

Case Study - Used Lead Acid Battery Collection from City of Canning Waste Transfer Station

The Challenge

Used Lead Acid Batteries (ULABs) are a controlled hazardous waste and designated dangerous good and as such there are several regulations governing their handling, storage and transportation. Waste Transfer Stations such as the one operated by the City Of Canning (CoC), in Perth Western Australia acquire significant volumes of ULABs from the public and businesses disposing of their ULABs at the Waste Station.

The safe and environmentally sustainable disposal of ULABs has traditionally posed several problems for Waste Transfer Stations such as the City Of Canning, including;

1. Employees being exposed to toxic lead, battery acid burns and back injury.
2. ULABs being stored on wood pallets where leaking acid would damage infrastructure such as cement foundations.
3. Battery collections required CoC staff to package the ULABs on wood pallets which sometimes failed under the heavy weight of the batteries or broke free of the packaging.
4. Batteries being incorrectly disposed of in household bins resulting in damage to Rubbish Collection Vehicles.
5. The unauthorised removal ULABs from site.
6. “Duty of Care” and “Chain of Responsibility” risks for the City Of Canning due to regulation non compliance by the entire supply chain.
7. Service Managers being exposed to a personal “contingent liability” risk due to regulation non compliance.

The Solution

Battery Rescue Australia was established by UNISEG Products to use the UNISEG Pallet for its battery collection service. Battery Rescue places the UNISEG Pallet for free with Used Battery Generators (UBG) such as the City Of Canning (CoC). When the UBG has filled the pallet with used batteries, Battery Rescue pickup the pallet and provide the UBG with an empty exchange unit.



Ergonomic loading of batteries



Closing the UNISEG Pallet



Pallet ready for transportation

The UNISEG Pallet has a number of features that makes it ideal for the safe storage and transportation of lead acid batteries. The Pallet is constructed of high strength HLLD polyethylene material that is acid proof and is designed with a 25 litre bunded base for capturing any acid leaks. The pallet’s “front load” configuration enables heavy batteries to be ergonomically loaded into the pallet.

These features have helped reduce the CoC employee’s exposure to acid burns and injury from handling heavy batteries. The ULABs which should have been stored with the other Dangerous Goods at the CoC Waste Transfer Station, were being stored in a separate area because acid leaks were damaging concrete foundations. The Pallet’s bunded base has now enabled the batteries to be stored along with the other dangerous goods.

Reducing “Duty of Care” and “Chain Of Responsibility” Risks

CoC staff were required to stack the batteries on a wood pallet up to 3 layers high, then wrap and strap the batteries and label with the appropriate dangerous goods signage, ready for shipment. This was a time consuming task and exposed CoC staff to toxic lead and injury from acid burns and lifting heavy batteries. Wood pallets are also less than ideal when transporting ULABs as acid leaks are not contained and the heavy batteries are prone to shift during transportation.

The UNISEG Pallet eliminated the need for CoC staff to have to “wrap and strap” the ULABs on a wood pallet for transportation. When the Pallet is full of ULABs it can be closed with 10 over centre latches providing strength and securing the batteries for safe transportation. The pallet comes with the appropriate Dangerous Goods signage for transporting ULABs, hence once closed is ready for immediate shipping.

Used Battery Generators such as the City Of Canning, have a “Duty of Care” and “Chain Of Responsibility” to ensure that the batteries are stored, handled, transported and recycled in accordance with relevant regulations by their staff and appointed contractors / suppliers. The UNISEG Pallet and associated battery collection service performed by Battery Rescue are a safer, more environmentally sustainable and more convenient method of storing and transporting the batteries to the battery reprocessing plants. This helps ensure that the City Of Canning meets its “Duty of Care” and “Chain of Responsibility” obligations throughout their entire supply chain.

Results

The UNISEG Pallet was initially installed at the CoC Waste Transfer Station in October 2015. Up until Jan 28th 2016 there have been 5 collections performed by Battery Rescue with the average weight of the ULABs collected being 920kg per pickup. This represents an average pickup cycle of 19.5 days and hence based on an average price paid for the batteries of \$250 / tonne, equates to annual revenue of \$4,300 for the CoC Waste Transfer Station.

Burnie Burnette, the Centre Service Manager for the CoC Waste Transfer Station, said *"Previously when batteries were collected from our site the Battery Collector would have to transfer the batteries onto a wood pallet and then wrap and strap them. There were often problems with the pallets not being durable enough or the load of batteries shifting and a risk of injury to employees and contractors. The UNISEG Pallet and the supply of an exchange unit with each pickup have made this whole operation much simpler and safer."*

The installation of the UNISEG Pallet and the associated collection service by Battery Rescue has;

1. Substantially reduced employee and contractors manual handling of batteries and hence their injury and health risks.
2. Has eliminated damage to the cement foundations due to battery acid leaks.
3. Has vastly simplified the collection of batteries and reduced or eliminated associated safety risks to help CoC meet its “Duty Of Care” obligations with respect to Work Place Safety for employees and contractors.
4. The increase in batteries being dropped off by the public due to the more prominent location of the pallet and signage appears to have resulted in a decrease in batteries being disposed in household rubbish bins.
5. The incidence of incorrect disposal of batteries has been eliminated.
6. Ensures that the CoC meets its “Chain OF Responsibility” with respect to the safe and regulation compliant transportation of the batteries.
7. Compliance with the relevant OH&S, Environmental and Dangerous Goods Regulations has reduced the “contingent liability” of the Waste Transfer Station’s Service Manager.

About UNISEG Products and Battery Rescue

The UNISEG pallet is a multi-purpose storage and transportation container, that can be used as a general freight container, for the direct transportation of certain dangerous goods (packing groups II and III) and as an Australian dangerous goods segregation device (type II). The Pallet’s design is owned by UNISEG Products Pty Ltd with 2 provisional patents having been filed in approximately 50 Countries. The Pallet is currently manufactured under contract by Trimcast-Pelican in Melbourne, Australia. For further details visit their website www.unisegpallet.com

Battery Rescue Australia Pty Ltd was established by UNISEG Products Pty Ltd to use the UNISEG Pallet to develop a used battery collection service. The collected batteries are sold to Battery Reprocessing Plants for recycling. For further details visit their website www.batteryrescue.com.au