Integrated Solid Waste Management Facility

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JURISDICTION
City & County of Honolulu, Hawaii

POPULATION
953,207 (2010 census)

COST-PER-HOUSEHOLD
PVT Land Company Ltd. is a privately owned and operated company. The PVT Integrated Solid Waste Management Facility was built and is operated at no cost to the City & County of Honolulu and its taxpayers.

APPROXIMATE BUDGET
The PVT Integrated Solid Waste Management Facility is privately owned and operated. It has an annual operating budget of approximately $14,000,000.
1) Executive Summary

PVT Land Company’s landfill management submission reflects the company’s continued success in managing essential C&D landfill services for Honolulu, Hawaii.

PVT operates the only C&D landfill on Oahu, the most populated island in the world’s most remote island chain. In addition to accepting C&D debris, we are Oahu’s only approved site for CERCLA waste, the emergency management contractor for natural disasters, and the disposal site for debris from the North Pacific.

In addition, we are Hawaii’s largest recycler, processing about 2,000 tons of C&D waste each day. PVT also offers LEED reporting to customers who wish to acquire LEED points when their debris is recycled.

The SWANA Excellence award would validate the technical excellence of PVT operations, which we view as crucial to not only acceptance in our tightly knit, primarily Hawaiian community but also our contribution to Oahu’s construction industry and Hawaii’s economy.

2) Site Overview

The PVT Integrated Solid Waste Management Facility serves the C&D landfill needs of the City & County of Honolulu, which comprises the entire island of Oahu, Hawaii, an area of 597 square miles with more than one million residents. The PVT C&D landfill is sited on 400 acres in Nanakuli, a community in West Oahu on the Waianae Coast. PVT has 80 full-time employees, and makes an effort to hire workers who live locally on the Waianae Coast.

Our Role in the ISWM Plan

The PVT landfill’s role in the City & County of Honolulu’s integrated solid waste management plan is significant. The plan mandates that PVT is the designated disposal point for all construction and demolition waste on the island of Oahu. In addition, we are Oahu’s only approved site for CERCLA waste; the emergency management contractor for natural disasters such as hurricanes; and the disposal site for debris shipped from the North Pacific, including Midway Island and Johnson Atoll. We also currently serve as one of 12 members on the C&C of Honolulu’s 2018 ISWM Plan Update Committee.

PVT accepts no household hazardous waste or yard materials (with the exception of wood and stumps) in the landfill, and operates no drop-off centers. The City & County of Honolulu’s Waste Management Division operates the drop-off centers and is responsible for segregating household waste.

Value to Hawaii’s Economy

As the only C&D landfill on Oahu, the PVT facility is essential to Hawaii’s construction industry, the state’s 4th largest industry sector. If there were no way to safely dispose of C&D debris, construction on Oahu would come to a halt causing major job loss and dealing a severe blow to Hawaii’s island economy.

In 2017, construction projects totaling more than $8.8 billion generated more than $4 billion to the state’s GDP according to the University of Hawaii Economic Research Organization. The industry supported more than 30,000 payroll jobs. The vast majority of this activity involves major public works projects and residential construction in Honolulu’s urban core. Virtually all the waste from these projects came to PVT.
Waste Diversion and Reclamation
The landfill has been in operation since 1985. PVT Land Company Ltd. assumed ownership and management responsibility in 1992. Overall site capacity is about 16 million cubic yards of waste. About 4.5 million cubic yards of space remain available.

With C&D waste coming to the PVT facility at a rate of up to 2,000 tons a day—430,000 tons annually—it is crucial that waste diversion and landfill compaction be optimized.

In 2014, PVT added a $4 million recycling system to its operations. This system currently enables PVT to divert about 50 percent of waste from disposal at the landfill. More than 27,000 tons of debris is processed annually as feedstock for use by energy providers. The yearly output of materials that are recycled also includes roughly 5,700 tons of reclaimed non-ferrous metals and 40,000 tons of concrete and rock, which are crushed for road cover. Large pieces of metal and concrete are separated out and don’t pass through the recycling system.

PVT is also engaged in a four-year reclamation project that will exhume 4.5 million cubic yards of waste disposed of in the landfill from 1985 to 2003. This waste is being recycled, reused, or processed as feedstock. Non-recoverable waste is returned to the landfill using compaction methodologies that optimize airspace. After two years, improved compaction has enabled the disposal of waste tonnage in the reclaimed area that was equivalent to that taken out, but requiring 100,000 fewer cubic yards of airspace.

PVT’s landfill reclamation is expected to continue for another two years or more.

LEED Tracking
PVT offers LEED (Leadership in Energy and Environmental Design) tracking and reporting for companies that want to acquire LEED points or are required to do so. Separation of waste materials for LEED points occurs at the PVT landfill because worksites are too space-constrained to implement such a system. Contractors who use PVT LEED services earn points based on the percentage of their waste that is recycled. PVT tracks and documents the weight and volume of the materials by type, and provides a recycle report for LEED documentation.

The PVT recycling system processes about 900 tons of waste each day. Only about 3-4 percent of that is non-recoverable and is disposed in the landfill.

The volume of waste recycled using PVT’s LEED tracking has risen steadily since the service was introduced.
3) Siting, Design and Construction

The landfill was developed in phases over its 33-year history. Phase One is sited on about 49 acres and received waste from 1985 until 2003. C&D waste disposal during that period had low compaction densities and produced a fill with substantial void space.

Phase Two of the landfill covers approximately 104 acres and consists of nine cells and an asbestos disposal area. All cells were constructed to meet or exceed Subtitle D design standards.

Geology and Hydrology
The geology that underlies the PVT landfill consists of lava flows of the Waianae Volcanic Series and consolidated calcareous marine sediments, partly overlain by consolidated non-calcareous deposits (older alluvium). Portions of the site were used as a quarry for coral rock and aggregate products prior to its development as a landfill.

The landfill is located over two non-potable aquifers, neither of which is considered ecologically important because of moderate salinity with chloride concentrations of 1,000 to 5,000 mg/l. The upper aquifer is currently used for irrigation and industrial purposes while the lower aquifer is not in use. Four PVT monitoring wells and an operational well (used for dust control) are located at the site and are regularly monitored per regulations. No drinking water wells are located on or within one mile of the facility.

Adjacent Land
Adjacent land is used for commercial, agricultural, and residential purposes. To the north are trucking and concrete and asphalt recycling facilities. To the east lay 179 acres of undeveloped land owned by PVT that is currently being used for soil borrow, water supply and drainage control.

To the south and southeast are commercial and residential developments, part of the Nanakuli community. The nearest residence is about 750 feet from the southernmost end of the Phase One disposal area. To the west are low-density residential and agricultural properties that run along the western edge of the facility.

PVT works to ensure that the landfill’s appearance is acceptable to the community. The area inside the gated entry, for as far as a casual visitor can see, is extensively landscaped. The operational face of the landfill is at the back of the facility, hidden by hills and berms.

Above and Beyond
The PVT landfill as originally designed was clay lined, which meets state and federal requirements for a C&D landfill.

Under PVT management, landfill design and construction would evolve to become state-of-the-art. While not required by law, PVT constructs its landfill to MSWF or special waste landfill specifications, which exceed state and federally mandated environmental safeguards for C&D landfills. Phase Two of the landfill began construction in 2003 and today includes nine landfill cells on 104 acres. All of the cells are of Subtitle D design, which describes landfills constructed with impermeable liners and a leachate collection and removal system.

Cells are excavated and graded at a slight angle so leachate runs toward the center of the landfill where it can be filtered and collected. Once the ground is prepared, multiple layers of protection are rolled out over the surface.
Seven Layers of Environmental Protection

First in place is a geosynthetic clay liner. Known as GCL, the liner is composed of a thin layer of high-density, processed bentonite clay sandwiched between layers of synthetic fabric. The GCL possesses a permeability factor so low that the potential for liquid to pass through is virtually nonexistent.

The GCL covers the landfill like a blanket. To protect this clay layer from damage, it’s covered with a sheet of flexible, high-density polyethylene. 60mm thick and as hard as a roofing shingle, the plastic rolls out in wide sheets that are welded together in place. As part of our CQC, welded sections are cut from the sheet and stress-tested to confirm the strength of the weld. When the sections are replaced and re-welded, their sheet roll numbers are recorded and the location of the weld is marked by GPS so it can be located if necessary. The plastic liner is covered with durable, 16-ounce geotextile fabric. The fabric is rolled out in sheets and sewn together in place using an automated sewing machine. The geotextile provides a heavy-duty protective layer above the plastic liner. The fabric is permeable but blocks particles that might scratch and wear on the plastic.

Gravel is spread 12 inches deep on top of the geotextile. The gravel allows liquid, such as rainfall, to flow through so it can reach the center of the landfill, where drainage occurs.

Another layer of 16-ounce geotextile fabric is rolled into place on top of the gravel. It’s there to help keep the gravel clean by preventing “fines”—small pieces of construction debris—from entering and clogging the gravel layer.

Two feet of fine-grained dirt—more resistant to penetration from debris than typical dirt—is spread atop the last layer of geotextile. Lastly, atop the fine-grained dirt, two more feet of soil is applied. This creates the “driving” layer, ready for trucks bringing waste into the landfill.

The leachate collection and removal system is a network of perforated HDPE pipes that are aligned in trenches beneath the gravel layer. Gravity carries leachate through the pipes to a sump where a system of solar powered pumps remove it from the landfill. Leachate is subsequently reused for landfill dust control.
MQC and CQC
As part of our MQC effort, we traveled to the plant where the polyethylene sheeting was manufactured to ensure that it meets exact specifications. Because we are in Hawaii, we conduct MQC prior to shipment to the islands and after arrival.

Throughout construction, our landfill engineer, California-based A. Mehr Inc., and independent engineer-observers monitored the installation, ensuring that federal and state requirements are followed and that the project’s specifications are met to the letter.

Appearance in the community
PVT has invested heavily in landscaping around the perimeter of the facility, where it is visible to the community.

It starts outside the main gate, where PVT worked with community groups to landscape the area with native Hawaiian plants. We also worked with the U.S. Navy (who owns the road leading to the facility) and used crushed rock and concrete from the landfill to create a 1/4-mile berm and walking path on the shoulder of the road to prevent illegal parking and reduce dust.

Trees and ground cover beautify and also help to prevent erosion and dust. Pili grass is planted or grows naturally on berms to protect against erosion. Recently, PVT designated an area of the facility to grow plants and citrus trees.

Recently we announced a plan to landscape a closed portion of the landfill near the main gate with native Hawaiian trees and shrubs. This idea was presented to the community at a meeting of the Nanakuli Neighborhood Board and met with a positive response and feedback by those attending who viewed before and after renderings of the area.
4) Equipment/Systems and Technologies

PVT operates on the Waianae Coast of Oahu, a community that values sustainability. PVT was able to demonstrate sustainability while also improving reliability and reducing maintenance costs by upgrading its leachate collection system from electric to a system of solar powered pumps manufactured by Grundfos Pumps Corporation.

Solar powered pumps improve PVT operations by providing a higher level of reliability and economy. There are no generators, compressors or any infrastructure so service requirements are negligible. PVT also uses solar powered systems for ground water monitoring and to power office operations. All together, the use of solar systems has led to a significant reduction in overall utility costs, important in a state where the kWh price for businesses is more than double other states in the nation.

PVT Recycling System

In 2014 PVT added a $4 million recycling system—the “Big Green Machine—to its operations. The facility typically inputs about 2,000 tons of C&D waste per day. Roughly 900 tons of that is recyclable waste, including wood and other materials that are processed as feedstock and stockpiled for future use by energy producers. Biomass Energy Systems, Inc., gasifies four to 10 tons of PVT feedstock daily to produce biogas that powers the operations of the Hawaii Air National Guard.

By recycling and converting debris into feedstock we’re working to enable the production of cleaner, more affordable renewable energy where we need it most—working for the people of Hawaii.

Drone and infrared camera

Over time, microbial activities on organic debris can produce an exothermic reaction that increases the subsurface temperature. If the temperature rises high enough, it can generate spontaneous combustion and start a sub-surface fire in the landfill.

PVT uses a DJI Inspire drone equipped with a Flir infrared camera to survey the landfill for hotspots. The PVT drone records still or video images of designated areas of the landfill. It’s easier to prevent a fire than it is to put one out. If a hotspot is identified, CO2 is injected into the ground to force out oxygen.

GPS Tracking of CERCLA Waste

PVT is the only facility on Oahu approved to receive CERCLA waste. CERCLA is the acronym for Comprehensive Environmental Response, Compensation, and Liability Act. The act applies to the off-site transfer of waste substances. The CERCLA designation is given only to a facility approved by the EPA and operating in compliance with applicable Federal or State requirements.

At PVT, special wastes such as asbestos and contaminated soil must be accurately tracked to demonstrate compliance with rules and permits. In the past, tracking relied on a grid system, which lacked precision. PVT now uses a survey-quality GPS base station to track special waste to within inches of its location. There are no regulations that require use of GPS, but PVT uses best practices wherever possible.
**Smart equipment**

In late 2017, PVT acquired the first diesel-electric powered bulldozer in the State of Hawaii, a new Caterpillar D7E. PVT expects to convert its entire 27-vehicle fleet to diesel-electric power as it becomes available and current equipment “ages out.”

The D7E bulldozer is PVT’s first step toward a primarily diesel-electric powered fleet.

The D7E is a “green” machine. Its innovative diesel-electric drive train delivers ten percent more pushing power while using about half the fuel. The D7E also meets Tier 4 Final/Stage IV/Japan 2014 (Tier 4 Final) emission standards with an 80 percent reduction in NOx emissions. Since there’s no drive train or transmission, there is virtually no maintenance costs past the engine. So there’s less down time and operating costs are lower.

The company also purchased a new Caterpillar D6K2 medium dozer and a Caterpillar 836K compactor. The D6K2 bulldozer features the AccuGrade control system, which uses the Global Navigation Satellite System (GNSS) to control blade angle for precise target grading that confirms exactly to engineering plans.

Meanwhile, the 836K compactor’s Auto-Blade feature automatically raises the blade when the machine reverses and lowers the blade to a pre-set height when it moves forward, increasing compaction efficiency. The 836K uses GPS to inform the driver of the precise compaction area that was covered, so uniform compaction and airspace optimization are easier to achieve.

We are also retrofitting our haul trucks, which are too big for the scale, with GPS and sensors that enable us to track their location, where they’re unloading, and load weight.

**Maintenance schedule**

PVT maintains a staff of two geologists, one environmental engineer, and one environmental technician for monitoring and maintenance purposes of landfill systems.

PVT also employs five full-time mechanics who perform maintenance on systems and equipment at regularly scheduled intervals as well as on an as-needed basis. Heavy equipment is inspected daily, both before and after operation to ensure it is in safe working order. Maintenance work is performed on-site or in a maintenance hangar.

**Back-up and contingency systems**

Oahu is subject to tsunamis, hurricanes and heavy weather events. Back-up and contingency systems are necessary to ensure that PVT, an emergency management contractor for the City & County of Honolulu, will continue to operate in extreme conditions.

Our operational recovery plans are updated every two years in response to changes in operations or to address needs that may arise with the introduction of new equipment or systems.

We maintain a back-up system of solar powered pumps for leachate collection. If the working pumps fail, we can replace with backup pumps and send the broken pumps out for repair.

PVT is also prioritized for refueling by the State of Hawaii during emergencies so it can continue operations. The PVT offices are designed to withstand 140 mph winds and are equipped with shatterproof glass. Offices and the PVT recycling system are also equipped to operate independent of any power source using solar (as the office is normally powered) or diesel powered generators. Four to 5 thousand gallons of diesel fuel— enough to power back-up generators and equipment for ten days—and 400 gallons of gasoline are stored at the facility.

**Watch PVT on YouTube**

PVT has a YouTube channel where you can learn more about how we built our landfill, how our recycling system operates, and watch our new D7E diesel-electric bulldozer in action. 

[www.youtube.com/pvtandcommunity](http://www.youtube.com/pvtandcommunity)
5) Environmental Controls and Monitoring

PVT uses a host of design and technology features to protect the environment in and around the landfill.

**Surface and storm water**

PVT manages surface water by using controlled grading on the landfill and an engineered system of drainage ditches, channels, pipes and six sedimentation/retention basins that are designed to contain a 100-year flood. A floating skimmer allows the maximum amount of sediment to be removed from the water before discharge. The skimmer collects storm water at the surface and slowly discharges it to a monitoring station before it is discharged into adjacent Ulehawa Stream and the Pacific Ocean about one-half mile downstream.

PVT received approval from the Hawaii State Department of Health to discharge storm water to the stream under a National Pollutant Discharge Elimination System (NPDES) permit. Although each basin is equipped with an overflow discharge structure, no surface discharge from the basins has been observed to date.

**Leachate collection**

Leachate, as it passes through landfill waste, may collect a variety of organic and inorganic contaminants. Operational practices and storm water management control at the landfill are continuously implemented to minimize leachate generation.

The leachate collection system at PVT collects 40,000 gallons of leachate annually. Leachate is tested and has been found to be so benign that it is pumped out of the sump to a holding tank and used for dust control. The leachate system is designed to store and pump up to 75,000 gallons of liquid in a 10-day period. The sump is designed to hold a total of 100,000 gallons of liquid, assuming 25 percent of the volume is not recoverable due to limitations on pump drawdown.

**Groundwater**

Phase One of the PVT landfill was constructed in previously quarried areas of the facility. The dense coralline and clay sediments underlying this area provide a natural barrier to impede leachate from migrating to groundwater. Phase Two, where current landfill and recycling operations are located, is designed with an impermeable liner and leachate collection system.

An independent third party hydrologist—required by the state to ensure impartiality—takes samples of groundwater once a quarter. Groundwater monitoring conducted from 1998 to present has indicated no impact to groundwater from the landfill or recycling operations.
Gas Management
At PVT, monitoring is performed at the unit boundary. In accordance with accepted practice, a system of gas monitoring probes is situated around the perimeter of the waste footprint.

Oxygen levels are also monitored carefully inside the landfill, particularly in Phase One where low compaction densities created void space. Prior to 2003 this section of the landfill was prone to subsurface fires facilitated by the intrusion of oxygen into the void space. If a monitor shows a high level of oxygen, CO₂ is injected into the site to drive out oxygen as a fire preventative measure.

In Phase 2, coal ash is used to create fire barriers every ten feet of lift during fill operations. Should a fire start, ash works to contain the fire to a localized “pocket” rather than spreading. Coal ash allows penetration of CO₂ into the area of the fire to cut off oxygen. A drone-mounted infrared camera is used to scan the surface of the landfill daily to identify potential hot spots.

Impact on Health and the Environment
PVT operations are designed to minimize impact on health and the environment. Our air, water, and dust control programs are highly effective because we’ve gone above and beyond to make them so.

A primary concern of the community is the type of waste accepted at PVT. As a result, the prevention of unauthorized materials from entering the landfill is our highest priority. Quality control begins before waste is sent to the landfill as all loads must be pre-approved. Quality control continues with inspection at the scale house, which includes an overhead camera that allows a comprehensive view into the bed of trucks that enter. A spotter positioned on the road to the landfill face and another at the tipping area are also on the watch to turn back prohibited waste that could find its way into the landfill and leachate system.

Air Monitoring
Because trade winds circulate air effectively—and because PVT accepts only C&D waste—air quality with respect to methane or odors has never been an issue at the landfill. Air quality monitoring in the past has shown air to be comparable to that of other locales on the island.

Erosion and Sediment Control
Nanakuli’s climate is dry and temperate. The area normally receives about 14 inches of rain per year, primarily between October and April, but is subject to severe storms. A dry environment makes the area well suited for a landfill, but the ground is vulnerable to erosion when the rains come. PVT plants native pili grass and other vegetation or allows it to grow naturally on hillsides and berms, forming a dense layer of ground cover that holds soil in place.
6) Regulatory Compliance

Role in the Community’s ISWM Plan
The City and County of Honolulu’s Integrated Solid Waste Management Plan Update aims at optimizing recovery of solid waste through reuse, recycling, composting, and energy conversion. The Plan Update called for the City to continue to direct C&D material to the PVT landfill for disposal.

Having an aggressive program to divert as much material as possible from disposal at the landfill is an important management strategy for the City, and one that PVT has taken to heart. The Plan Update further states that because of the availability of the PVT disposal option, the City banned the disposal of C&D materials at its municipal facilities. Disposal of asbestos at PVT is also part of the City’s Plan Update.

Another key component of the City’s plan for solid waste management is to reduce dependency on fossil fuel, which PVT’s conversion of waste to feedstock for power production is currently helping to accomplish. PVT is also the designated primary support and disposal site during natural disasters that may occur in the state, such as hurricanes or tsunamis.

Environmental compliance
PVT has been in environmental compliance for more than six years prior to this award application. In addition to filing formal reports and submittals, PVT maintains a positive working relationship with regulatory agencies to proactively address requirements and ensure an excellent compliance record. As a facility compliant with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), commonly known as Superfund, PVT is inspected by the Environmental Protection Agency every two years with the most recent inspection occurring in 2016. PVT has not received any violations in the past 12 years of EPA inspections.

Summary of permits
The PVT landfill permit is renewed every five years. The current permit is issued through 2023

The PVT Integrated Solid Waste Management Facility is permitted as both a C&D landfill and C&D recycling and materials recovery operations. PVT’s Conditional Use Permit, as modified, also authorizes both recycling and the disposal of C&D debris. PVT operates in compliance with applicable laws. Relevant permits pertaining to PVT operations include:
- State of Hawaii Department of Health Solid Waste Management Permit (LF-0061-15)
- City and County of Honolulu Conditional Use Permit (2015/CUP-69)
- Department of Health Clean Water Branch – National Pollutant Discharge Elimination System Permit for Storm Water Associated with Industrial Activities General Permit (R508941.FNL.08)
- Department of Health Clean Air Branch – Air Pollution Control Noncovered Source Permit (0651-01-N)
7) Planning and Operations

PVT accepts only materials that originate from construction or demolition sites, or from natural disasters. This includes concrete, hollow bituminous concrete, asphalt, pavement, wood, glass, masonry, roofing, siding, plaster, dirt, rock, stumps, boulders and brush as permitted by Chapter 342H, Hawaii Revised Statutes, and Title 11 Administrative Rules Chapter 58.1 Solid Waste Management Control and as they may be amended. All materials entering the landfill require inspection by an authorized PVT inspector.

Waste Screening and Segregation of Materials

PVT prequalifies waste that enters its facility in order to screen for unacceptable waste and to plan for its segregation on arrival. Waste is also screened when it arrives to ensure that contents are as described.

Special waste such as contaminated soil, lead painted waste, and roofing loads go directly to a designated area of the landfill where their disposal is GPS tracked.

Asbestos containing material (ACM) also receives GPS tracking and is designated to a dedicated area of the landfill. ACM contractors must notify PVT at least 24 hours prior to delivery and must have a completed ACM waste shipment record and authorized clearance number issued by PVT. ACM must be double bagged in plastic that is a minimum of 6 mm thick.

Customers using PVT solidification services or requesting to dispose of contaminated soil must have required documents approved before disposal.

Landfill Performance Analysis

To analyze landfill performance and revenue potential, PVT conducts surveys of the landfill area and calculates the amount of airspace used between survey dates. By taking the total scale weight of waste disposed during that period and dividing it by the amount of airspace used, we arrive at the weight of waste per cubic yard.

Based on this formula, the rate of compaction at the PVT landfill is 1,800 lbs., or 0.9 tons, per cubic yard. This is a top of industry figure and a strong influencer of revenue performance. Putting the most waste into the smallest area possible enhances revenue over the life of the landfill. Previously, the compaction rate in the area of the landfill where waste is being reclaimed had a compaction density of only 800 pounds per cubic yard. New methodologies have resulted in a 125 percent increase in airspace utilization.
GPS-Guided Compaction
Various factors are responsible for the high compaction rate. First, all metals, concrete, and other recoverable waste is diverted for recycling. Only about 50 percent of waste is deemed non-recoverable residual waste and disposed of in the landfill.

PVT also invests in innovative equipment to enhance landfill operations. Our new Caterpillar 836K is an example. The compactor’s blade pushes a two-foot layer of waste moving forward, and automatically lifts the blade in reverse so waste is not pulled backward. Onboard GPS guides each pass over the trash to attain a high level of precision compaction in two-foot lifts. We compact twenty feet of waste to 10 feet, use ash and soil for void space fill and cover the waste with 12 inches of soil. This constitutes our daily cover. PVT is paid by a nearby coal-fired power plant to take their coal ash for beneficial use.

PVT monitors its gas system operation. However, the amount of methane gas produced by the PVT landfill is minimal. As a C&D landfill, PVT does not accept organic material or compostable municipal waste. Wood and non-organic waste do not produce methane gas.

8) Employee and Customer Safety

PVT conducts regular employee health and safety training. Health training includes programs that prepare employees to identify hazardous waste, or objects that may be pressurized, by sight. Safety training is focused on trip, slip and fall prevention and subjects such as how to safely lift heavy objects. New employees also receive extensive training customized to the areas of the facility where they’ll work.

The physical health of our employees is also important. Recently, PVT began a health and wellness program that encourages healthful eating and weight loss. We also created a two-mile walking path with workout stations along the perimeter of the facility.

Areas of training include:
- General safety training
- Health safety
- First aid and CPR training
- Working around heavy equipment
- Hazards recognition
- Heat stress training

Safety at PVT includes respirator fit testing for work on the recycling pick line, if required.
9) Public Acceptance, Appearance and Aesthetics

Acceptance of the PVT landfill depends largely on the quality of our relationship with the community. PVT is committed to being a good neighbor as evidenced by our ongoing programs for dust and litter control, beautification, and philanthropic activities that benefit neighboring schools and community organizations.

Overall Site Appearance and Cleanliness

Most people who tour the PVT facility are surprised by what they don’t find. No odors. No birds circling fields of debris. The operating face of the landfill is contained and hidden by hills and berms.

Litter control programs maintain compliance with permit conditions pertaining to litter. The C&D waste received at the PVT facility contains relatively small amounts of the paper and plastic materials that often create litter problems at municipal landfills. The PVT litter control program includes litter screens, water sprays, and portable windbreak screens upwind of the landfill face. In addition, there are daily litter sweeps, litter fencing on the downwind side of the landfill, and interim covering of active landfill cells.

Community relations and education

The residents of Oahu’s Waianae Coast have strong opinions about landfills in their community. For years, there was open animosity toward PVT. This was due almost entirely by misinformation and rumors, and by confusion regarding the nature of PVT operations versus the Waianae Gulch municipal landfill a few miles away.

About eight years ago PVT launched a community relations program to educate area residents about C&D landfill operations and to showcase the company’s involvement in the community.

To inform residents about PVT operations and activities, the company places a monthly full-page ad in Westside Stories, a community newspaper that is mailed each month to 15,500 homes on the Waianae Coast.

Hawaii State Sen. Mike Gabbard (left) and Sen. Maile Shimabukuro, whose districts include the Waianae Coast and Nanakuli area, present PVT president Albert Shigemura with a Proclamation from the Hawaii State Senate recognizing the company’s commitment to recycling C&D waste into feedstock.
Since 2005, our signature PVT Scholarship program has awarded more than $840,000 to more than 260 college-bound seniors at Nanakuli and Waianae high schools, and Kamaile Academy. We also assist our schools with funding for academic programs, sports teams, and many projects and activities.

In the community, we support initiatives that add value to the lives of residents. Road and park cleanups, Waianae Sunset on the Beach, meals for the homeless, and Boys and Girls Club of Waianae are just a few of the activities and organizations we support on the Westside.

As PVT operations have become better understood—and PVT has become known for its contributions to the welfare of the community—the company has enjoyed a marked improvement in its acceptance in the community. In 2015, when PVT sought to expand its recycling and increase the height of the landfill, the community’s Neighborhood Board voted to support the project.

Landscaping and Dust Control
In recent years, PVT invested heavily in landscaping around the perimeter of the facility, including adding numerous trees and abundant ground cover. PVT also worked with community groups to landscape the area outside the main gate with native Hawaiian plants and covered the shoulder of the road with a layer of crushed rock and concrete to prevent dust from blowing. A new, more visually appealing dust screen was also added at the point where the facility borders the community.

The trees and ground cover that beautify also help to prevent erosion and dust. Recently, PVT designated an area of the facility to grow plants and citrus trees. Currently there are about 2,000 plants, but plans call for as many as 5,000. Paved roads inside the facility and the use of water trucks that spray the road surface and areas of landfill operation help to control dust. And at the face of the landfill, a Dust Boss sprays a blanket of mist over the operating area to help prevent dust from rising.

These mitigation measures, combined with the maintenance of a 750-foot buffer zone between the southwest property line and areas of activity, have been effective in reducing dust impacts to neighbors.

Thank you for taking the time to learn about the PVT ISWMF. We hope you’ll have the opportunity to visit us soon.