity - 40' D x 32' shell H - Jet Fuel	1989	Note 1	See Attachment G-1		East North	463250.6 2427961.4	10	u	12	0	0	Ambient	
		Storage Tank 4 - Internal floating roof - 7,500 bbl nominal capacity - 38' D x 37.5' shell H - Gasoline/ Naphtha / Diesel	1957		See Attachment G-1		East North	463250.6 2427961.4	11	u	12	0	0	Ambient	
		Storage Tank 9 - Internal floating roof - 3,100 bbl nominal capacity - 26' D x 32' shell H - Gasoline / Naphtha	1957		See Attachment G-1		East North	463250.6 2427961.4	10	u	8	0	0	Ambient	
		AST 1 - Internal floating roof - 645 bbl nominal capacity - 12' D x 32' shell H - Ethanol/ Diesel	2014	Note 2	See Attachment G-1		East North	463250.6 2427961.4	10	u	4	0	0	Ambient	

[a] Specify UTM Horizontal Datum as Old Hawaiian, NAD-83, or NAD-27
[b] Specify the direction of the stack exhaust as u = upward, d = downward, or h = horizontal

Note 1: Tank 2 is exempt from permitting per §11-60.1-82(f)(7) because the potential VOC emissions from this source are less than 2.0 tpy, based on jet fuel storage.
Note 2: The four to six (4-6) temporary ASTs are exempt from permitting §11-60.1-82(f)(1) & §11-60.1-82(f)(7) because the capacities of these storage tanks are less than 40,000 gallons and emissions are below 1.0 tpy based on ethanol storage.

Company Name: Kauai Petroleum Co., Ltd. Petroleum Bulk Loading Terminal File No.: _____

Location: 3185 Waapa Road, Lihue, HI 96766

(Make as many copies of this page as necessary) Page 2 of 3

EMISSIONS UNITS TABLE

Review of applications and issuance of permits will be expedited by supplying all necessary information on this table.

AIR POLLUTANT DATA: EMISSION POINTS				AIR POLLUTANT	AIR POLLUTANT EMISSION RATE PTE		UTM Zone: 4 Horizontal Datum [a]: NAD-83		STACK SOURCE PARAMETERS						
Stack No.	Unit No.	Equipment Name/ Description & SICC number	Equipment Date	Regulated/ Hazardous Air Pollutant Name & CAS#	#/ HR	Tons/ YR	Coordinates (mtrs)		Stack Height (mtrs)	Direction (u/d/h) [b]	Inside Diameter (mtrs)	Velocity (m/s)	Flow Rate (m^3/s)	Temp. (° K)	Capped (Y/N)
		AST 2 - Internal floating roof - 645 bbl nominal capacity - 12' D x 32' shell H - Ethanol/ Diesel	2014	Note 2	See Attachment G-1		East North	463250.6 2427961.4	10	u	4	0	0	Ambient	
		AST 3 - Internal floating roof - 645 bbl nominal capacity - 12' D x 32' shell H - Ethanol/ Diesel	2014	Note 2	See Attachment G-1		East North	463250.6 2427961.4	10	u	4	0	0	Ambient	
		AST 4 - Internal floating roof - 645 bbl nominal capacity - 12' D x 32' shell H - Ethanol/ Diesel	2014	Note 2	See Attachment G-1		East North	463250.6 2427961.4	10	u	4	0	0	Ambient	
		AST 5 - Internal floating roof - 645 bbl nominal capacity - 12' D x 32' shell H - Ethanol/ Diesel	2014	Note 2	See Attachment G-1		East North	463250.6 2427961.4	10	u	4	0	0	Ambient	
		AST 6 - Internal floating roof - 645 bbl nominal capacity - 12' D x 32' shell H - Ethanol/ Diesel	2014	Note 2	See Attachment G-1		East	463250.6	10	u	4	0	0	Ambient	
		Diesel Generator - Support loading rack - Ultra Low Sulfur Diesel -≤300 bhp -EPA Tier 4	2014		See Attachment G-1		East North	463250.6 2427961.4	3	u	0.1	114	0.5	644	N

[a] Specify UTM Horizontal Datum as Old Hawaiian, NAD-83, or NAD-27

[b] Specify the direction of the stack exhaust as u = upward, d = downward, or h = horizontal

Note 1: Tank 2 is exempt from permitting per §11-60.1-82(f)(7) because the potential VOC emissions from this source are less than 2.0 tpy, based on jet fuel storage.

Note 2: The four to six (4-6) temporary ASTs are exempt from permitting §11-60.1-82(f)(1) & §11-60.1-82(f)(7) because the capacities of these storage tanks are less than 40,000 gallons and emissions are below 1.0 tpy based on ethanol storage.

Company Name: Kauai Petroleum Co., Ltd. Petroleum Bulk Loading Terminal File No.: _____

Location: 3185 Waapa Road, Lihue, HI 96766

(Make as many copies of this page as necessary) Page 3 of 3

EMISSIONS UNITS TABLE

AIR POLLUTANT DATA: EMISSION POINTS				AIR POLLUTANT	AIR POLLUTANT EMISSION RATE PTE		UTM Zone: 4 Horizontal Datum [a]: NAD-83		STACK SOURCE PARAMETERS						
Stack No.	Unit No.	Equipment Name/ Description & SICC number	Equipment Date	Regulated/ Hazardous Air Pollutant Name & CAS#	#/ HR	Tons/ YR	Coordinates (mtrs)		Stack Height (mtrs)	Direction (u/d/h) [b]	Inside Diameter (mtrs)	Velocity (m/s)	Flow Rate (m^3/s)	Temp. ($^\circ K$)	Capped (Y/N)
		Flare -Loading rack control device -Gasoline/ Naphtha/ Ethanol	2014	Note 2	See Attachment G-1		East	463250.6	4-10	u	11	20	250	1273	N

[a] Specify UTM Horizontal Datum as Old Hawaiian, NAD-83, or NAD-27

[b] Specify the direction of the stack exhaust as u = upward, d = downward, or h = horizontal

Note 1: Tank 2 is exempt from permitting per §11-60.1-82(f)(7) because the potential VOC emissions from this source are less than 2.0 tpy, based on jet fuel storage.

Note 2: The four to six (4-6) temporary ASTs are exempt from permitting §11-60.1-82(f)(1) & §11-60.1-82(f)(7) because the capacities of these storage tanks are less than 40,000 gallons and emissions are below 1.0 tpy based on ethanol storage.

Attachment B

Form S-2
Application for an Initial Covered Source Permit

Kauai Terminal Upgrade Project – Phase I
Application for an Initial Covered Source Permit

Mid Pac Petroleum, LLC
Kauai Petroleum Co., Ltd.
Petroleum Bulk Loading Terminal
Permit No. 0370-01-N

Mid Pac PETROLEUM

File No.: _____

S-2: Application for an Initial Covered Source Permit

In providing the required information, reference the corresponding letters and numbers listed below.

Provide a minimum of **two (2)** sets (1 original and 1 copy) of all application materials to the Hawaii Department of Health. Also, mail **one (1)** set directly to EPA at the following address:

Chief (Attention: AIR-3)
Permits Office, Air Division
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street
San Francisco, CA 94105

I. In accordance with Hawaii Administrative Rules (HAR) §11-60.1-83, the following information is required:

A. Equipment Specifications:

1. Maximum design capacity. [Table IA-1]
2. Fuel type. [Table IA-1]
3. Fuel use. [Table IA-1]
4. Production capacity. [Table IB-1]
5. Production rates. [Table IB-1]
6. Raw materials. [Table IA-1]
7. Provide any manufacturer's literature. N/A

Table A-1 below summarizes the specifications for key facility equipment after the proposed project is implemented. Throughput limits are provided in the project scope table presented in Section I.B.

Table A-1 – Equipment Specifications (Post Project)

Equipment	Description	Capacity	Fuel / Material
Truck Loading Rack			
Tank Truck Loading Rack	Tank truck loading rack with 4 to 6 bottom loading arms	600 GPM	• Gasoline and Ethanol (Finished Gasoline) • Naphtha • Jet Fuel • Diesel
Diesel Generator	Electric generator powered by diesel IC engine	• ≤ 300 bhp	• Diesel
Flare	Loading rack vapor combustion device	• ≥ 98% destruction efficiency	• Loading vapors from Gasoline, Ethanol, and Naphtha loading • Propane pilot gas

Equipment	Description	Capacity	Fuel / Material
Petroleum Storage Tanks			
Tank No. 1	Internal floating roof storage tank	7,300 bbl	• Gasoline • Naphtha
Tank No. 2	Internal floating roof storage tank	7,200 bbl	• Jet Fuel
Tank No. 4	Internal floating roof storage tank	7,500 bbl	• Gasoline • Naphtha • Diesel
Tank No. 9	Internal floating roof storage tank	3,100 bbl	• Gasoline • Naphtha
AST 1	Internal floating roof storage tank	645 bbl	• Denatured Ethanol • Diesel
AST 2	Internal floating roof storage tank	645 bbl	• Denatured Ethanol • Diesel
AST 3	Internal floating roof storage tank	645 bbl	• Denatured Ethanol • Diesel
AST 4	Internal floating roof storage tank	645 bbl	• Denatured Ethanol • Diesel
AST 5	Internal floating roof storage tank	645 bbl	• Denatured Ethanol • Diesel
AST 6	Internal floating roof storage tank	645 bbl	• Denatured Ethanol • Diesel

B. Provide detailed descriptions of all processes and products defined by Standard Industrial Classification Code (SICC). Also, provide any reasonably anticipated alternative operating scenarios, associated processes, and products, by SICC.

The Mid Pac Kauai Terminal is a bulk petroleum terminal that currently receives both gasoline and jet fuel from marine barges, stores these products in four (4) above ground storage tanks, and bottom loads into outbound tank trucks at a single-bay truck loading rack. Permitted Tank Nos. 1, 4, and 9 store gasoline and unpermitted Tank No. 2 stores jet fuel.

Mid Pac, in this application, proposes to: 1) add the ability to store and inline blend ethanol to produce and load finished gasoline, 2) additionally process diesel and naphtha, and 3) increase annual throughput limits at the loading rack. In addition, Mid Pac will install a flare to control vapors from gasoline, ethanol, and naphtha loading to order to comply with NSPS Subpart XX. The truck loading rack will become subject to Subpart XX because the changes at the rack constitute a modification as defined in NSPS Subpart A. Thus, this submittal is also an application to convert Mid Pac from a noncovered source to a covered source, triggered by Subpart XX applicability. Mid Pac, in this application, is not applying for any alternative operating scenarios.

The proposed project changes are described in the cover letter. Table 1 on page 4 of the cover letter, excerpted below, also summarizes the proposed changes.

Table 1 excerpted from cover letter summarizing proposed changes

Description	Pre-Project	Post-Project (Phase I)
Storage Tanks / Product Services		
Tank No. 1	Gasoline	Gasoline / Naphtha
Tank No. 2	Jet Fuel	Jet Fuel
Tank No. 4	Gasoline	Gasoline / Naphtha / Diesel
Tank No. 9	Gasoline	Gasoline / Naphtha
Temporary ASTs (4-6)	N/A	Denatured Ethanol / Diesel
Construction		
Temporary ASTs (4-6)	N/A	Internal Floating Roof
Vapor Control Device	N/A	Elevated Flare
Diesel Generator	N/A	≤ 300 bhp, Tier 4 Engine
Annual Throughput Limits		
Gasoline	235,800 bbl/yr	N/A
Gasoline / Naphtha	N/A	949,000 bbl/yr
Jet Fuel	350,000 bbl/yr	793,000 bbl/yr
Diesel	N/A	219,000 bbl/yr
Ethanol	N/A	94,900 bbl/yr
Truck Loading Rack		
Rack Pumping Rate	420 GPM	600 GPM
Equipment Upgrades	• Outdated equipment • No inline blending • 3 loading arms	• New metering • Inline blending • Additive injection • Automation systems • 4 to 6 loading arms

1. Identify and describe in detail all air pollution control equipment and compliance monitoring devices or activities planned by the owner or operator, and to the extent of available information, an estimate of emissions before and after controls. Provide all calculations and assumptions.

The Kauai Terminal proposes to install an elevated flare to control emissions during the loading of gasoline, ethanol, and naphtha. The flare will not be used during the loading of diesel and jet because: 1) it is being installed to meet NSPS Subpart XX, which regulates gasoline loading, and 2) the uncontrolled VOC emissions associated with diesel and jet loading are small. The estimated maximum usage for the flare is 8 hours per day. The flare will have a minimum destruction efficiency of 98%.

The tables below summarize the potential-to-emit (PTE) emissions before and after the project. The pre-project PTE emissions are based on the Clean Air Branch's NonCovered Source Permit Review Summary for Kauai Petroleum Company's permit renewal application dated March 30, 2010 (Application File No.: 0370-03) . The post-project PTE emissions reflect the project changes in whole, and consider the VOC destruction efficiency of the flare, the new criteria pollutants introduced by combustion in the flare and diesel generator, and greenhouse gas (GHG) pollutants which became subject to permitting requirements in 2011. The detailed emissions calculations for VOCs, other criteria pollutants, HAPs, and GHGs are provided in Attachment G.

Table B1-1 – Pre-Project and Post-Project PTE VOC Emissions

Equipment	Pre-Project VOC PTE (tpy)	Post-Project VOC PTE (tpy)
Truck Loading Rack		
Tank Truck Loading	32.6	2.3
Barge Loading	27.2	0.0
Flare	N/A	3.2
Diesel Generator	N/A	0.2
Petroleum Storage Tanks		
Tank No. 1	See Storage Tanks Total	3.2
Tank No. 2	See Storage Tanks Total	0.1
Tank No. 4	See Storage Tanks Total	1.7
Tank No. 9	See Storage Tanks Total	2.5
Temporary ASTs (6)	N/A	0.6
Storage Tanks Total	10.1	8.0
Fugitive Components		
Fugitive Components	0.03	0.18
Total Facility		
Total Facility PTE, tons per year	**69.9**	**13.9**

In Table 1B-1 above, please note that barge loading VOC emissions are not indicated in the post-project scenario. The Kauai Terminal does not anticipate the need to conduct marine loading operations at this time. If, under rare circumstances in the future, an occasion arises to conduct marine loading, Mid Pac will explore potential avenues for approval with DOH such as restoring this activity in its permit or obtaining a variance.

Table B1-2 – Pre-Project and Post-Project PTE NOx, SOx, CO, and PM Emissions

Equipment	Pre-Project PTE (tpy)	Post-Project PTE (tpy)
NOx		
Flare, NOx	N/A	0.6
Diesel Generator, NOx	N/A	0.5
Total Facility PTE, tons per year	**0**	**1.0**
SOx		
Flare, SOx	N/A	0.0
Diesel Generator, SOx	N/A	0.0
Total Facility PTE, tons per year	**0**	**0.0**
CO		
Flare, CO	N/A	0.8
Diesel Generator, CO	N/A	4.1
Total Facility PTE, tons per year	**0**	**4.9**
PM		
Flare, PM	N/A	0.1
Diesel Generator, PM	N/A	0.0
Total Facility PTE, tons per year	**0**	**0.1**

Table B1-3 – Pre-Project and Post-Project PTE HAP Emissions

Equipment	Pre-Project HAP PTE (tpy)	Post-Project HAP PTE (tpy)
Benzene	0.23	0.1
Ethylbenzene	0.07	0.0
n-Hexane	0.73	1.0
Toluene	0.28	0.1
Xylenes (Mixed Isomers)	0.11	0.1
Methanol	0.00	0.0
Naphthalene	0.00	0.0
Total Facility PTE, tons per year	**1.43**	**1.4**

Table B1-4 – Pre-Project and Post-Project PTE GHG Emissions

Equipment	Pre-Project GHG PTE (tpy)	Post-Project GHG PTE (tpy)
CO2		
Flare Pilot Gas (Propane)	N/A	11
Flare Loading Rack Vapors (Gasoline)	N/A	634
Diesel Generator	N/A	440
Total Facility PTE, tons per year	N/A	**1,085**
CH4		
Flare Pilot Gas (Propane)	N/A	0.0
Flare Loading Rack Vapors (Gasoline)	N/A	0.0
Diesel Generator	N/A	0.0
Total Facility PTE, tons per year	N/A	**0.0**
N2O		
Flare Pilot Gas (Propane)	N/A	0.0
Flare Loading Rack Vapors (Gasoline)	N/A	0.1
Diesel Generator	N/A	0.0
Total Facility PTE, tons per year	N/A	**0.1**
CO2e		
Flare Pilot Gas (Propane)	N/A	11
Flare Loading Rack Vapors (Gasoline)	N/A	651
Diesel Generator	N/A	452
Total Facility PTE, tons per year	N/A	**1,114**

2. List all **insignificant** activities in accordance with HAR §11-60.1-82.

Table B2-1 lists all insignificant activities that are exempt from permitting.

Table B2-1 – Exempt Insignificant Activities

Equipment	Reason for Exemption	DOH Regulation Reference
Tank No. 2	HAP emissions are less than 500 lbs/yr. VOC emissions are less than 2.0 tpy.	§11-60.1-82(f)(7)
Temporary ASTs (4 to 6)	VOC emissions less than 1.0 tpy based on ethanol fuel storage. Tank capacities are less than 40,000 gallons.	§11-60.1-82(f)(1) & §11-60.1-82(f)(7)

C. Maximum Operating Schedule (to the extent needed to determine or regulate emissions):

1. Total hours per day, per week, and/or per month.

   The Kauai Terminal operates 24 hours a day, 7 days a week, 365 days a year. The loading rack flare is expected to operate 8 hours a day. The diesel generator is expected to operate 13 hours a day.

2. Total hours per year.

Facility:	8760 hours/year
Flare:	2920 hours/year
Diesel Generator:	4745 hours/year

3. If operation is seasonal or irregular, describe. N/A

D. Cite and describe all **applicable requirements** as defined in HAR §11-60.1-81, including the following:

1. Description of or reference to any applicable test methods for determining compliance with each applicable requirement.

2. Explanation of all proposed exemptions from any applicable requirements.

Table D-1 below provides a full applicability evaluation for all relevant DOH and federal rules and regulations and summarizes both applicable and non-applicable requirements.

Table D-1 – Regulation Applicability Evaluation

Regulation	**Applicability Evaluation**
Synthetic Minor Stationary Source *[40 CFR 52.21; 40 CFR 70.2]*	Mid Pac is proposing, as part of this permit application, to establish federally enforceable throughput limits to limit the facility's potential-to-emit VOC emissions below 100 tons per year. As such, Mid Pac will remain a synthetic minor stationary source and not become a major stationary source.
HAP Area Source *[40 CFR 63.2]*	The proposed project will not cause Mid Pac to change from a hazardous air pollutant (HAP) area source to a HAP major source. Mid Pac will continue to emit, on a potential-to-emit basis, less than 10 tons per year of any single HAP or less than 25 tons per year of any combination of HAPs.
Non-Major Covered Source *[HAR 11-60.1 Subchapter 5]*	Mid Pac will change from a noncovered source to a non-major covered source as a result of the proposed project. Currently, Mid Pac is a noncovered source because the following determinations apply: 1. Mid Pac is not a major stationary source; 2. Mid Pac is not subject to a NSPS regulation that, by itself,

Table D-1 – Regulation Applicability Evaluation

Regulation	Applicability Evaluation
	triggers Part 70 or Title V permitting; 3. Mid Pac is not subject to a MACT regulation that, by itself, triggers Part 70 or Title V permitting; and 4. Mid Pac is not subject to PSD. After the proposed project, Mid Pac will become a non-major covered source because its PTE emissions will be below the major source threshold yet it will be subject to a NSPS regulation (Subpart XX).
Prevention of Significant Deterioration (PSD) *[40 CFR 52.21; HAR 11-60.1 Subchapter 7]*	PSD is not applicable because the proposed project will not cause Mid Pac to change from a synthetic minor stationary source to a major stationary source. PSD only applies to projects at major stationary sources.
Best Available Control Technology (BACT) *[HAR 11-60.1-1; HAR 11-60.1-61]*	The proposed project is not subject to a BACT analysis because it does not increase emissions above the significance thresholds defined in HAR §11-60.1, i.e. 40 tpy for NOx, SOx, PM, and VOC and 100 tpy for CO. See Tables B1-1 and B1-2 for a summary of pre-project and post-project criteria pollutant emissions.
NESHAP Subpart R – NESHAP for Major HAP Source Gasoline Distribution *[40 CFR 63.420; HAR 11-60.1 Subchapter 9]*	The Phase I upgrade project will not cause Mid Pac to change from a HAP area source to a HAP major source. As such, NESHAP Subpart R, which regulates gasoline distribution at major HAP sources, does not apply.
NESHAP Subpart BBBBBB – NESHAP for Area HAP Source Gasoline Distribution *[40 CFR 63.11080; HAR 11-60.1 Subchapter 9]*	Mid Pac, after the proposed project, will remain a HAP area source and be subject to NESHAP Subpart BBBBBB, which regulates gasoline distribution at area HAP sources. Mid Pac's proposed throughput limit for gasoline is greater than 20,000 gal/day but less than 250,000 gal/day. All of Mid Pac's gasoline storage tanks have capacities greater than 75 cubic meters (471 barrels). Mid Pac will continue to comply with Subpart BBBBBB as follows: 1) operate each gasoline storage tank with an internal floating roof; 2) use submerged filling for the loading of tank trucks; and 3) conduct monthly equipment leak inspections. Lastly, applicability to Subpart BBBBBB does not trigger covered source permitting because, pursuant to §63.11081(b), it is one of the NESHAP regulations that, by itself, does not trigger Part 70 permitting.
NSPS Subpart XX – NSPS for Bulk Gasoline	The proposed project involves the following scope at the gasoline loading rack -- replacing pumps for higher flow rates,

Table D-1 – Regulation Applicability Evaluation

Regulation	Applicability Evaluation
Terminals *[40 CFR 60.500; HAR 11-60.1 Subchapter 8]*	installing ethanol inline equipment, installing 1 to 3 additional new loading arm(s), upgrading the automation system, and increasing the annual gasoline throughput limits. This scope constitutes an NSPS "modification" because it is physical and operational change that increases VOC emissions. The changes do not meet any of the "modification" exemptions listed in 40 CFR 60.14(e), including being one that increases "...production rate...without a capital expenditure." Therefore, the gasoline loading rack will become subject to Subpart XX and Mid Pac will comply by installing a flare to control gasoline loading vapors. Controlled VOC emissions from gasoline loading will meet the Subpart XX standard of 35 mg/l of gasoline loaded.
NSPS Subpart A, Section 60.18 – NSPS control device requirements for flares *[40 CFR 60.500; HAR 11-60.1 Subchapter 8]*	The proposed flare serving the gasoline loading rack will meet the general NSPS Subpart A control device requirements for a flare. These requirements include operating with no visible emissions, operating with a pilot flame at all times, combusting gases with a minimum LHV of 200 btu/scf (non-assisted flare), and operating with the maximum exist velocity specified in Section 60.18(b)(4).
NSPS IIII – NSPS for Stationary Compression Ignition Internal Combustion Engines *[40 CFR 60.4200; HAR 11-60.1 Subchapter 8]*	Mid Pac plans to install a new generator, powered by a diesel-fueled IC engine (≤ 300 bhp), to provide supplemental electricity at the gasoline loading rack. The engine is a non-emergency compression ignition (CI) internal combustion (IC) engine and will be subject to NSPS Subpart IIII. Mid Pac plans to purchase a Tier 4 engine which will meet the requirements of Subpart IIII. Lastly, applicability to Subpart IIII does not trigger covered source permitting because, pursuant to §60.4200(c), it is one of the NSPS regulations that, by itself, does not trigger Part 70 permitting.
NESHAPS ZZZZ - NESHAP Stationary Reciprocating Internal Combustion Engines *[40 CFR 63.6580; HAR 11-60.1 Subchapter 9]*	The diesel-fueled reciprocating IC engine (RICE) will also be subject to NESHAP Subpart ZZZZ as a new non-emergency RICE located at an area HAP source. Per §63.6590(c), compliance with NSPS Subpart IIII will satisfy the requirements for NESHAP Subpart ZZZZ. Lastly, applicability to Subpart ZZZZ does not trigger covered source permitting because, pursuant to §63.6585(d), it is one of the NESHAP regulations that, by itself, does not trigger Part 70 permitting.
NSPS Subpart Kb – NSPS for Volatile Organic Liquid Storage Vessels	The proposed project will install four (4) to six (6) 645 barrel (27,090 gallon) temporary aboveground storage tanks (ASTs) in denatured ethanol or diesel service. NSPS Subpart Kb does not apply to these tanks because they have design capacities less

Table D-1 – Regulation Applicability Evaluation

Regulation	Applicability Evaluation
[40 CFR 60.110b; HAR 11-60.1 Subchapter 8]	than 151 cubic meters (39,900 gallons) and will exclusively store denatured ethanol or diesel with maximum true vapor pressures less than 15.0 kPa (2.2 psia) [40 CFR 60.110b(b)].
Consolidated Emissions Reporting Rule (CERR) 40 CFR 51 Subpart A	CERR emission inventory reporting requirements do not apply because criteria pollutant actual emissions from Type B point sources are below the threshold levels of 100 tons per year. However, the Clean Air Branch, by internal policy, requires annual emissions reporting from covered sources. Mid Pac will become a covered source as a result of the proposed project.
Compliance Assurance Monitoring (CAM) [40 CFR 64]	CAM does not apply primarily because Mid Pac is not a major stationary source. The purpose of CAM is to provide a reasonable assurance that compliance is being achieved with large emissions units that rely on air pollution control device equipment to meet an emissions limit or standard. In order for the flare to be subject to CAM, it must be: (1) be located at a major source; (2) be subject to an emissions limit or standard; (3) use a control device to achieve compliance; (4) have potential pre-control emissions that are 100% of the major source level; and (5) not otherwise be exempt from CAM.
Greenhouse Gas Emissions *[HAR 11-60.1 Subchapter 11]*	The proposed project is not required to obtain a PSD permit that address GHG emissions. Mid Pac is not subject to PSD for GHG emissions because it does not emit GHG emissions over 100,000 tpy CO2e. See Table B1-4 for a summary of pre-project and post-project GHG emissions.

E. Identify and describe current operational limitations or work practices, or for covered sources that have not yet begun operation, such limitations or practices which the owner or operator of the source plans to implement that affect emissions of any regulated or hazardous air pollutant. Provide all calculations and assumptions.

Mid Pac is proposing, as part of this permit application, to establish the federally enforceable throughput limits listed in Table 1 (see Item B) to limit the facility's potential-to-emit VOC emissions below 100 tons per year. As such, Mid Pac will remain a synthetic minor stationary source.

The federally enforceable throughput limits will also ensure Mid Pac's potential-to-emit stays below 10 tons per year of any single for hazardous air pollutant (HAP) and below 25 tons per year of any combination of HAPs. As such, Mid Pac will remain an area HAP source and not become a major HAP source.

F. Provide a detailed schedule for construction or modification of the proposed source, including any major milestones, if applicable.

Mid Pac is prepared to commence construction as soon as the permit is processed.

G. For **new** covered sources and **significant** modifications which increase the emissions of any air pollutant or result in the emission of any air pollutant not previously emitted, an assessment of the ambient air quality impact of the covered source or significant modification, with the inclusion of any available background air quality data. The assessment shall include all supporting data, calculations and assumptions, and a comparison with the NAAQS and SAAQS.

Mid Pac conducted an AERSCREEN model of the flare and diesel generator. A screening model is more conservative than a refined model. Results indicate that the Mid Pac Kauai Terminal PTE emissions are below the National Ambient Air Quality Standard for NOx, SOx, PM, and CO. Detailed results and modelling parameters can be found in Appendix F.

H. For **new** covered sources and **significant** modifications subject to the requirements of subchapter 7 of HAR Chapter 11-60.1, all analyses, assessments, monitoring, and other application requirements of subchapter 7.

Subchapter 7, Prevention of Significant Deterioration (PSD), is not applicable because the facility is not a major source.

I. Provide detailed information to define permit terms and conditions for any proposed **emissions trading** within the facility in accordance with HAR §11-60.1-96.

N/A

J. Provide the following for compliance purposes:

1. A Compliance Plan, Form C-1.
2. A Compliance Certification, Form C-2.

A compliance plan on Form C-1 is provided in Attachment C. A compliance certification on Form C-2 is provided in Attachment D.

II. Submit an application fee according to the Application Fee Schedule in the Instructions for Applying for an Air Pollution Control Permit

A check in the amount of $1,000 is enclosed in payment of the DOH application fee for an initial permit for a non-major, non-toxic covered source.

III. Provide other information as follows:

A. As required by any applicable requirement or as requested and deemed necessary by the Director of Health (hereafter, Director) to make a decision on the application.

B. As may be necessary to implement and enforce other applicable requirements of the Clean Air Act or of HAR Chapter 11-60.1 or to determine the applicability of such requirements.

IV. The Director reserves the right to request the following information:

A. An assessment of the ambient air quality impact of the source or modification. The assessment shall include all supporting data, calculations and assumptions, and a comparison with the National Ambient Air Quality Standards and State Ambient Air Quality Standards.

B. A risk assessment of the air quality related impacts caused by the covered source or significant modification to the surrounding environment.

C. Results of source emissions testing, ambient air quality monitoring, or both.

D. Information on other available control technologies.

V. An application shall be determined to be complete only when all of the following have been complied with:

A. All information required or requested in numbers **I, III, and IV** has been submitted.

B. All documents requiring certification have been certified pursuant to HAR §11-60.1-4.

C. All applicable fees have been submitted.

D. The Director has certified that the application is complete.

VI. The Director shall not continue to act upon or consider an incomplete application.

A. The applicant shall be notified in writing whether the application is complete:
   1. For the requirements of subchapter 7, thirty days after receipt of the application.
   2. For the requirements of HAR subchapter 5, sixty days after receipt of the application. For purposes of this paragraph, the date of receipt of an application for a new covered source or significant modification subject to the requirements of subchapter 7 shall be the date the application is determined to be complete for the requirements of subchapter 7.
   3. Unless the Director requests additional information or notifies the applicant of incompleteness within sixty days after receipt of an application pursuant to VI.A.2 above, the application shall be deemed complete for the requirements of subchapter 5.

B. During the processing of an application that has been determined or deemed complete, if additional information is necessary to evaluate or take final action on the application, the Director may request such information in writing and set a reasonable deadline for a response.

VII. After receipt of a complete application, the Director, in writing, shall approve, conditionally approve, or deny an application within eighteen months, except as provided in HAR §11-60.1-88 and (A) and (B) below.

A. Upon program approval, within nine months for an application containing an early reduction demonstration pursuant to section 112(i)(5) of the Clean Air Act.

B. Within twelve months for a new covered source or significant modification subject to the requirements of subchapter 7.

VIII. A Covered Source Permit application for a new covered source or a significant modification shall be approved only if the Director determines that the construction or operation of the new covered source or significant modification will be in compliance with all applicable requirements.

IX. **The Director shall provide for public notice, including the method by which a public hearing can be requested, and an opportunity for public comment on the draft Covered Source Permit in accordance with HAR §11-60.1-99.**

X. **The Director shall provide a statement that sets forth the legal and factual bases for the draft permit conditions (including references to the applicable statutory or regulatory provisions) to EPA and any other person requesting it.**

XI. **Each application and proposed Covered Source Permit shall be subject to EPA oversight in accordance with HAR §11-60.1-95.**

Attachment C

Form C-1
Compliance Plan

Kauai Terminal Upgrade Project – Phase I
Application for an Initial Covered Source Permit

Mid Pac Petroleum, LLC
Kauai Petroleum Co., Ltd.
Petroleum Bulk Loading Terminal
Permit No. 0370-01-N

Mid Pac PETROLEUM

File No.: _____

C-1: Compliance Plan

The Responsible Official shall submit a Compliance Plan as indicated in the Instructions for Applying for an Air Pollution Control Permit and at such other times as requested by the Director of Health (hereafter, Director).

Use separate sheets of paper if necessary.

---

1. Compliance status with respect to all Applicable Requirements:

   Will your facility be in compliance, or is your facility in compliance, with all applicable requirements in effect at the time of your permit application submittal?

   [X] YES {If YES, complete items a and c below}

   [ ] NO {If NO, complete items a, b, and c below}

   a. Identify all applicable requirement(s) for which compliance is achieved.

   Noncovered Source Permit No. 0370-01-N, Attachment I, Standard Conditions

   Noncovered Source Permit No. 0370-01-N, Attachment IIA, Special Conditions – Equipment Description

   Noncovered Source Permit No. 0370-01-N, Attachment IIB, Special Conditions – Emission and Operational Limitations and/or Standards

   Noncovered Source Permit No. 0370-01-N, Attachment IIC, Special Conditions – Monitoring and Recordkeeping Requirements

   Noncovered Source Permit No. 0370-01-N, Attachment IID, Special Conditions – Notification and Reporting Requirements

   Noncovered Source Permit No. 0370-01-N, Attachment IIE, Special Conditions – Agency Notification

   Noncovered Source Permit No. 0370-01-N, Attachment III, Annual Fee Requirements

   Noncovered Source Permit No. 0370-01-N, Attachment IV, Annual Emissions Reporting Requirements

   NESHAP Subpart BBBBBB – NESHAP for Area HAP Source Gasoline Distribution

   Provide a statement that the source is in compliance and will continue to comply with all such requirements.

   The Kauai Petroleum Co., Ltd. – Kauai Terminal is currently in compliance, and will continue to be in compliance, with the terms and conditions of its Noncovered Source Permit No. 0370-01-N.

   b. Identify all applicable requirement(s) for which compliance is NOT achieved.

   None

Provide a detailed Schedule of Compliance Schedule and a description of how the source will achieve compliance with all such applicable requirements.

Description of Remedial Action	Expected Date of Completion
N/A	N/A

c. Identify any other applicable requirement(s) with a future compliance date that your source is subject to. These applicable requirements may take effect AFTER permit issuance:

Applicable Requirement	Effective Date	Currently in Compliance?
NESHAPS ZZZZ - NESHAP Stationary Reciprocating Internal Combustion Engines	Upon Operation	No
NSPS IIII – NSPS for Stationary Compression Ignition Internal Combustion Engines	Upon Operation	No
NSPS XX – NSPS for Bulk Gasoline Terminals	Upon Operation	No

If the source is not currently in compliance, provide a Schedule of Compliance and a description of how the source will achieve compliance with all such applicable requirements:

Description of Proposed Action/Steps to Achieve Compliance	Expected Date of Achieving Compliance
A preliminary regulation applicability evaluation is available in Table D-1 of Form S-2. In anticipation of achieving compliance with NESHAPS ZZZZ, NSPS IIII, and NSPS XX, Mid Pac proposes to 1) ensure that the diesel generator will be EPA Tier 4 certified, and 2) establish all necessary monitoring, maintenance, recordkeeping, reporting, and testing procedures.	Upon Operation

Provide a statement that the source on a timely basis will meet all these applicable requirements:
The Kauai Petroleum Co., Ltd. – Kauai Terminal will be in compliance with applicable requirements on a timely basis.

If the expected date of achieving compliance will NOT meet the applicable requirement's effective date, provide a more detailed description of each remedial action and the expected date of completion:

Description of Remedial Action and Explanation	Expected Date of Completion
N/A	N/A

2. Compliance Progress Reports:

a. If a compliance plan is being submitted to remedy a violation, complete the following information:

Frequency of Submittal: N/A (less than or equal to 6 months) Beginning Date: N/A

b. Date(s) that the Action described in (1)(b) was achieved:

Remedial Action	Date Achieved
N/A	N/A

c. Narrative description of why any date(s) in (1)(b) was not met, and any preventive or corrective measures taken in the interim:

N/A

RESPONSIBLE OFFICIAL (as defined in HAR §11-60.1-1)

Name (Last): Hirashima (First): Sayle (MI): _____

Title: CFO/VP Phone: (808) 535-5990

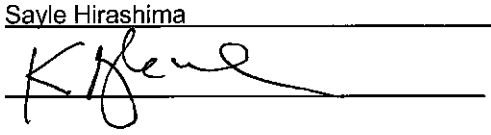
Mailing Address: 1100 Alakea Street, 8th Floor

City: Honolulu State: HI Zip Code: 96813-2833

Certification by Responsible Official (pursuant to HAR §11-60.1-4)

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record. I further state that I will assume responsibility for the construction, modification, or operation of the source in accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, and any permit issued thereof.

Name (Print/Type): Sayle Hirashima

(Signature):  Date: 9/29/14

Facility Name: Kauai Petroleum Co., Ltd. – Kauai Terminal

Location: 3185 Waapa Road, Lihue, Kauai

Permit Number: 0370-01-N

FOR AGENCY USE ONLY

File/Application No.: _____

Island: _____

Date Received: _____

Attachment D

Form C-2
Compliance Certification

Kauai Terminal Upgrade Project – Phase I
Application for an Initial Covered Source Permit

Mid Pac Petroleum, LLC
Kauai Petroleum Co., Ltd.
Petroleum Bulk Loading Terminal
Permit No. 0370-01-N

Mid Pac PETROLEUM

File No.: _____

C-2: Compliance Certification

The Responsible Official shall submit a Compliance Certification as indicated in the Instructions for Applying for an Air Pollution Control Permit and at such other times as requested by the Director of Health (hereafter, Director).

Complete as many copies of this form as needed. Use separate sheets of paper if necessary.

RESPONSIBLE OFFICIAL (as defined in HAR §11-60.1-1)

Name (Last): Hirashima (First): Sayle (MI): _____

Title: CFO/VP Phone: (808) 535-5990

Mailing Address: 1100 Alakea Street, 8th Floor

City: Honolulu State: HI Zip Code: 96813-2833

Certification by Responsible Official (pursuant to HAR §11-60.1-4)

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record. I further state that I will assume responsibility for the construction, modification, or operation of the source in accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, and any permit issued thereof.

Name (Print/Type): Sayle Hirashima

(Signature): _____ Date: 9/29/17

Facility Name: Kauai Petroleum Co., Ltd. Petroleum Bulk Loading Terminal

Location: 3185 Waapa Road Lihue,HI 96766

Permit Number: 0370-01-N

FOR AGENCY USE ONLY
File/Application No.: _____
Island: _____
Date Received: _____

Complete the following information for ***each*** applicable requirement that applies to ***each*** emissions unit at the source. Also include any additional information as required by the Director. The compliance certification may reference information contained in a previous compliance certification submittal to the Director, provided such referenced information is certified as being current and still applicable.

1. Schedule for submission of Compliance Certifications during the term of the permit:

   Frequency of Submittal: Annual Beginning Date: TBD

2. Emissions Unit No./Description: Kauai Petroleum Co., Ltd. – Kauai Terminal

3. Identify the applicable requirement(s) that is/are the basis of this certification:

   See accompanying Compliance Plan, Section (1)(a)

4. Compliance status:

   a. Will the emissions unit be in compliance with the identified applicable requirement(s)?

      ☒ YES ☐ NO

   b. If YES, will compliance be continuous or intermittent?

      ☒ Continuous ☐ Intermittent

   c. If NO, explain:

5. Describe the methods to be used in determining compliance of the emissions unit with the applicable requirement(s), including any monitoring, recordkeeping, reporting requirements, and/or test methods:

   Periodic visual inspections; physical inspections; throughput volume recordkeeping based on tape gauging; monthly leak inspections of all equipment in gasoline service; keep record of dates when any floating roof is set on its legs or when refloated; records of occurrence and duration for each malfunction of air pollution control and monitoring equipment; records of corrective actions to restore malfunctioning equipment

   Provide a detailed description of the methods used to determine compliance (e.g. monitoring device type and location, test method description, or parameter being recorded, frequency of recordkeeping, etc.):

   Visual/physical inspections; non-resetting volumetric flow meters; certificates of quality; portable gas monitors; load rack receipts; written inspection logs

6. Statement of Compliance with Enhanced Monitoring and Compliance Certification Requirements.

a. Will the emissions unit identified in this application be in compliance with applicable enhanced monitoring and compliance certification requirements?

☐ YES ☒ NO

b. If YES, identify the requirements and the provisions being taken to achieve compliance:

c. If NO, describe below which requirements will not be met:

There are no known Enhanced Monitoring and Compliance Certification requirements

Attachment E

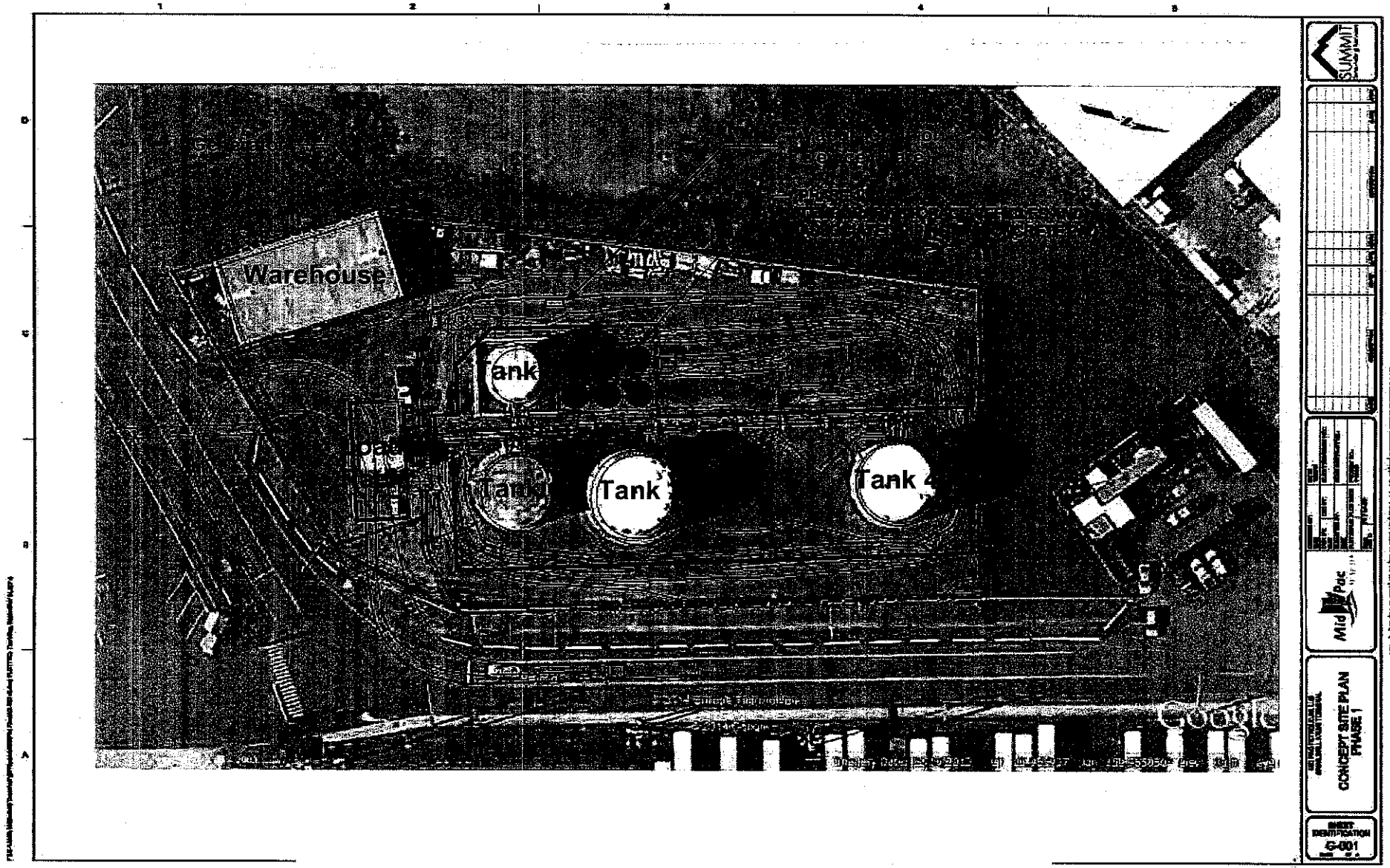
Facility Plot Plan
Proposed Phase I Modifications

Kauai Terminal Upgrade Project – Phase I
Application for an Initial Covered Source Permit

Mid Pac Petroleum, LLC
Kauai Petroleum Co., Ltd.
Petroleum Bulk Loading Terminal
Permit No. 0370-01-N

Mid Pac PETROLEUM

Appendix E: Phase 1 Modification Facility Plot Plan



Attachment F

Air Quality Assessment

Kauai Terminal Upgrade Project – Phase I
Application for an Initial Covered Source Permit

Mid Pac Petroleum, LLC
Kauai Petroleum Co., Ltd.
Petroleum Bulk Loading Terminal
Permit No. 0370-01-N

Mid Pac PETROLEUM

Ambient Air Quality Assessment:

Per §11-60.1-83 (11), an air quality impact assessment is required for existing covered sources pursing an application for an initial covered source permit. Mid Pac conducted a screening model of potential to emit (PTE) emissions of NOx, SOx, PM, and CO. These emissions are emitted from the proposed flare and generator, which were the only two modeled sources. VOCs emissions were excluded from modeling because there is no National Ambient Air Quality Standard for VOCs and emissions come from fugitive sources such as storage tanks, the truck loading rack, and component fugitives.

The air quality assessment used the EPA's AERSCREEN model to quantify ambient air pollutant impacts on the surrounding areas and assess compliance with the National Ambient Air Quality Standard. AERSCREEN is EPA's most recommended screening model since it provides a "worst-case" 1-hour concentration estimate without the need of hourly meteorological data. Conversion factors are provided by the model to also determine 3-hour, 8-hour and 24-hour concentrations. Using a screening model analysis such as AERSCREEN will give more conservative results than using a refined modeling analysis such as AERMOD. AERSCREEN model results indicate that the Kauai Terminal PTE emissions are below the National Ambient Air Quality Standard for NOx, SOx, PM, and CO.

The parameters used in the AERSCREEN model for both the flare and the diesel generator are presented below.

I. Device Parameters

Device parameters were determined from a combination of vendor feedback and engineering estimates.

Parameter	Value	Units
Flare		
Flare Height	13.09	ft
Flare Heat Rate	179,600	cal/sec
Heat Loss Fraction	0.55	-
Model Mode	Rural	-
NOx to NO2 Chemistry	PVMRM	
NO2/NOx in-stack ratio	0.057	ppm
Diesel Generator		
Stack Height	8.5	ft
Stack Diameter	3	in
Stack Temperature	700	°F
Exit Velocity	375	ft/s
Model Mode	Rural	-
NOx to NO2 Chemistry	PVMRM	-
NO2/NOx in-stack ratio	0.057	ppm

II. Meteorological Assumptions

Meteorological inputs determined from assumed urban terrain with average moisture and winter as the dominant season.

Parameter	Value	Units
Minimum Temperature	64	°F
Maximum Temperature	84	°F
Albedo	0.35	-
Bowen Ratio	1.5	-
Roughness Length	1	m

III. Building Downwash

Downwash contribution to ambient air quality was determined to be greatest from Tank No. 9. Other nearby buildings, including the warehouse and other tanks, were considered, and determined to have a lower impact on concentrations than Tank No. 9.

Downwash was modeled under the assumption that both the flare and the generator were 50 feet from the center of the tank (approximately 37 feet from the edge of the tank).

Downwash Parameters	Value	Units
Building Height	32	ft
Building Width	26	ft
Building Length	26	ft
Stack Distance from Center Point	50	ft

IV. Maximum Modeled Impacts for Each Device

Hourly emission averages were calculated based on PTEs for the generator and flare (see Appendix G for details). The flare was conservatively assumed to operate for 8 hours a day and the diesel generated was assumed to operate for 13 hours a day. Model conversion factors for 3-hr, 8-hr, 24-hr and annual averages are 1.0, 0.9, 0.6 and 0.1 respectively. However, the State of Hawaii requires a default scaling factor of 0.2 for annual averages.

Pollutant	Averaging Period	Emission Rate (g/s)	Max Modeled Generator Concentration (µg/m3)	Emission Rate (g/s)	Max Modeled Flare Concentration (µg/m3)
		Diesel Generator		Flare	
NO_2	1-hr	0.02486	79.15	0.04941	93.58
	Annual	0.02486	15.83	0.04941	18.72
SO_2	1-hr	0.00004	1.42	--	--
	3-hr	0.00004	1.42	--	--
	24-hr	0.00004	0.85	--	--
	Annual	0.00004	0.28	--	--
CO	1-hr	0.21750	769.39	0.06515	137.11
	8-hr	0.21750	692.45	0.06515	123.40
PM_{10}	24-hr	0.00124	2.63	0.00877	11.07
	Annual	0.00124	0.88	0.00877	3.69
$PM_{2.5}$	24-hr	0.00124	2.63	0.00877	11.07
	Annual	0.00124	0.88	0.00877	3.69

V. Predicted Ambient Air Quality Impacts for the Flare and Generator

The predicted air quality impacts are shown in the table below. The table demonstrates the impacts of NO_2, SO_2, CO, PM_{10}, and $PM_{2.5}$ from the combined impact of the flare, diesel generator, and background concentration. Given that this table shows a very conservative estimate of ambient emissions, the new devices should not cause or contribute to a violation of any State or National ambient air quality standard.

Pollutant	Averaging Period	Max Modeled Generator Concentration ($\mu g/m_3$)	Max Modeled Flare Concentration ($\mu g/m_3$)	Background Concentration ($\mu g/m_3$)[1]	Maximum Total Concentration ($\mu g/m_3$)	AAQS ($\mu g/m_3$)[2]	Percent of AAQS (%)
NO_2	1-hr	79.15	93.58	11.29	184.02	188	97.9%
	Annual	15.83	18.72	1.88	36.43	75	48.6%
SO_2	1-hr	1.42	--	7.6	9.02	196	4.6%
	3-hr	1.42	--	5.76	7.18	1300	0.6%
	24-hr	0.85	--	2.62	3.47	265	1.3%
	Annual	0.28	--	2.62	2.90	80	3.6%
CO	1-hr	769.39	137.11	802	1708.5	10000	17.1%
	8-hr	692.45	123.40	687	1502.85	5000	30.1%
PM_{10}	24-hr	2.63	11.07	14.9	28.61	150	19.1%
	Annual	0.88	3.69	14.9	19.47	50	38.9%
$PM_{2.5}$	24-hr	2.63	11.07	8.7	22.41	35	64.0%
	Annual	0.88	3.69	3.9	8.47	12	70.6%

[1] Background concentrations from the Niumalu Monitoring Station for NO_2 (1-hr, Annual), SO_2 (1-hr, 3-hr, 24-hr, Annual), and $PM_{2.5}$ (24-hr, Annual) and from the Kapolei Monitoring Station for CO (1-hr, 8-hr) and PM_{10} (24-hr, Annual). The concentration maximums for 2013 were used for all averaging periods, except the annual periods, which used concentration averages.

[2] Only the more restrictive of the Nation Ambient Air Quality Standard or State Ambient Air Quality Standards are shown.

Attachment G

Potential-to-Emit Emission Calculations

Kauai Terminal Upgrade Project – Phase I
Application for an Initial Covered Source Permit

Mid Pac Petroleum, LLC
Kauai Petroleum Co., Ltd.
Petroleum Bulk Loading Terminal
Permit No. 0370-01-N

Mid Pac PETROLEUM

Attachment G-1: Facility PTE Emissions
Criteria Pollutants: NOx, SOx, CO, and PM Emissions

Equipment	NOx (tpy)	SOx (tpy)	CO (tpy)	PM (tpy)
Flare	0.6	0.0	0.8	0.1
Diesel Generator	0.5	0.0	4.1	0.0
Total, tpy =	**1.0**	**0.0**	**4.9**	**0.1**

Attachment G-2: Facility PTE Emissions
VOC and HAP Emissions

Hazardous Air Pollutant		Benzene	Ethylbenzene	Methanol	n-Hexane	Toluene	Xylenes (Mixed Isomers)	Naphthalene
Gasoline/ Naphtha	Liquid Wt. %	2.82	0.04		20.03	0.37	0.25	
	Vapor Wt. %	0.70	0.00		7.89	0.03	0.01	
Jet	Liquid Wt. %							0.43
	Vapor Wt. %							0.24
Diesel	Liquid Wt. %	0.00	0.05		0.03	0.08	0.24	0.28
	Vapor Wt. %	0.74	0.91		8.03	3.98	3.45	0.21
Denatured Ethanol	Liquid Wt. %	0.00	0.00	0.04	0.02	0.03	0.01	
	Vapor Wt. %	0.00	0.00	0.07	0.04	0.01	0.00	

	VOC Emissions				HAP Emissions						
Equipment	Total lb/yr	Tank Withdrawal Loss (Floaters Only) lb/yr	Tank Other Losses lb/yr	Material	Benzene lb/yr	Ethylbenzene lb/yr	Methanol lb/yr	n-Hexane lb/yr	Toluene lb/yr	Xylenes (Mixed Isomers) lb/yr	Naphthalene lb/yr
Tank 1	6,351	88	6,263	Gasoline/ Naphtha	46	0		512	2	1	
Tank 2	217	201	16	Jet							1
Tank 4	64	59	5	Diesel	0	0		0	0	0	0
Tank 4	3,260	85	3,175	Gasoline/ Naphtha	25	0		268	1	0	
Tank 9	4,955	52	4,903	Gasoline/ Naphtha	36	0		398	2	0	
AST 1	189	12	176	Denatured Ethanol/ Diesel	0	0	0	0	0	0	
AST 2	189	12	176	Denatured Ethanol/ Diesel	0	0	0	0	0	0	
AST 3	189	12	176	Denatured Ethanol/ Diesel	0	0	0	0	0	0	
AST 4	189	12	176	Denatured Ethanol/ Diesel	0	0	0	0	0	0	
AST 5	189	12	176	Denatured Ethanol/ Diesel	0	0	0	0	0	0	
AST 6	189	12	176	Denatured Ethanol/ Diesel	0	0	0	0	0	0	
Truck Loading Rack	3,500			Gasoline/ Naphtha	24	0		276	1	0	
	178			Diesel	1	2		14	7	6	0
	800			Jet							2
	38			Denatured Ethanol	0	0	0	0	0	0	
Diesel Generator	6,422			Diesel	48	59		516	255	221	13
Flare	445			Gasoline/ Naphtha	3	0		35	0	0	
Component Fugitives	367			Gasoline/ Naphtha	3	0		29	0	0	
Total, lb/y =	**27,730**			Total, lb/y =	**186**	**61**	**1**	**2,048**	**269**	**229**	**17**
Total, tpy =	**13.9**			Total, tpy =	**0.1**	**0.0**	**0.0**	**1.0**	**0.1**	**0.1**	**0.0**

Notes:
1 Speciation profile of Gasoline/ Naphtha is based on lab samples of Naphtha (most conservative emission scenario, i.e. PTE)
2 Speciation profile of Denatured Ethanol used for ASTs (most conservative emission scenario, i.e. PTE)
3 Speciation profile of Gasoline/ Naphtha used for Flare (most conservative emission scenario, i.e. PTE)

Total HAPs	
Total, lb/y =	**2,810**
Total, tpy =	**1.4**

Attachment G-3: Facility PTE Emissions
Truck Loading Rack Fugitives

Material	S [1]	MWv	PSIA	T (F)	T (R)	AP-42 EF (lb/mbbl)	Flare Capture Efficiency	bbl/yr	VOC lb
Gasoline/ Naphtha	0.60	66	7.328	75.6	535	283.73	98.70%	949,000	3,500
Diesel	0.60	130	0.011	75.6	535	0.81	0.00%	219,000	178
Jet	0.60	130	0.013	75.6	535	1.01	0.00%	793,000	800
Denatured Ethanol	0.60	47	1.103	75.6	535	30.41	98.70%	94,900	38
								Total, lb/y =	**4,516**
								Total, tpy =	**2.3**

Notes:

1 Loading emissions are calculated by AP-42, Loading Equation (1), Table 5.2-1 and Table 5.2-2.

LL =	Loading Loss, lb/mgal	=	12.46 (SPM/T) (1 - eff/100) where	
S =	Saturation Factor	=	0.60	- Assume tanker trucks arrive without saturated vapors. No controls at gas stations
TdegF =	Temp, degF	=	75.6	- Average bulk liquid temperature in Lihue, Hawaii per TANKS database
Eff =	Overall Control Eff, %	=	0.987	AP-42 CH 5.2 collection efficiency

2 The maximum vapor pressure of Gasoline/ Naphtha is:

RVP, psia	=	10.5	- Limiting RVP based on supplier's sampling data
TdegF	=	75.6	- Average bulk liquid temperature in Lihue, Hawaii per TANKS database
Slope	=	3.0	- AP-42, Figure 7.1-14a; Motor Gasoline
TVP, psia	=	7.3	- AP-42, Figure 7.1-14b; equation for calculating true vapor pressure from RVP

3 The maximum vapor pressure of Diesel is:

TdegF	=	75.6	- Average bulk liquid temperature in Lihue, Hawaii per TANKS database
TVP, psia	=	0.011	- AP-42, properies of distillate fuel oil no. 2

4 The maximum vapor pressure of Jet is:

TdegF	=	75.6	- Average bulk liquid temperature in Lihue, Hawaii per TANKS database
TVP, psia	=	0.013	- AP-42, properies of jet kerosene

5 The maximum vapor pressure of denatured Ethanol is:

TdegF	=	75.6	- Average bulk liquid temperature in Lihue, Hawaii per TANKS database
TVP, psia	=	1.10	- AP-42, Table 7.1-5; vapor pressure equation constants for organic liquids (Ethanol)

Attachment G-4: Facility PTE Emissions
Flare (Loading Rack Vapors and Pilot Gas)

Flare Combustion of Loading Rack Vapors

Material	Loading Capture Efficiency	Flare Destruction Efficiency [5]	VOC sent to flare, lb	Uncombusted VOC in Flare, lb	Combusted VOC in Flare, lb
Gasoline/ Naphtha	98.7%	98%	265,763	5,315	260,448
Diesel [6]	0%	0%	0	0	0
Jet [6]	0%	0%	0	0	0
Denatured Ethanol	98.7%	98%	2,849	57	2,792
		Total =	268,612	5,372	263,240

Flare Combustion of Loading Rack Vapors

Pollutant	Combusted VOC in Flare, lb	HHV (BTU/lb VOC) [1]	EF (lb/MMBTU) [2,3,4]	Emissions (lb/yr)	Emissions (tpy)
VOCs [7]	263,240	28,436	0.14	6,420	**3.2**
NOx	263,240	28,436	0.15	1,123	**0.6**
CO	263,240	28,436	0.20	1,497	**0.7**
PM	263,240	28,436	0.03	202	**0.1**
			Total =	9,242	**4.6**

Propane Pilot Gas Combustion

Pollutant	Flow Rate (CF/hr) [8]	Density (lb/gal) [9]	EF (lb/mgal) [10]	Operating Hours per Year [11]	Emissions (lb/yr)	Emissions (tpy)
VOCs	22	4.25	1.0	2,920	2	**0.0**
NOx	22	4.25	13.0	2,920	23	**0.0**
CO	22	4.25	7.5	2,920	13	**0.0**
PM	22	4.25	0.7	2,920	1	**0.0**
				Total =	38	**0.0**

Total Flare Emissions (Loading Rack Vapors and Pilot Gas)

Pollutant	Emissions (lb/yr)	Emissions (tpy)
VOCs	6,422	**3.2**
NOx	1,145	**0.6**
CO	1,510	**0.8**
PM	203	**0.1**
Total =	9,281	**4.6**

Notes:

1 Assumed gasoline profile for HHV (NIST Chemistry WebBook)
2 NOx and CO EFs provided by manufacturer (John Zink)
3 PM EF from EPA ICR Protocol
4 VOC EF from AP-42 Table 13.5-1
5 Destruction efficiency provided by manufacturer is 98% (John Zink)
6 Only Gasoline, Naphtha, and Denatured Ethanol loading operations will be controlled
7 VOC emissions include both uncombusted organics and organics formed during combustion
8 Pilot gas flow rate provided by manufacturer (John Zink)
9 LPG density per Enggcyclopedia
10 LPG EF from AP-42 Table 1.5-1
11 Vapor control device (flare) expected to operate 8 hr/day max

Attachment G-5: Facility PTE Emissions
Component Fugitives

Component Type	Number of Components [1]	kg/hr/source	lb/hr/source	Operating Hours	Emissions (lb/yr)
Flanges	359	8.00E-06	1.76E-05	8760	55
Connector	34	8.00E-06	1.76E-05	8760	5
Others	38	1.30E-04	2.87E-04	8760	95
Pumps	8	5.40E-04	1.19E-03	8760	83
Valves	154	4.30E-05	9.48E-05	8760	128
Total	593			Total, lb/y =	**367**
				Total, tpy =	**0.2**

Notes:

1 Total component counts include proposed estimates for Phase I

Attachment G-6: Facility PTE Emissions
Diesel Generator

Pollutant	Tier 4 Emission Factor (g/kWh)	Sulfur Content (ppm) [3]	SO2 EF (lbm/gal) [4]	Max Fuel Consumption (gal/hr)	Engine Capacity (bhp) [1]	Engine Capacity (kW)	Operating Hours (hrs/yr) [3]	Tier 4 Emissions (lb/yr)	Tier 4 Emissions (tpy)
VOCs	0.19			8.25	300	224	4745	445	0.2
NOx	0.4			8.25	300	224	4745	936	0.5
SOx [3]		15	3.63E-05	8.25	300	224	4745	1.42	0.0
PM	0.02			8.25	300	224	4745	47	0.0
CO	3.5			8.25	300	224	4745	8,192	4.1
							Total =	**9,622**	**4.8**

Notes:

1 Diesel Generator will be no more than 300 hp and EPA Tier 4 certified

2 Diesel Generator will operatate at most 13 hours per day

3 Sulfur content based on EPA standard for ULSD of 15 ppm.

4 SO2 EF derived from mass balance using liq diesel density 7.1 lb/gal (AP-42), liq diesel MW =188 (TANKS 4.0), MW SO2 =64.06

Attachment G-7: Facility PTE Emissions
Storage Tanks

										EPA TANKS 4.0d VOC Losses				
	Tank		Tank Working Capacity		Throughput			Standing	Working	Rim Seal	Withdrawal	Deck Fitting	Deck Seam	Total
Tank No.	Type	Product	bbl.	gal	bbl/yr	gal/yr	TVP Method	lb/yr	lb/yr	lb/yr	lb/yr	lb/yr	lb/yr	lb/yr
Tank 1	IFR	Gasoline/ Naphtha	306,600	12,877,200	387,022	16,254,939	Gasoline/ Naphtha, RVP = 10.5, Slope 3			2,486	88	3,346	431	**6,351**
Tank 2	IFR	Jet Fuel	302,400	12,700,800	793,000	33,306,000	AP-42, Chapter 7, Table 7.1-2 (Jet Kerosene); TVP= 0.015			8	201	8		**217**
Tank 4	IFR	Diesel	315,000	13,230,000	219,000	9,198,000	AP-42, Chapter 7, Table 7.1-2 (Distillate Fuel Oil No. 2) TVP= 0.012			1	59	3	0	**64**
Tank 4	IFR	Gasoline/ Naphtha	315,000	13,230,000	397,626	16,700,279	Gasoline/ Naphtha, RVP = 10.5, Slope 3			433	85	2,454	288	**3,260**
Tank 9	IFR	Gasoline/ Naphtha	130,200	5,468,400	164,352	6,902,782	Gasoline/ Naphtha RVP = 10.5, Slope 3			1,801	52	2,877	226	**4,955**
AST 1	IFR	Denatured Ethanol/ Diesel	25,400	1,066,800	15,817	664,300	TANKS database; VP equation constants for organic liquids (Denatured Ethanol)			86	12	90		**189**
AST 2	IFR	Denatured Ethanol/ Diesel	25,400	1,066,800	15,817	664,300	TANKS database; VP equation constants for organic liquids (Denatured Ethanol)			86	12	90		**189**
AST 3	IFR	Denatured Ethanol/ Diesel	25,400	1,066,800	15,817	664,300	TANKS database; VP equation constants for organic liquids (Denatured Ethanol)			86	12	90		**189**
AST 4	IFR	Denatured Ethanol/ Diesel	25,400	1,066,800	15,817	664,300	TANKS database; VP equation constants for organic liquids (Denatured Ethanol)			86	12	90		**189**
AST 5	IFR	Denatured Ethanol/ Diesel	25,400	1,066,800	15,817	664,300	TANKS database; VP equation constants for organic liquids (Denatured Ethanol)			86	12	90		**189**
AST 6	IFR	Denatured Ethanol/ Diesel	25,400	1,066,800	15,817	664,300	TANKS database; VP equation constants for organic liquids (Denatured Ethanol)			86	12	90		**189**
					2,055,900	86,347,800	Total, lb/y =	**0**	**0**	**5,246**	**559**	**9,228**	**945**	**15,979**
							Total, tpy =	**0.0**	**0.0**	**2.6**	**0.3**	**4.6**	**0.5**	**8.0**

Notes:

1 Gasoline/ Naphtha throughputs for Tanks 1, 4, and 9 were proportioned based on tank capacities.

2 Tank 4 was modeled for 7 months of Gasoline/ Naphtha service and 5 months of Diesel service (most conservative emission scenario, i.e. PTE)

3 ASTs 1-6 were modeled using denatured ethanol properties (most conservative emission scenario, i.e. PTE)

Attachment G-8: Facility PTE Emissions
GHG Combustion Emissions

Fuel Properties

Fuel	HHV (mmBTU/gal)	CO2 EF (kg/mmBTU)	CH4 EF (kg/mmBTU)	N2O EF (kg/mmBTU)
Propane	0.091	61.46	0.003	0.006
Gasoline	0.125	70.22	0.003	0.006
Diesel	0.138	73.96	0.003	0.006

Fuel Usage

Pollutant	Max Fuel Consumption (gal/hr)	Operating Hours (hrs/yr)	Fuel (gal/yr)
Flare Pilot Gas (Propane)	0.59	2920	1,733
Flare Loading Rack Vapors (Gasoline)	22.44	2920	65,525
Diesel Generator	8.25	4745	39,146

GHG Emissions (Metric Tons)

Fuel	CO2 (MT/yr)	CH4 (MT/yr)	N2O (MT/yr)	CO2e (MT/yr)
Flare Pilot Gas (Propane)	10	0.0	0.0	10
Flare Loading Rack Vapors (Gasoline)	575	0.0	0.0	590
Diesel Generator	400	0.0	0.0	410
Total, metric ton/ yr =	984	0.0	0.1	**1,010**

GHG Emissions (Short Tons)

Fuel	CO2 (tpy)	CH4 (tpy)	N2O (tpy)	CO2e (tpy)
Flare Pilot Gas (Propane)	11	0.0	0.0	11
Flare Loading Rack Vapors (Gasoline)	634	0.0	0.1	651
Diesel Generator	440	0.0	0.0	452
Total, short ton/ yr =	1,085	0.0	0.1	**1,114**

Notes:
1 HHVs and CO2 EFs per Table C-1 of 40 CFR Part 98
2 HHVs and CO2 EFs per Table C-2 of 40 CFR Part 98

Attachment H

TANKS 4.09d Model Output

Kauai Terminal Upgrade Project – Phase I
Application for an Initial Covered Source Permit

Mid Pac Petroleum, LLC
Kauai Petroleum Co., Ltd.
Petroleum Bulk Loading Terminal
Permit No. 0370-01-N

Mid Pac PETROLEUM

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	AST 1
City:	Lihue
State:	Hawaii
Company:	Kauai Petroleum Company, Ltd.
Type of Tank:	Internal Floating Roof Tank
Description:	

Tank Dimensions

Diameter (ft):	12.00
Volume (gallons):	25,400.00
Turnovers:	26.15
Self Supp. Roof? (y/n):	Y
No. of Columns:	0.00
Eff. Col. Diam. (ft):	0.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	Aluminum/Specular
Shell Condition	Good
Roof Color/Shade:	Aluminum/Specular
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Vapor-mounted
Secondary Seal	None

Deck Characteristics

Deck Fitting Category:	Detail
Deck Type:	Welded

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	2
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Lihue, Hawaii (Avg Atmospheric Pressure = 14.67 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

AST 1 - Internal Floating Roof Tank
Lihue, Hawaii

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Denatured ethanol/ Diesel	All	81.19	74.86	87.52	76.92	1.3049	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.728

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

AST 1 - Internal Floating Roof Tank
Lihue, Hawaii

Annual Emission Calcaulations	
Rim Seal Losses (lb):	86.2224
Seal Factor A (lb-mole/ft-yr):	6.7000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.2000
Value of Vapor Pressure Function:	0.0233

Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.3049
Tank Diameter (ft):	12.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700
Product Factor:	1.0000
Withdrawal Losses (lb):	12.3236
Number of Columns:	0.0000
Effective Column Diameter (ft):	0.0000
Annual Net Throughput (gal/yr.):	664,300.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.6100
Tank Diameter (ft):	12.0000
Deck Fitting Losses (lb):	90.0831
Value of Vapor Pressure Function:	0.0233
Vapor Molecular Weight (lb/lb-mole):	46.0700
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	84.0000
Deck Seam Losses (lb):	0.0000
Deck Seam Length (ft):	0.0000
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000
Deck Seam Length Factor(ft/sqft):	0.0000
Tank Diameter (ft):	12.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700
Product Factor:	1.0000
Total Losses (lb):	188.6291

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1	36.00	5.90	1.20	38.6070
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	15.0138
Roof Leg or Hanger Well/Adjustable	2	7.90	0.00	0.00	16.9442
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	12.8680
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	6.6490

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

AST 1 - Internal Floating Roof Tank
Lihue, Hawaii

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Denatured ethanol/ Diesel	86.22	12.32	90.08	0.00	188.63

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	AST 2
City:	Lihue
State:	Hawaii
Company:	Kauai Petroleum Company, Ltd.
Type of Tank:	Internal Floating Roof Tank
Description:	

Tank Dimensions

Diameter (ft):	12.00
Volume (gallons):	25,400.00
Turnovers:	26.15
Self Supp. Roof? (y/n):	Y
No. of Columns:	0.00
Eff. Col. Diam. (ft):	0.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	Aluminum/Specular
Shell Condition	Good
Roof Color/Shade:	Aluminum/Specular
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Vapor-mounted
Secondary Seal	None

Deck Characteristics

Deck Fitting Category:	Detail
Deck Type:	Welded

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	2
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Lihue, Hawaii (Avg Atmospheric Pressure = 14.67 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

AST 2 - Internal Floating Roof Tank
Lihue, Hawaii

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Denatured ethanol/ Diesel	All	81.19	74.86	87.52	76.92	1.3049	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

AST 2 - Internal Floating Roof Tank
Lihue, Hawaii

Annual Emission Calcaulations	
Rim Seal Losses (lb):	86.2224
Seal Factor A (lb-mole/ft-yr):	6.7000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.2000
Value of Vapor Pressure Function:	0.0233
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.3049
Tank Diameter (ft):	12.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700
Product Factor:	1.0000
Withdrawal Losses (lb):	12.3236
Number of Columns:	0.0000
Effective Column Diameter (ft):	0.0000
Annual Net Throughput (gal/yr.):	664,300.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.6100
Tank Diameter (ft):	12.0000
Deck Fitting Losses (lb):	90.0831
Value of Vapor Pressure Function:	0.0233
Vapor Molecular Weight (lb/lb-mole):	46.0700
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	84.0000
Deck Seam Losses (lb):	0.0000
Deck Seam Length (ft):	0.0000
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000
Deck Seam Length Factor(ft/sqft):	0.0000
Tank Diameter (ft):	12.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700
Product Factor:	1.0000
Total Losses (lb):	188.6291

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1	36.00	5.90	1.20	38.6070
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	15.0138
Roof Leg or Hanger Well/Adjustable	2	7.90	0.00	0.00	16.9442
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	12.8690
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	6.6490

TANKS 4.0.9d
Emissions Report - Detail Format

Individual Tank Emission Totals

Emissions Report for: Annual

AST 2 - Internal Floating Roof Tank
Lihue, Hawaii

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Denatured ethanol/ Diesel	86.22	12.32	90.08	0.00	188.63

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	AST 3
City:	Lihue
State:	Hawaii
Company:	Kauai Petroleum Company, Ltd.
Type of Tank:	Internal Floating Roof Tank
Description:	

Tank Dimensions

Diameter (ft):	12.00
Volume (gallons):	25,400.00
Turnovers:	26.15
Self Supp. Roof? (y/n):	Y
No. of Columns:	0.00
Eff. Col. Diam. (ft):	0.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	Aluminum/Specular
Shell Condition	Good
Roof Color/Shade:	Aluminum/Specular
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Vapor-mounted
Secondary Seal	None

Deck Characteristics

Deck Fitting Category:	Detail
Deck Type:	Welded

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	2
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Lihue, Hawaii (Avg Atmospheric Pressure = 14.67 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

AST 3 - Internal Floating Roof Tank
Lihue, Hawaii

		Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp	Vapor Pressure (psia)			Vapor Mol.	Liquid Mass	Vapor Mass	Mol.	Basis for Vapor Pressure
Mixture/Component	Month	Avg.	Min.	Max.	(deg F)	Avg.	Min.	Max.	Weight.	Fract.	Fract.	Weight	Calculations
Denatured ethanol/ Diesel	All	81.19	74.86	87.52	76.92	1.3049	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

AST 3 - Internal Floating Roof Tank
Lihue, Hawaii

Annual Emission Calculations	
Rim Seal Losses (lb):	86.2224
Seal Factor A (lb-mole/ft-yr):	6.7000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.2000
Value of Vapor Pressure Function:	0.0233
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.3049
Tank Diameter (ft):	12.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700
Product Factor:	1.0000
Withdrawal Losses (lb):	12.3236
Number of Columns:	0.0000
Effective Column Diameter (ft):	0.0000
Annual Net Throughput (gal/yr.):	864,300.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.6100
Tank Diameter (ft):	12.0000
Deck Fitting Losses (lb):	90.0831
Value of Vapor Pressure Function:	0.0233
Vapor Molecular Weight (lb/lb-mole):	46.0700
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	84.0000
Deck Seam Losses (lb):	0.0000
Deck Seam Length (ft):	0.0000
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000
Deck Seam Length Factor(ft/sqft):	0.0000
Tank Diameter (ft):	12.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700
Product Factor:	1.0000
Total Losses (lb):	188.6291

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1	36.00	5.90	1.20	38.6070
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	15.0138
Roof Leg or Hanger Well/Adjustable	2	7.90	0.00	0.00	16.9442
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	12.8690
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	6.6490

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

AST 3 - Internal Floating Roof Tank
Lihue, Hawaii

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Denatured ethanol/ Diesel	86.22	12.32	90.08	0.00	188.63

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	AST 4
City:	Lihue
State:	Hawaii
Company:	Kauai Petroleum Company, Ltd.
Type of Tank:	Internal Floating Roof Tank
Description:	

Tank Dimensions

Diameter (ft):	12.00
Volume (gallons):	25,400.00
Turnovers:	26.15

Self Supp. Roof? (y/n):	Y
No. of Columns:	0.00
Eff. Col. Diam. (ft):	0.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	Aluminum/Specular
Shell Condition	Good
Roof Color/Shade:	Aluminum/Specular
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Vapor-mounted
Secondary Seal	None

Deck Characteristics

Deck Fitting Category:	Detail
Deck Type:	Welded

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	2
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Lihue, Hawaii (Avg Atmospheric Pressure = 14.67 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

AST 4 - Internal Floating Roof Tank
Lihue, Hawaii

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Denatured ethanol/ Diesel	All	81.19	74.86	87.52	76.92	1.3049	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

AST 4 - Internal Floating Roof Tank
Lihue, Hawaii

Annual Emission Calculations	
Rim Seal Losses (lb):	86.2224
Seal Factor A (lb-mole/ft-yr):	6.7000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.2000
Value of Vapor Pressure Function:	0.0233
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.3049
Tank Diameter (ft):	12.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700
Product Factor:	1.0000
Withdrawal Losses (lb):	12.3236
Number of Columns:	0.0000
Effective Column Diameter (ft):	0.0000
Annual Net Throughput (gal/yr.):	684,300.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.6100
Tank Diameter (ft):	12.0000
Deck Fitting Losses (lb):	90.0831
Value of Vapor Pressure Function:	0.0233
Vapor Molecular Weight (lb/lb-mole):	46.0700
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	84.0000
Deck Seam Losses (lb):	0.0000
Deck Seam Length (ft):	0.0000
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000
Deck Seam Length Factor(ft/sqft):	0.0000
Tank Diameter (ft):	12.0000

Vapor Molecular Weight (lb/lb-mole):	46.0700
Product Factor:	1.0000

Total Losses (lb): 188.6291

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1	36.00	5.90	1.20	38.6070
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	15.0139
Roof Leg or Hanger Well/Adjustable	2	7.90	0.00	0.00	16.9442
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	12.8680
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.84	6.6490

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

AST 4 - Internal Floating Roof Tank
Lihue, Hawaii

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Denatured ethanol/ Diesel	86.22	12.32	90.08	0.00	188.63

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	AST 5
City:	Lihue
State:	Hawaii
Company:	Kauai Petroleum Company, Ltd.
Type of Tank:	Internal Floating Roof Tank
Description:	

Tank Dimensions

Diameter (ft):	12.00
Volume (gallons):	25,400.00
Turnovers:	26.15
Self Supp. Roof? (y/n):	Y
No. of Columns:	0.00
Eff. Col. Diam. (ft):	0.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	Aluminum/Specular
Shell Condition	Good
Roof Color/Shade:	Aluminum/Specular
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Vapor-mounted
Secondary Seal	None

Deck Characteristics

Deck Fitting Category:	Detail
Deck Type:	Welded

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	2
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Lihue, Hawaii (Avg Atmospheric Pressure = 14.67 psia)

TANKS 4.0.9d

Emissions Report - Detail Format
Liquid Contents of Storage Tank

AST 5 - Internal Floating Roof Tank
Lihue, Hawaii

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Denatured ethanol/ Diesel	All	81.19	74.86	87.52	76.92	1.3049	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

AST 5 - Internal Floating Roof Tank
Lihue, Hawaii

Annual Emission Calculations

Rim Seal Losses (lb):	86.2224
Seal Factor A (lb-mole/ft-yr):	6.7000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.2000
Value of Vapor Pressure Function:	0.0233
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.3049
Tank Diameter (ft):	12.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700
Product Factor:	1.0000
Withdrawal Losses (lb):	12.3236
Number of Columns:	0.0000
Effective Column Diameter (ft):	0.0000
Annual Net Throughput (gal/yr.):	664,300.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.6100
Tank Diameter (ft):	12.0000
Deck Fitting Losses (lb):	90.0831
Value of Vapor Pressure Function:	0.0233
Vapor Molecular Weight (lb/lb-mole):	46.0700
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	84.0000
Deck Seam Losses (lb):	0.0000
Deck Seam Length (ft):	0.0000
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000
Deck Seam Length Factor(ft/sqft):	0.0000
Tank Diameter (ft):	12.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700
Product Factor:	1.0000
Total Losses (lb):	188.6291

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1	36.00	5.90	1.20	38.6070
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	15.0138
Roof Leg or Hanger Well/Adjustable	2	7.90	0.00	0.00	16.9442
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	12.8690
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	6.6490

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

AST 5 - Internal Floating Roof Tank
Lihue, Hawaii

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Denatured ethanol/ Diesel	86.22	12.32	90.08	0.00	188.63

TANKS 4.0.9d
Emissions Report - Detail Format

Tank Indentification and Physical Characteristics

Identification

User Identification:	AST 6
City:	Lihue
State:	Hawaii
Company:	Kauai Petroleum Company, Ltd.
Type of Tank:	Internal Floating Roof Tank
Description:	

Tank Dimensions

Diameter (ft):	12.00
Volume (gallons):	25,400.00
Turnovers:	26.15
Self Supp. Roof? (y/n):	Y
No. of Columns:	0.00
Eff. Col. Diam. (ft):	0.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	Aluminum/Specular
Shell Condition	Good
Roof Color/Shade:	Aluminum/Specular
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Vapor-mounted
Secondary Seal	None

Deck Characteristics

Deck Fitting Category:	Detail
Deck Type:	Welded

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	2
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Lihue, Hawaii (Avg Atmospheric Pressure = 14.67 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

AST 6 - Internal Floating Roof Tank
Lihue, Hawaii

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Denatured ethanol/ Diesel	All	81.19	74.88	87.52	76.92	1.3049	N/A	N/A	46.0700			46.07	Option 2: A=8.12187, B=1598.673, C=226.726

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

AST 6 - Internal Floating Roof Tank
Lihue, Hawaii

Annual Emission Calcaulations	
Rim Seal Losses (lb):	86.2224
Seal Factor A (lb-mole/ft-yr):	6.7000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.2000
Value of Vapor Pressure Function:	0.0233
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.3049
Tank Diameter (ft):	12.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700
Product Factor:	1.0000

Withdrawal Losses (lb):	12.3236
Number of Columns:	0.0000
Effective Column Diameter (ft):	0.0000
Annual Net Throughput (gal/yr.):	684,300.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	6.6100
Tank Diameter (ft):	12.0000
Deck Fitting Losses (lb):	90.0831
Value of Vapor Pressure Function:	0.0233
Vapor Molecular Weight (lb/lb-mole):	46.0700
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	84.0000
Deck Seam Losses (lb):	0.0000
Deck Seam Length (ft):	0.0000
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000
Deck Seam Length Factor(ft/sqft):	0.0000
Tank Diameter (ft):	12.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700
Product Factor:	1.0000
Total Losses (lb):	188.6291

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1	36.00	5.90	1.20	38.6070
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	15.0138
Roof Leg or Hanger Well/Adjustable	2	7.90	0.00	0.00	16.9442
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	12.8690
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	6.6490

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

AST 6 - Internal Floating Roof Tank
Lihue, Hawaii

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Denatured ethanol/ Diesel	86.22	12.32	90.08	0.00	188.63

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Tank 1
City:	Lihue
State:	Hawaii
Company:	Kauai Petroleum Company, Ltd.
Type of Tank:	Internal Floating Roof Tank
Description:	

Tank Dimensions

Diameter (ft):	35.90
Volume (gallons):	306,600.00
Turnovers:	53.02
Self Supp. Roof? (y/n):	N
No. of Columns:	1.00
Eff. Col. Diam. (ft):	1.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Mechanical Shoe
Secondary Seal	None

Deck Characteristics

Deck Fitting Category:	Detail
Deck Type:	Bolted

Construction:	Sheet
Deck Seam:	Sheet: 5 Ft Wide
Deck Seam Len. (ft):	202.45

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Gask.	1
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	12
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Stub Drain (1-in. Diameter)/Slit Fabric Seal 10% Open	11
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Lihue, Hawaii (Avg Atmospheric Pressure = 14.67 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Tank 1 - Internal Floating Roof Tank
Lihue, Hawaii

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Kauai Gasoline/ Naphtha	All	77.71	73.81	81.61	75.60	7.6149	N/A	N/A	66.0000			92.00	Option 4: RVP=10.5, ASTM Slope=3

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Tank 1 - Internal Floating Roof Tank
Lihue, Hawaii

Annual Emission Calcaulations	
Rim Seal Losses (lb):	2,486.3715
Seal Factor A (lb-mole/ft-yr):	5.8000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.3000
Value of Vapor Pressure Function:	0.1809
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	7.6149
Tank Diameter (ft):	35.9000
Vapor Molecular Weight (lb/lb-mole):	66.0000
Product Factor:	1.0000
Withdrawal Losses (lb):	87.7737
Number of Columns:	1.0000
Effective Column Diameter (ft):	1.0000
Annual Net Throughput (gal/yr.):	16,254,939.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	5.6600
Tank Diameter (ft):	35.9000
Deck Fitting Losses (lb):	3,346.8804
Value of Vapor Pressure Function:	0.1809
Vapor Molecular Weight (lb/lb-mole):	66.0000
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	280.2000
Deck Seam Losses (lb):	430.9232
Deck Seam Length (ft):	202.4500
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.1400
Deck Seam Length Factor(ft/sqft):	0.2000
Tank Diameter (ft):	35.9000
Vapor Molecular Weight (lb/lb-mole):	66.0000
Product Factor:	1.0000
Total Losses (lb):	6,350.9588

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Gasketed	1	31.00	5.20	1.30	370.1735
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	167.1751
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Gask.	1	33.00	0.00	0.00	394.0556
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1	76.00	0.00	0.00	907.5220
Roof Leg or Hanger Well/Adjustable	12	7.90	0.00	0.00	1,132.0143
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	143.2930
Stub Drain (1-in. Diameter)/	11	1.20	0.00	0.00	157.6222
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	74.0347

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Tank 1 - Internal Floating Roof Tank
Lihue, Hawaii

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Kauai Gasoline/ Naphtha	2,486.37	87.77	3,345.89	430.92	6,350.96

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Tank 2
City:	Lihue
State:	Hawaii
Company:	Kauai Petroleum Company, Ltd.
Type of Tank:	Internal Floating Roof Tank
Description:	

Tank Dimensions

Diameter (ft):	40.00
Volume (gallons):	302,400.00
Turnovers:	110.14
Self Supp. Roof? (y/n):	N
No. of Columns:	1.00
Eff. Col. Diam. (ft):	1.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Vapor-mounted
Secondary Seal	None

Deck Characteristics

Deck Fitting Category:	Detail
Deck Type:	Welded

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Gask.	1
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	6
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Slotted Guide-Pole/Sample Well/Gask. Sliding Cover, w. Float	1

Meterological Data used in Emissions Calculations: Lihue, Hawaii (Avg Atmospheric Pressure = 14.67 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Tank 2 - Internal Floating Roof Tank
Lihue, Hawaii

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Jet kerosene	All	77.71	73.81	81.61	75.80	0.0141	N/A	N/A	130.0000			162.00	Option 1: VP70 = .011 VP80 = .015

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Tank 2 - Internal Floating Roof Tank
Lihue, Hawaii

Annual Emission Calcaulations	
Rim Seal Losses (lb):	8.3633
Seal Factor A (lb-mole/ft-yr):	6.7000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.2000
Value of Vapor Pressure Function:	0.0002
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0141
Tank Diameter (ft):	40.0000
Vapor Molecular Weight (lb/lb-mole):	130.0000
Product Factor:	1.0000
Withdrawal Losses (lb):	201.2047
Number of Columns:	1.0000
Effective Column Diameter (ft):	1.0000
Annual Net Throughput (gal/yr.):	33,306,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	7.0000
Tank Diameter (ft):	40.0000
Deck Fitting Losses (lb):	7.8203
Value of Vapor Pressure Function:	0.0002
Vapor Molecular Weight (lb/lb-mole):	130.0000
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	250.6000
Deck Seam Losses (lb):	0.0000
Deck Seam Length (ft):	0.0000
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000
Deck Seam Length Factor(ft/sqft):	0.0000
Tank Diameter (ft):	40.0000
Vapor Molecular Weight (lb/lb-mole):	130.0000
Product Factor:	1.0000
Total Losses (lb):	217.3883

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Gasketed	1	31.00	5.20	1.30	0.9674
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	0.4369
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Gask.	1	33.00	0.00	0.00	1.0298
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1	76.00	0.00	0.00	2.3717
Roof Leg or Hanger Well/Adjustable	6	7.90	0.00	0.00	1.4792
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	0.3745
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	0.1935
Slotted Guide-Pole/Sample Well/Gask. Sliding Cover, w. Float	1	31.00	36.00	2.00	0.9674

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Tank 2 - Internal Floating Roof Tank
Lihue, Hawaii

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Jet kerosene	8.36	201.20	7.82	0.00	217.39

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Tank 4
City:	Lihue
State:	Hawaii

Company:	Kauai Petroleum Company, Ltd.
Type of Tank:	Internal Floating Roof Tank
Description:	

Tank Dimensions

Diameter (ft):	38.00
Volume (gallons):	315,000.00
Turnovers:	82.22
Self Supp. Roof? (y/n):	N
No. of Columns:	1.00
Eff. Col. Diam. (ft):	1.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Liquid-mounted
Secondary Seal	None

Deck Characteristics

Deck Fitting Category:	Detail
Deck Type:	Bolted
Construction:	Sheet
Deck Seam:	Sheet: 5 Ft Wide
Deck Seam Len. (ft):	226.82

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Gask.	1
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	20
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Stub Drain (1-in. Diameter)/Slit Fabric Seal 10% Open	12
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Lihue, Hawaii (Avg Atmospheric Pressure = 14.67 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Tank 4 - Internal Floating Roof Tank
Lihue, Hawaii

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	Jan	75.41	71.75	79.07	75.60	0.0106	N/A	N/A	130.0000			188.00	Option 1: VP70 = .009 VP80 = .012
Distillate fuel oil no. 2	Feb	75.89	71.71	79.67	75.60	0.0107	N/A	N/A	130.0000			188.00	Option 1: VP70 = .009 VP80 = .012
Distillate fuel oil no. 2	Mar	76.40	72.47	80.32	75.60	0.0109	N/A	N/A	130.0000			188.00	Option 1: VP70 = .009 VP80 = .012
Distillate fuel oil no. 2	Apr	77.16	73.17	81.15	75.60	0.0111	N/A	N/A	130.0000			188.00	Option 1: VP70 = .009 VP80 = .012
Distillate fuel oil no. 2	May	78.17	73.99	82.36	75.60	0.0115	N/A	N/A	130.0000			188.00	Option 1: VP70 = .009 VP80 = .012
Kauai Gasoline/ Naphtha	Jun	79.16	74.95	83.35	75.60	7.8153	N/A	N/A	66.0000			92.00	Option 4: RVP=10.5, ASTM Slope=3
Kauai Gasoline/ Naphtha	Jul	79.61	75.47	83.75	75.60	7.8792	N/A	N/A	66.0000			92.00	Option 4: RVP=10.5, ASTM Slope=3
Kauai Gasoline/ Naphtha	Aug	79.84	75.70	83.98	75.60	7.9117	N/A	N/A	66.0000			92.00	Option 4: RVP=10.5, ASTM Slope=3
Kauai Gasoline/ Naphtha	Sep	79.57	75.40	83.73	75.60	7.8730	N/A	N/A	66.0000			92.00	Option 4: RVP=10.5, ASTM Slope=3
Kauai Gasoline/ Naphtha	Oct	78.47	74.69	82.25	75.60	7.7197	N/A	N/A	66.0000			92.00	Option 4: RVP=10.5, ASTM Slope=3
Kauai Gasoline/ Naphtha	Nov	77.16	73.87	80.44	75.60	7.5393	N/A	N/A	66.0000			92.00	Option 4: RVP=10.5, ASTM Slope=3
Kauai Gasoline/ Naphtha	Dec	75.87	72.49	79.24	75.60	7.3656	N/A	N/A	66.0000			92.00	Option 4: RVP=10.5, ASTM Slope=3

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Tank 4 - Internal Floating Roof Tank
Lihue, Hawaii

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	0.1193	0.1202	0.1226	0.1252	0.1286	62.8270	63.5817	63.9688	63.5085	61.7104	59.6404	57.6908
Seal Factor A (lb-mole/ft-yr):	1.6000	1.6000	1.6000	1.6000	1.6000	1.6000	1.6000	1.6000	1.6000	1.6000	1.6000	1.6000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000
Value of Vapor Pressure Function:	0.0002	0.0002	0.0002	0.0002	0.0002	0.1879	0.1901	0.1913	0.1899	0.1845	0.1784	0.1725
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0106	0.0107	0.0109	0.0111	0.0115	7.8153	7.8792	7.9117	7.8730	7.7197	7.5393	7.3656
Tank Diameter (ft):	38.0000	38.0000	38.0000	38.0000	38.0000	38.0000	38.0000	38.0000	38.0000	38.0000	38.0000	38.0000
Vapor Molecular Weight (lb/lb-mole):	130.0000	130.0000	130.0000	130.0000	130.0000	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Withdrawal Losses (lb):	11.8804	11.8804	11.8804	11.8804	11.8804	12.1525	12.1525	12.1525	12.1525	12.1525	12.1525	12.1525
Number of Columns:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Effective Column Diameter (ft):	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Net Throughput (gal/mo.):	1,839,600.0000	1,839,600.0000	1,839,600.0000	1,839,600.0000	1,839,600.0000	2,385,754.1900	2,385,754.1900	2,385,754.1900	2,385,754.1900	2,385,754.1900	2,385,754.1900	2,385,754.1900
Shell Clingage Factor (bbl/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	7.1000	7.1000	7.1000	7.1000	7.1000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000	5.6000
Tank Diameter (ft):	38.0000	38.0000	38.0000	38.0000	38.0000	38.0000	38.0000	38.0000	38.0000	38.0000	38.0000	38.0000
Deck Fitting Losses (lb):	0.6759	0.6813	0.6947	0.7094	0.7287	356.0883	360.3659	362.5599	359.9512	349.7600	338.0277	326.9779
Value of Vapor Pressure Function:	0.0002	0.0002	0.0002	0.0002	0.0002	0.1879	0.1901	0.1913	0.1899	0.1845	0.1784	0.1725
Vapor Molecular Weight (lb/lb-mole):	130.0000	130.0000	130.0000	130.0000	130.0000	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	344.6000	344.6000	344.6000	344.6000	344.6000	344.6000	344.6000	344.6000	344.6000	344.6000	344.6000	344.6000
Deck Seam Losses (lb):	0.0793	0.0799	0.0815	0.0832	0.0855	41.7784	42.2813	42.5387	42.2326	41.0369	39.6604	38.3639
Deck Seam Length (ft):	226.8200	226.8200	226.8200	226.8200	226.8200	226.8200	226.8200	226.8200	226.8200	226.8200	226.8200	226.8200
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400
Deck Seam Length Factor(ft/sqft):	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000
Tank Diameter (ft):	38.0000	38.0000	38.0000	38.0000	38.0000	38.0000	38.0000	38.0000	38.0000	38.0000	38.0000	38.0000
Vapor Molecular Weight (lb/lb-mole):	130.0000	130.0000	130.0000	130.0000	130.0000	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000	66.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total Losses (lb):	12.7549	12.7618	12.7793	12.7982	12.8232	472.8472	478.3814	481.2199	477.8448	464.6599	449.4810	435.1851

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Gasketed	1	31.00	5.20	1.30	222.1638
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	100.3320
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Gask.	1	33.00	0.00	0.00	236.4969
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1	76.00	0.00	0.00	544.6595
Roof Leg or Hanger Well/Adjustable	20	7.90	0.00	0.00	1,132.3185
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	85.9988
Stub Drain (1-in. Diameter)/	12	1.20	0.00	0.00	103.1986
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	44.4328

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Tank 4 - Internal Floating Roof Tank
Lihue, Hawaii

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Distillate fuel oil no. 2	0.62	59.40	3.49	0.41	63.92
Kauai Gasoline/ Naphtha	432.93	85.07	2,453.73	287.89	3,259.62

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Tank 9
City:	Lihue
State:	Hawaii
Company:	Kauai Petroleum Company, Ltd.
Type of Tank:	Internal Floating Roof Tank
Description:	

Tank Dimensions

Diameter (ft):	26.00
Volume (gallons):	130,200.00
Turnovers:	53.02
Self Supp. Roof? (y/n):	N
No. of Columns:	1.00
Eff. Col. Diam. (ft):	1.00

Paint Characteristics

Internal Shell Condition:	Light Rust

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Mechanical Shoe
Secondary Seal	None

Deck Characteristics

Deck Fitting Category:	Detail
Deck Type:	Bolted
Construction:	Sheet
Deck Seam:	Sheet: 5 Ft Wide
Deck Seam Len. (ft):	106.19

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Unbolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Gask.	1
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	7
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Stub Drain (1-in. Diameter)/Slit Fabric Seal 10% Open	6
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	2

Meterological Data used in Emissions Calculations: Lihue, Hawaii (Avg Atmospheric Pressure = 14.67 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Tank 9 - Internal Floating Roof Tank
Lihue, Hawaii

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Kaual Gasoline/ Naphtha	All	77.71	73.81	81.61	75.60	7.6149	N/A	N/A	66.0000			92.00	Option 4: RVP=10.5, ASTM Slope=3

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Tank 9 - Internal Floating Roof Tank
Lihue, Hawaii

Annual Emission Calcaulations	
Rim Seal Losses (lb):	1,800.7147
Seal Factor A (lb-mole/ft-yr):	5.8000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.3000
Value of Vapor Pressure Function:	0.1809
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	7.6149
Tank Diameter (ft):	26.0000
Vapor Molecular Weight (lb/lb-mole):	66.0000
Product Factor:	1.0000
Withdrawal Losses (lb):	51.9976
Number of Columns:	1.0000
Effective Column Diameter (ft):	1.0000
Annual Net Throughput (gal/yr.):	6,902,782.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	5.6000
Tank Diameter (ft):	26.0000
Deck Fitting Losses (lb):	2,876.6060
Value of Vapor Pressure Function:	0.1809
Vapor Molecular Weight (lb/lb-mole):	66.0000
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	240.9000
Deck Seam Losses (lb):	226.0298
Deck Seam Length (ft):	106.1900
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.1400
Deck Seam Length Factor(ft/sqft):	0.2000
Tank Diameter (ft):	26.0000
Vapor Molecular Weight (lb/lb-mole):	66.0000

Product Factor: 1.0000

Total Losses (lb): 4,955.3481

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Unbolted Cover, Gasketed	1	31.00	5.20	1.30	370.1735
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	167.1751
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Gask.	1	33.00	0.00	0.00	394.0556
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1	76.00	0.00	0.00	907.5220
Roof Leg or Hanger Well/Adjustable	7	7.90	0.00	0.00	660.3417
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	143.2930
Stub Drain (1-in. Diameter)/	6	1.20	0.00	0.00	85.9758
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	2	6.20	1.20	0.94	148.0694

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Tank 9 - Internal Floating Roof Tank
Lihue, Hawaii

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Kauai Gasoline/ Naphtha	1,800.71	52.00	2,876.61	226.03	4,955.35

TANKS 4.0.9d
Emissions Report - Detail Format
Total Emissions Summaries - All Tanks in Report

Emissions Report for: Annual

Tank Identification				Losses (lbs)
AST 1	Kauai Petroleum Company, Ltd.	Internal Floating Roof Tank	Lihue, Hawaii	188.63
AST 2	Kauai Petroleum Company, Ltd.	Internal Floating Roof Tank	Lihue, Hawaii	188.63
AST 3	Kauai Petroleum Company, Ltd.	Internal Floating Roof Tank	Lihue, Hawaii	188.63
AST 4	Kauai Petroleum Company, Ltd.	Internal Floating Roof Tank	Lihue, Hawaii	188.63
AST 5	Kauai Petroleum Company, Ltd.	Internal Floating Roof Tank	Lihue, Hawaii	188.63
AST 6	Kauai Petroleum Company, Ltd.	Internal Floating Roof Tank	Lihue, Hawaii	188.63
Tank 1	Kauai Petroleum Company, Ltd.	Internal Floating Roof Tank	Lihue, Hawaii	6,350.96
Tank 2	Kauai Petroleum Company, Ltd.	Internal Floating Roof Tank	Lihue, Hawaii	217.39
Tank 4	Kauai Petroleum Company, Ltd.	Internal Floating Roof Tank	Lihue, Hawaii	3,323.54
Tank 9	Kauai Petroleum Company, Ltd.	Internal Floating Roof Tank	Lihue, Hawaii	4,955.35
Total Emissions for all Tanks:				15,979.01