

**Resource Conservation and Recovery Act (RCRA) Corrective Action
Determination of Remedy Construction
RCRAInfo Code CA550**

Facility Name: GE Industrial of Puerto Rico LLC, Arecibo Facility
Facility Address: 980 San Luis Ave., Zeno Gandía Industrial Park, Arecibo, PR
Facility EPA ID#: PRD090383860

Facility Information

The General Electric (GE) Industrial of Puerto Rico LLC Arecibo facility (Site), formerly known as Caribe GE Electric Meters, is located in an industrial zoned region of the City of Arecibo, on the north central coast of Puerto Rico. The address of the Site is San Luis Avenue #980, Zeno Gandía Industrial Park, Arecibo, Puerto Rico. The Site covers approximately five acres of fenced property owned by the Puerto Rican Industrial Development Company and is surrounded by the industrial park. Since 1992, the facility has been operating as a Large Quantity Generator.

The regional climate of the Site is characteristic of a tropical marine climate with high humidity. The average annual temperatures are within the range of 75° to 80° F, with slightly cooler temperatures in the winter (Ref. 2). The average annual precipitation is 53 inches. The Site is situated in a relatively flat area of Arecibo with an elevation between 30 and 40 feet above mean sea level. The Atlantic Ocean is located approximately 1 mile to the north while the Rio Grande de Arecibo River and its tributaries flow north to the Atlantic approximately 1.5 miles east of the site. The soils within the area of the Site are classified as urban land consisting of deep, sandy and loamy soils (Ref. 1). These are underlain by Oligocene to Pliocene age karstic limestones up to 2,000 meters thick resting on a basement of folded and faulted Cretaceous and lower Tertiary sedimentary and igneous rock (Ref. 3).

The Site began operations in August 1973 and has remained active since that time. The Site currently consists of two main buildings that encompass approximately 56,900 square feet used for office space as well as manufacturing of industrial circuit breakers (Ref 1 &2). Current Site activities include manufacturing processes of industrial circuit breakers, including plastics molding, steel welding, metal stamping, painting, electroplating, and assembly of circuit breakers. In addition to manufacturing processes, a wastewater treatment plant is located onsite to treat the residuals from electroplating activities (Ref. 2). Electroplating activities include five separate plating lines: multi-line plating, silver-line plating, manual-line plating, salt hand plating, and barrel hand plating. Copper, nickel, silver, and zinc are used in the electroplating process (Ref. 2). The process wastes are treated at the wastewater treatment plant. Sludge generated from electroplating processes is drummed at a rate of 4 to 5 drums per week (Ref. 2).

A groundwater pumping well is located onsite. This well is located on the west side of the manufacturing building and was installed to a depth of approximately 200 feet below ground surface. The well continually pumps 16 hours per day at a rate of approximately 150 gallons per minute (Ref. 2). Hydrogeological investigations have not been conducted at the Site.

In November 1980, GE submitted to EPA the Notification of Hazardous Waste Activity and the Part A Permit Application. The list of wastes managed at the Site included 1,1,1-trichloroethane, wastewater treatment sludge (spent cyanide plating bath solution from electroplating operations), plating bath residuals (cyanides), quenching bath residuals (cyanides), soluble cyanide salts, silver cyanide, and sodium cyanide. In March 1982 GE submitted a revised Part A Permit application to EPA to correct an error related to the incorrect identification of a Holding Tank as a surface impoundment. GE reclassified this tank as a Solid Waste Management Unit (SWMU) #2. In April 1985, GE submitted a third revised Part A to only include metallic hydroxide electroplating sludge, 1,1,1-trichloroethane, and paint wastes. At the same time, GE

submitted the Part B permit call-in letter to EPA; the remainder of the Part B application was submitted six months later.

In October 1985 GE submitted to EPA separate plans for the closure of the Old Hazardous Waste Storage SWMU#1 and SWMU#2. After several revisions and public review, the closure plans were finally approved on August 22, 1988. In January 1991, GE submitted to EPA the closure reports for SWMU #1 and SWMU #2. On April 11, 1991 EPA granted clean-closure certifications for both SWMUs (Ref. 4).

Summary of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs):

In March 1988, a RCRA Facility Assessment (RFA) of the Site was completed by EQB (Ref. 1). The RFA identified seven (7) SWMUs, and six (6) AOCs. These are described as follows:

- SWMU #1 – Old Hazardous Wastes Storage Containers Storage Area
- SWMU #2 – Holding Tank
- SWMU #3 – Wastewater Treatment Plan
- SWMU #4 – New Hazardous Wastes Storage Containers Storage Area
- SWMU #5 – Former Electroplating Sumps
- SWMU #6 – Chromium, Cyanide, and Alkali/Acid Sumps
- SWMU #7 – Chromium, Cyanide, and Acid/Alkali Concentrated Tanks
- AOC #1 – Raw Material Storage Area I
- AOC #2 – Raw Material Storage Area II
- AOC #3 – Electroplating Area
- AOC #4 – Old Electroplating Area
- AOC #5 – Electroplating Scrubbers and Electroplating Ventilation
- AOC #6 – Dust Collectors and Baghouse Collector

Based on the findings and recommendations presented in the RFA Report, the following SWMUs were considered for further investigation:

- SWMU #2 – Holding Tank
- SWMU #5 – Former Electroplating Sumps
- SWMU #6 – Chromium, Cyanide and Acid/Alkali Sumps

SWMU #2 ceased operations in 1984 and clean-closed in 1990. EPA issued a clean-closure certification for SWMU #2 in April 1991 (Ref. 4). In July 2010, EPA decided to exclude SWMU #2 from the RCRA Facility Investigation (Ref. 5).

Determination of Remedy Construction (CA550NR) granted

On March 2012, GE conducted soil and groundwater sampling as part of the RCRA Facility Investigation. A total of 12 surface (0-2 ft) and subsurface (2-4 ft) soil samples were collected beneath the concrete slab at four boring locations around the perimeter of SWMUs #5 and #6. Results indicate that only arsenic exceeded the industrial soil screening level (3.0 mg/kg, January 2015) with concentrations that varied from 0.75-23.1 mg/kg (Ref. 2).


In August 2013, GE conducted additional soil sampling to determine if arsenic exceedances are part of regional soil background concentrations. Surface (0-2 ft) and subsurface (2-4 ft) soil samples were collected from 12 boring locations within the perimeter of the Site, in areas historically undisturbed (a total of 36 samples). Results of additional sampling indicate that arsenic in background soil varied from 0.47 to 5.3 mg/kg (Ref. 6). Although many of the background samples show arsenic exceedances slightly above the

industrial soil screening level, these were still very low compared with the exceedances obtained at the Site (Ref. 6). Soil arsenic concentrations at the Site do not exceed its generic Soil Screening Level (SSL) for migration to groundwater (i.e. 29 mg/kg), based on a dilution attenuation factor of 20 (Ref. 7).

A groundwater sample was collected from the onsite well. Sample was analyzed for Cyanide, Hexavalent Chromium, Total Metals and Volatile Organic Compounds. No exceedances were found in the groundwater sample (Ref. 2).

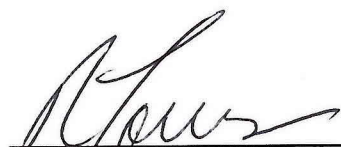
Based on a review of the information referenced in this document, a determination about "Remedy Construction" has been granted, where no construction is necessary (CA550NR). The Site is currently and anticipated to be utilized for manufacturing purposes in the foreseeable future (Ref. 6). The on-site soils where arsenic exceedances were detected are located beneath concrete or asphalt and are not readily accessible to create a complete exposure pathway to human beings (Ref 2 & 6). These conditions are expected to remain in the foreseeable future (Ref. 6). This determination is expected to be maintained at the GE Industrial of Puerto Rico LLC Site, EPA ID# PRD090383860, located at in Manuel Zeno Gandía Industrial Park, Arecibo, Puerto Rico, under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

Submitted by:


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Date: 5/12/2015

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Date: 5/12/15

References:

1. Environmental Quality Board, 1988. *RCRA Facility Assessment Report*, Caribe G.E. Products Arecibo, Puerto Rico, RCRA EPA ID No. PRD090383860.
2. ARCADIS, 2012. *RCRA Facility Investigation Report*, Caribe GE Products, Inc., Arecibo, Puerto Rico. General Electric Energy Management-Industrial Solutions.
3. Monroe, W.H., 1980. *Geology of the Middle Tertiary Formations of Puerto Rico*, United States Geological Survey Professional Paper 953.
4. Correspondence from Michael Poetzsch, Chief Caribbean Facilities Section, EPA, to Ms. Flor del Valle, Director Land Pollution Control Area, EQB. Re: Caribe General Electric, Arecibo, Puerto Rico; *Approval of Clean Closure of CSA and Holding Tank*, EPA I.D. No. PRD090383860, April 11, 1991.
5. Correspondence from Carl-Axel P. Soderberg, Director Caribbean Environmental Protection Division-EPA Region 2, to Joel Robinson, Global Remediation Manager GE Consumer & Industrial. Re: *RCRA Facility Investigation, Caribe GE Electric Meters, Arecibo, Puerto Rico*. July 12, 2010.

6. ARCADIS, 2014. *Arsenic Background Study Letter Report*, Arecibo, Puerto Rico (EPA ID No. PRD090383860). General Electric Energy Management - Industrial Solutions.
7. USEPA, 1996. *Soil Screening Guidance: Technical Background Document* (EPA/540/R-95/128).

Locations where references may be found:

References reviewed to prepare this EI determination have been identified under the Facility Information Section. Reference materials are available at U.S. EPA, Region 2.

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