



**Florida Department of
Environmental Protection
Hazardous Waste Inspection Report**

FACILITY INFORMATION:

Facility Name: AERC Recycling Solutions A Clean Earth Company
On-Site Inspection Start Date: 03/21/2017 **On-Site Inspection End Date:** 03/21/2017
ME ID#: 43329 **EPA ID#:** FLD984262782
Facility Street Address: 4317 Fortune Pl Ste J, West Melbourne, FL 32904-1509
Contact Mailing Address: 334 S Warminster Rd, Hatboro, PA 19040
County Name: Brevard

NOTIFIED AS:

LQG (>1000 kg/month)

TSD Facility

Transfer Facility

Transporter

INSPECTION TYPE:

Routine Inspection for TSD Facility facility

INSPECTION PARTICIPANTS:

Principal Inspector: John E. White, Inspector

Other Participants: Parvez Mallick, Inspector; Mark Larsen, Operations Manager

LATITUDE / LONGITUDE: Lat 28° 5' 39.5694" / Long 80° 41' 51.624"

SIC CODE: 4212 - Trans. & utilities - local trucking, without storage

TYPE OF OWNERSHIP: Private

Introduction:

On March 21, 2017, John White, Florida Department of Environmental Protection (FDEP), and Parvez Mallick, U.S. Environmental Protection Agency (EPA), accompanied by Mark Larsen, AERC Recycling Solutions (AERC), inspected AERC for compliance with state and federal hazardous waste and universal waste regulations. AERC was inspected as a Large Quantity Generator (LQG), transporter, universal waste generator/handler, a hazardous waste transfer facility and a permitted mercury processing facility. This inspection also included sampling of specific areas and wastes by EPA sampling team from EPA Region 4's Science and Ecosystem Support Division, Athens, Georgia.

The facility has operated at this location since November 1993 and currently employs approximately 10 staff working two shifts, Monday through Friday, operating between 7:00 AM and 10:00 PM. The City of West Melbourne provides potable water and sewer. The facility owns and operates a small fleet of trucks for transportation of universal waste. The facility was originally Mercury Technologies International (MTI) but changed its name to Advanced Environmental Recycling Company (AERC) in 2001. On April 25, 2017, the Department was notified the facility is now AERC Acquisition Corporation d/b/a AERC Recycling Solutions, A Clean Earth Company.

AERC operates a mercury containing lamp and device storage and recovery facility under a permit issued by the Department. The initial RCRA mercury recycling permit was issued December 30, 1996. The current permit, 0072959-HO-006, was issued February 23, 2017, and expires December 30, 2021.

AERC most recently provided the Department a Florida Notification of Regulated Waste Activity form (8700-12FL) received on December 20, 2016. The facility originally notified the Department of its activities as a large quantity generator and hazardous waste treatment facility (TSD) on September 9, 1993, and received EPA identification number FLD984262782.

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INSPECTION HISTORY (Past 5 Years):

AERC was last inspected on July 27, 2016, and was not in compliance at that time. Violations cited were Chapter 62-737.800(9), failure to keep a roll-off of processed glass closed, and 40 CFR 265.171, failure to transfer the contents of a failed drum. The violations were corrected and the case was closed without formal enforcement.

AERC was inspected by the FDEP on December 17, 2013, and was not in compliance at that time. Violations cited included: failure to mark all hazardous waste accumulation containers with an accumulation start date; failure to mark one container of battery acid with the words "Hazardous Waste"; storing hazardous waste on-site for greater than 90 days; failure to properly label a satellite accumulation container of floor sweepings; failure to update the contingency plan with personnel changes; failure to inspect all 90-day accumulation areas weekly; failure to maintain a 12-week running average of mercury concentrations in glass waste as required by the permit; and failure to keep containers of mercury lamps closed. This was an EPA lead case and was closed without formal enforcement.

On January 24, 2013, AERC was inspected by the FDEP and was not in compliance at the time of the inspection. Violations cited included: failure to sign a manifest as the designated facility; failure to submit a biennial report in a timely manner; storage of hazardous waste in a supply area; storage of drums three rows high; storage of mercury lamps and glass in open containers; and failure to use an EPA identification number on a hazardous waste manifest. The formal enforcement case was resolved through issuance of a Consent Order, OGC #13-1248, that included \$9,500 in civil penalties.

Process Description:

AERC has been permitted to operate a mercury containing lamp and device storage and recovery facility. The storage of mercury containing lamps and devices is limited to 223,200 lamps or 968 55-gallon drums. The total storage of non-hazardous materials located outside in covered containers is a maximum of twenty-two tons. AERC also operates a 10-day transfer facility for hazardous waste destined for the AERC Pennsylvania facility, which is a permitted TSD. AERC is a large quantity generator of hazardous waste, a large quantity handler of universal waste, a universal waste transporter and a hazardous waste transporter.

The facility receives spent mercury containing bulbs and devices for the purpose of crushing or dismantling and separating the lamps or devices in a manner as to produce separated individual recyclable components such as glass, scrap metal and mercury containing powder (phosphor powder). A lamp recycler (LSS-1) separates the end caps, glass, shatter shields, and filaments from the phosphor powder. The metal and phosphor powder is sent to AERC Recycling Solutions, Allentown, Pennsylvania for thermal retort. At times when the LSS-1 is not working properly, the glass is put through the machine twice and then sent off to the Brevard County landfill. Samples are taken daily of the glass and end caps. Those samples are then composited and sent for testing once each week. The facility cannot process lamps or devices containing liquid mercury. Items containing liquid mercury are consolidated and sent to the Pennsylvania facility.

The air filtering unit for the LSS-1 contains three sets of air filters. These are pre-filters, HEPA-filters, and carbon filters. The filters are monitored on a regular basis and when the levels of mercury reach a certain level, the filters are changed. The pre-filters have been tested and determined to be nonhazardous. The HEPA-filters and carbon filters are disposed of as hazardous waste.

High Intensity Discharge (HID) lamps are dismantled at a work station located in one corner of the warehouse in order to remove mercury containing ampoules from the bases [Figure 1]. The consolidated ampoules are sent to the Pennsylvania facility.

The facility is also a universal waste handler. Batteries of all types are transported to the facility then sorted and consolidated into 55-gallon drums or onto pallets. The batteries are shipped off-site for reclamation. AERC accepts PCB and non-PCB lighting ballasts for sorting and shipment to other recycling facilities, as well as electronic scrap for de-manufacturing or remanufacturing. Most electronics are managed at AERC's facility located at 4301 Woodland Park Drive, Suite 105, West Melbourne, Florida.

Inspection of the facility began in the Receiving/Shipping area which consists of four bays with loading docks. The eastern-most bay, identified as bay 1, is for in-coming materials. The western-most bay, identified as bay 4, is for out-going materials. The middle bays are for storage of outbound materials and supplies such as fiber drums. In the loading bay area was a spill kit, fire alarm pull station, three fire extinguishers (two type C and

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one D), and a first aid kit. In a flammables cabinet located in the loading dock were various products used within the facility including paint, aerosols, thinners, and fuel.

Staged along the aisle in front of bay 4 were the following materials; fifty-one boxes of 8-foot lamps, eight 55-gallon drums, eight 5-gallon pails, one 1-gallon pail, and four 30-gallon containers of universal waste. Paperwork was produced documenting the materials stored in the aisle had just arrived this morning and had not been signed-in yet. Also in the aisle were two Gaylord (cubic yard) boxes capable of holding approximately 1.5 cubic yards of material or 250-gallons. One box contained lamp ballasts and the other small electrical transformers for recycling. No issues were noted in this area.

In the facility operations area located between the loading docks and the main warehouse space was one 55-gallon drum of mixed universal waste lamps, one 55-gallon drum of crushed universal waste lamps, four 55-gallon drums of whole universal waste lamp fixtures, one 1-gallon container storing a broken universal waste lamp kit, and one 5-gallon pail of universal waste lamps. No issues were noted in this area.

Along with the management of universal waste lamps, AERC offers a recycling service for batteries. Batteries are received as universal waste. AERC staff sort the batteries by type and ship them off-site for recycling. Batteries that are found to be leaking are managed in the battery processing area. Liquid waste is removed from damaged batteries and the batteries are then packaged for recycling. The battery processing area is located along the east wall of the warehouse. Located in the processing area was one 55-gallon drum for spent sodium hydroxide and one 55-gallon drum for sulfuric acid [Figure 2]. Each drum was labeled and staged on a containment pallet. Each drum was found to contain about ten gallons of corrosive waste. A drum for mineral oil was also located in this area. A shower/eyewash station is located directly across the warehouse from the satellite accumulation area. Access to the shower/eyewash station is unobstructed.

Located in the HID Lamp processing area where mercury ampoules are removed from lamps was one 55-gallon drum of ampoules from processed HID Lamps. The area is managed as a satellite accumulation area. The drum was labeled "Waste Mercury Contained in Manufactured Articles." The drum was also labeled "Hazardous Waste." The facility is not currently processing HID Lamps on a regular basis. The lamps can be processed more quickly and efficiently by other AERC locations in the country.

Located in the less than 90-day storage area [Figure 3] were the following: three 55-gallon drums of phosphor powder, dated 2/8/2017, 3/14/2017, and 3/15/2017; one 55-gallon drum of phosphor powder with no accumulation start date [Figure 4] that had been placed in the area the prior evening at shift change according to employee statements; and, a box of mercury waste solid, dated 3/15/2017, containing floor sweepings and spent filters. All of the containers were properly labeled "Hazardous Waste." The one drum without an accumulation start date should have been marked with the accumulation start date when the drum was moved from the satellite accumulation area. The drum was marked with the start date during the inspection.

AERC appears to have failed to adhere to a condition for the exemption from Section 403.722, Florida Statutes (F.S.), which requires that a facility must obtain a permit or interim status prior to treating, storing, or disposing of hazardous waste. Pursuant to Florida Administrative Code (F.A.C.) Chapter 62-730.160(1) [40 C.F.R. 262.34(a)(2)], a condition of the generator permit exemption, a generator may accumulate hazardous waste on-site for 90-days or less without a permit or without having interim status, provided that: the date upon which each period of accumulation begins is clearly marked and visible for inspection on each container.

Adjacent to the 90-day area is the less than 10-day transfer area [Figure 3]. Located in the less than 10-day transfer area were ten tube boxes and one 55-gallon drum containing low pressure sodium lamps and UV lamps [Figure 5], three 5-gallon pails of mercury debris, and one 10-gallon container of mercury debris destined for AERC's Pennsylvania facility. The smaller containers were staged on a containment pallet [Figure 6].

There were ten rows of universal waste and recyclable materials in the warehouse storage area. Located in Row 1 were spare parts for the LSS-1 processing machine obtained from other AERC facilities around the country. There were also five boxes of fluorescent lamp tubes. Two of the boxes did not have lids; however, at the time of the inspection AERC staff were actively removing sleeves from lamp tubes and placing them into the tube boxes to speed processing. Based on a printout of the inventory report generated on 3/21/2017, along with miscellaneous electronic devices for recycling the following materials were stored in the warehouse:

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Universal Waste Lamps	44,110 pounds
Crushed Universal Waste Lamps	2,814 pounds
HID Lamps	5,356 pounds
Low Pressure Sodium Lamps	740 pounds
High Pressure Sodium Lamps	70 pounds
Halogen & Quartz Lamps	607 pounds
Mercury Devices/Debris	133 pounds
Non-PCB Ballasts	33,091 pounds
PCB Ballasts	30 pounds
Non-PCB Transformers	6,694 pounds
NiCad Ballasts	278 pounds
Lead Acid Batteries	23,868 pounds
Dry NiCad Batteries	38 pounds
Nickel Metal Hydride Batteries	284 pounds
Lithium Batteries	2,553 pounds

One issue noted during review of the inventory report was the storage date for a large number of mercury containing lamps was reported as "01/01/001", what appears to be a default date. The oldest actual date recorded for mercury containing fluorescent lamps was 6/9/2016. The oldest date for high intensity discharge (HID) lamps was 5/21/2016. Both dates were within the one year limit. It was noted an item described as miscellaneous e-scrap had been in storage since 4/21/2016.

In the Production / Processing Area, the lamp processing equipment, LSS-1, was not operating at the time of the inspection [Figure 7]. There was a haze in the room created by a release of phosphor powder to the air. The processing equipment has recently been operating five days per week to remove excess inventory from storage. Mr. Larsen initially believed the release to the air had been caused by operation of the machine with an open vent following removal of shatter shields that had caused an obstruction. During a subsequent conversation, it was indicated the release was due to use of a hopper without a sealed lid to collect clean glass exiting the LSS-1 machine. As the clean glass falls into the hopper phosphor powder can be released if the hopper lid is not in place. The permit condition identified in Part II Operating Conditions, Subpart A General Operation Conditions, Item 22 requires the Permittee comply with air requirements specified in Rules 62-210.300 and 62-296.417, Florida Administrative Code. To comply with this requirement AERC uses a Jerome Direct Reading Mercury Vapor Analyzer to monitor points throughout the facility to ensure compliance with OSHA's permissible exposure limit of 0.100 milligrams per cubic meter for mercury concentration in the air. AERC's self-imposed action level is 0.025 milligrams per cubic meter. During production, air monitoring is performed every two hours. A review of the air monitoring logs for the week prior to the inspection, the week of the inspection, and the week following the inspection, found the facility did not exceed its self-imposed concentration limit of 0.025 milligrams per cubic meter. Following the inspection, the facility provided photos documenting the processing area had been cleaned [Figures 8, 9].

AERC appears to have failed to adhere to the requirements of 40 CFR 264.31, as adopted in Chapter 62-730.180(1), Florida Administrative Code. Facilities must be designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned sudden, or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment. The processing equipment, if properly operated, should not result in a release of mercury containing phosphor powder to the air in the processing room and could result in a release to the environment through the open bay doors.

The lamp processing equipment has a 55-gallon drum labeled "Hazardous Waste" accumulating phosphor powder and a 5-gallon container labeled "Hazardous Waste" accumulating glass fines [Figure 10]. Both containers are directly connected to the processing equipment. Lamp end caps drop into a Gaylord box (cubic yard cardboard box) [Figures 11, 12] and glass is discharged into a hopper. The air handler is equipped with High-efficiency particulate arrestance (HEPA) carbon filters. The carbon is replaced as necessary which is typically annually. Two 55-gallon drums directly connected to the filter housing were accumulating phosphor powder from the filter blow-down for the vacuum filter. Both drums were properly labeled "Hazardous Waste." Approximately fifteen pallets of lamps were staged in the processing area waiting to be processed.

Outside the door to bay 1, abutting the loading dock, is the storage area for the processed glass roll-off container [Figure 13]. The container stores glass generated by the lamp processing equipment. Once

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sampling of the glass has documented the glass does not exhibit a hazardous waste characteristic of toxicity for mercury, the glass is disposed of at a Subtitle D, non-hazardous waste landfill. The roll-off is supposed to be completely covered during storage per the requirements of permit condition Part II Item B(1). The tarp was laying off to one side of the roll-off container [Figure 14]. This issue has been cited during several prior inspections.

AERC failed to adhere to Part II Subpart A, General Operating Conditions, condition number 16 of RCRA permit number 0072959-HO-006. This condition requires the facility comply with the storage requirements of subsection 62-737.800(9) which requires the processed glass container be covered.

During the inspection on March 21, 2017, samples were taken by U.S. EPA representatives of clean glass in the roll-off container, sediments in the storm drain west of loading dock 1 where the clean glass roll-off container is staged [Figures 15, 16], debris and dirt adjacent to the clean glass roll-off container [Figure 17], and a back-ground sample of soil at a point located to the east of the facility.

Records Review:

Weekly inspection logs were reviewed and no issues were noted. Notifications of local authorities, as required by 40 CFR 264.37(a) and 265.37(a), was completed 6/17/2016. Adequacy of financial assurance and closure cost estimates were completed by the Department on 1/15/2016. Training for staff was completed in 2016 and was up to date. A review of the facility's contingency plan was completed during the July 2016 inspection and found no issues. The facility has not experienced any emergencies that required implementation of the contingency plan since the July 2016 inspection. No waste has been received from a foreign source.

A review of manifests for in-coming loads noted the facility signs off on the loads within one to two days. A review of the 10-day log required for transfer facilities found no issues. A review of out-going manifests found mercury containing wastes generated by the facility are shipped to AERC.COM located in Allentown, Pennsylvania, EPA identification number PAD987387216. The hazardous waste transporter used by the facility is Freehold Cartage, EPA identification number NJD054126164.

A review of the weekly and twelve week running average for mercury content in recovered materials (i.e., glass, metal) is required by the facility's permit 0072959-HO-004, Part II, Item B. 10. Review of the weekly composites and twelve week running averages the logs for 2016 and 2017 found the facility is sampling materials on a daily basis and collecting composite samples on a weekly basis as required. The facility is currently using ALS Environmental of 9143 Phillips Highway, Suite 200, Jacksonville for laboratory analysis. Analysis of the waste materials is for total mercury. Review of the sample results for clean glass, end caps, and HID bases found no issues. Some sample dates were spaced out due to periods when the LSS1 was not in operation.

New Potential Violations and Areas of Concern:

Violations

Type:	Violation
Rule:	262.34(a)(2)
Explanation:	The date upon which each period of accumulation begins is clearly marked and visible for inspection on each container. AERC failed to mark a container in the 90-day accumulation area with the accumulation start date.
Corrective Action:	The container was labeled during the inspection. No further action is required in response to this issue.

Type:	Violation
Rule:	62-737.800(9)
Explanation:	Separated glass and metal that is stored outdoors shall be stored in covered, watertight containers or in a manner that otherwise prevents contact with water and prevents the release of hazardous materials into the environment, located within portions of the

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facility with controlled access limited to authorized persons only, and stored in compliance with any applicable hazardous waste storage requirements adopted under Chapter 62-730, F.A.C. Specifically, AERC failed to keep the processed glass roll-off closed during storage.

Corrective Action: AERC must ensure containers storing separated glass and metal outdoors are provided with watertight covers.

Type: Violation

Rule: 264.31

Explanation: Facilities must be designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

Specifically, the lamp processing machine had a significant discharge of mercury contaminated phosphor powder to the room containing the equipment due to a malfunction in the equipment - a plate was left open following removal of debris that caused the machine to not work properly.

Corrective Action: The facility identified the cause of the release prior to the inspection. The room and lamp processing equipment must be decontaminated.

PHOTO ATTACHMENTS:

1. HID Lamp Processing Area



2. Battery Waste Accumulation



3. 90-Day and 10-Day Storage Areas



4. Undated Drum in 90-Day Area



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5. 10-Day Storage Area



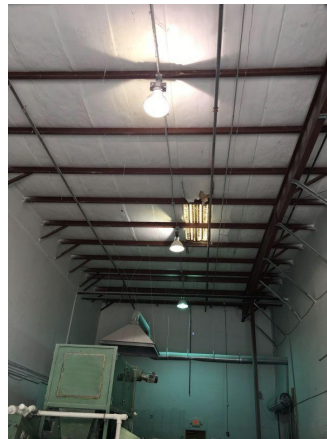
6. 10-Day Storage Area



7. LSS1 Processing Area



8. LSS1 Area after cleaning



9. LSS1 Area after cleaning



10. Waste containers in Processing Area



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11. End Cap container



12. End Caps



13. Glass Roll-Off Container



14. Glass Roll-Off showing tarp on ground



15. View looking west and showing storm drain near roll-off



16. Storm Drain sampled during inspection



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17. Asphalt adjacent to glass roll-off that was sampled

**Conclusion:**

Upon completion of the inspection, an out briefing was held with Mark Larsen, Operations Manager, at which time the issue of phosphor powder dust in the air in the production room was discussed. Potential non-compliance items identified during the inspection included the release of phosphor powder to the air in the production room and the uncovered clean glass roll-off container. Following review of information provided during the inspection it was noted the facility's required inventory log fails to include the actual date of storage for a significant number of lamp containers. The actual date of storage must be properly included in the log.

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1.0 - Pre-Inspection Checklist

Requirements:

The requirements listed in this section provide an opportunity for the Department's inspector to indicate the conditions found at the time of the inspection. A "Not Ok" response to a requirement indicates either a potential violation of the corresponding rule or an area of concern that requires more attention. Both potential violations and areas of concern are discussed further at the end of this inspection report.

Item No.	Pre-Inspection Review	Yes	No	N/A
1.1	Has the facility notified with correct status? 262.12	✓		
1.2	Has the facility notified of change of status? 62-730.150(2)(b)			✓
1.3	Did the facility conduct a waste determination on all wastes generated? 262.11	✓		

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Signed:

A hazardous waste compliance inspection was conducted on this date, to determine your facility's compliance with applicable portions of Chapters 403 & 376, F.S., and Chapters 62-710, 62-730, 62-737, & 62 -740 Florida Administrative Code (F.A.C.). Portions of the United States Environmental Protection Agency's Title 40 Code of Federal Regulations (C.F.R.) 260 - 279 have been adopted by reference in the state rules under Chapters 62-730 and 62-710, F.A.C.

John E. White

Principal Inspector Name

Inspector

Principal Inspector Title**Principal Inspector Signature**

DEP

Organization

10/19/2017

Date

Parvez Mallick

Inspector Name

Inspector

Inspector Title

EPA Region 4

Organization

Mark Larsen

Representative Name

Operations Manager

Representative Title

AERC

Organization

NOTE: By signing this document, the Site Representative only acknowledges receipt of this Inspection Report and is not admitting to the accuracy of any of the items identified by the Department as "Potential Violations" or areas of concern.

Report Approvers:**Approver:** Christine Daniel**Inspection Approval Date:** 10/19/2017