

RCRA Inspection Report

1) Inspector and Author of Report

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U.S. Environmental Protection Agency, Region 4
Enforcement and Compliance Assurance Division
Chemical Safety and Land Enforcement Branch
RCRA Enforcement Section
61 Forsyth Street, S.W.
Atlanta, Georgia 30303

2) Facility Information

SI Group, Inc.
43300 State Highway 225
Bay Minette, Alabama 36507

EPA ID#: ALD010394021
NAICS #: 325199 – All Other Basic Organic
Chemical Manufacturing

3) Responsible Officials

Andy Bennett
Plant Manager
andy.bennett@siigroup.com

4) Inspection Participants

Andy Bennett, SI Group
Keith Bryers, SI Group
Laurie Benton DiGaetano, USEPA

Lanny Sasser, ADEM
Amber Hicks, ADEM

5) Date of Inspection

December 4, 2023

6) Applicable Regulations¹

Resource Conservation and Recovery Act (RCRA) Sections 3002 (42 U.S. Code – Annotated U.S.C.A. 6925 and 6927), and 40 Code of Federal Regulation (C.F.R.) Parts 260 - 270, 273, 278, & 279; and Alabama Hazardous Waste Management and Minimization Act of 1978, Ala. Code § 22-30-1 et seq., and rules 335-14-1 to 335-14-17 (2016 and 2018) of the Alabama Department of Environmental Management (ADEM) Administrative Code (ADEM Admin. Code)

Pursuant to ADEM Admin. Code r. 335 14-1-.02-(1)(a)111. [40 C.F.R. § 260.10], a large quantity generator of hazardous waste (LQG) is a generator who generates greater than or equal to 1,000 kilograms (2,200 pounds) of non-acute hazardous waste in a calendar month.

¹ As the State's authorized hazardous waste program operates in lieu of the federal RCRA program, the citations of those authorized provisions will be to the authorized State program. However, for ease of reference, the federal citations will follow in brackets.

Pursuant to ADEM Admin. Code r. 335 14-11-.02(1)(a)244. [40 C.F.R. § 273.9], a small quantity handler of universal waste (SQHUW) is a universal waste handler who does not accumulate 5,000 kilograms or more of universal waste (batteries, pesticides, mercury-containing equipment, lamps, or aerosol cans, calculated collectively) at any time.

Pursuant to ADEM Admin. Code r. 335-14-17-.03(a)(a), a used oil generator is any person, by individual generation site, whose act or process produces used oil or whose act first causes used oil to become subject to regulation.

Pursuant to ADEM Admin. Code r. 335-14-3-.01(5)(a) [40 C.F.R. § 262.15(a)], a generator may accumulate as much as 55 gallons of non-acute hazardous waste in containers at or near any point of generation where wastes initially accumulate, which is under the control of the operator of the process generating the waste, without a permit or without having interim status, as required by Section 22-30-12(b) of the Alabama Hazardous Waste Management and Minimization Act (AHWMMA), Ala. Code § 22-30-12(b) [Section 3005 of RCRA, 42 U.S.C. § 6925], and without complying with ADEM Admin. Code r. 335-14-3-.01(6)(b) or 335-14-3-.01(7)(a) [40 C.F.R. § 262.16(b) or § 262.17(a)], except as required in ADEM Admin. Code r. 335-14-3-.01(5)(a)7. and 8. [40 C.F.R. § 262.15(a)(7) and (8)], provided that the generator complies with the satellite accumulation area conditions listed in ADEM Admin. Code r. 335-14-3-.01(5)(a) [40 C.F.R. § 262.15] (hereinafter referred to as the “SAA Permit Exemption”).

Pursuant to ADEM Admin. Code r. 335-14-3-.01(7) [40 C.F.R. § 262.17], an LQG may accumulate hazardous waste on-site for 90 days or less without a permit or without having interim status, as required by Section 22-30-12(b) of the AHWMMA, Ala. Code § 22-30-12(b) [Section 3005 of RCRA, 42 U.S.C. § 6925], provided that the generator complies with the conditions listed in ADEM Admin. Code r. 335-14-3-.01(7) [40 C.F.R. § 262.17] (hereinafter referred to as the “LQG Permit Exemption”).

7) Purpose of Inspection

The purpose of this inspection was to conduct an unannounced compliance evaluation inspection to determine SI Group, Inc.’s compliance with the applicable requirements of RCRA and the corresponding Alabama regulations. This was an EPA lead inspection.

8) Facility Description

According to SIIGroup.com, the SI Group develops performance additives, process solutions, active pharmaceutical ingredients, and chemical intermediates using three business units: Polymer Solutions, Industrial Solutions, and Pharmaceuticals. The company has approximately 2,000 employees and operates on three continents. The subject facility, which is situated on an approximately 74-acre parcel in Bay Minette, Alabama, is one of the SI Group’s twenty global manufacturing sites. This facility is used to manufacture dinitrobutylphenol (DNBP), an additive for styrene. The company has thirteen employees at this location, and operations run twenty-four hours per day, seven days per week using two 12-hour shifts.

The SI Group operates two reactors at this facility and uses a batch process to manufacture DNBP. Emissions from each reactor are vented to the on-site natural gas incinerator. After blending the raw materials together and allowing the reaction cycle to complete, the intermediate product is pumped to a cone tank where process water containing 15% sulfuric acid (weak acid) separates from the product and is transferred to one of two large storage tanks. The DNBP product is then sent through a dryer unit and then to one of the product storage tanks. The final product may be loaded for shipment directly from the product storage tanks or it may be filtered prior to loading if that step is requested by the customer.

Weak acid is sent from the weak acid storage tanks through an on-site distillation process that recovers process water (distillate water), leaving a 45% sulfuric acid (strong acid) waste. The distillate water is pumped to tanks RV-04 or RV-05 where it is stored until it is used again in the manufacturing process. The strong acid is pumped to hazardous waste storage tanks RV-06 or RV-07 where it is stored and cooled before it is pumped to a tanker truck for off-site disposal. Facility personnel stated that the storage tanks are cleaned out to remove accumulated solids, which are managed as hazardous waste, about once every ten years.

The subject facility had been operating as a large quantity generator (LQG) for over thirty years before the SI Group USA, LLC first notified as an LQG of hazardous waste at this location on October 16, 2019. Previous owners and/or operators who notified as LQGs at this location include: Uniroyal Chemical Company, Crompton Manufacturing Company, Chemtura Corporation, and Addivant USA. The SI Group most recently notified as an LQG here on July 8, 2022. In addition to the strong acid, which is managed as D002 hazardous waste sulfuric acid, the subject facility also routinely generates floor sweepings, filters, and used protective gear, which are managed as P020 acutely hazardous waste, and laboratory waste, which is managed as D001, D022, F003, F005, P020 hazardous waste.

The SI Group also entered into a Post-Closure Agreement with the Alabama Department of Environmental Management (ADEM) to perform post-closure hazardous waste management and corrective/remedial actions at the site. In September 1979, Hurricane Frederick damaged the Hypalon lining of a lagoon that had been used to manage process wastewater since 1977. The material in the lagoon, the liner and impacted soil were removed for off-site disposal prior to August 1, 1981, but the “closed” impoundments were not “clean closed”. A synthetic cap was installed over the Acid Lagoon in 1995. Under the Post-Closure Agreement, the SI Group is required to conduct semiannual post corrective measures monitoring and post closure monitoring of the Acid Lagoon in May and November of each year, and to submit an Annual Corrective Measure Ground Water Monitoring Report in December of each year.

9) Previous Inspection History

On June 14, 2023, ADEM conducted the most recent RCRA CEI at the subject facility and found no apparent violations of RCRA’s requirements. ADEM has conducted five RCRA CEIs at the subject facility over the past ten years and found a total of two potential violations of hazardous waste tank management requirements during those inspections. The EPA’s most recent RCRA CEI at the subject facility was conducted on November 30, 2011.

10) Opening Conference

On December 4, 2023, EPA inspector Laurie Benton DiGaetano, accompanied by ADEM inspector Lanny Sasser, arrived at SI Group, Inc. at approximately 10:00 AM. After viewing the site safety video, the inspectors were joined by Andy Bennett, Plant Manager, and Keith Bryers, Operations Foreman, for the opening conference. The inspectors introduced themselves, displayed their credentials, and explained the purpose of the visit.

The EPA inspector noted that the agency has resources available for small businesses, a classification under the Small Business Regulatory Enforcement Fairness Act that is generally set by the Small Business Administration using the business' SIC/NAICS code and annual receipts or number of employees. A copy of the EPA's information sheet for small businesses can be found at <https://www.epa.gov/sites/production/files/2017-06/documents/smallbusinessinfo.pdf>. The inspectors described the anticipated use of equipment (digital camera) during the inspection and provided a request for records. The EPA inspector also discussed the company's ability, pursuant to 40 C.F.R. § 2.203, to assert a business confidentiality claim for information submitted to EPA. The company did not assert a business confidentiality claim.

Andy Bennett and Keith Bryers provided an overview of the facility's history and current operations before Andy Bennett led the inspectors on a tour of the Facility operations.

11) Inspection Observations

Quality Control Laboratory Satellite Accumulation Area (SAA) and Central Accumulation Area (CAA):

The SI Group manages a SAA in the Quality Control Laboratory for managing D001, D022, F003, F005, P020 hazardous waste that is generated by the laboratory activities. The inspectors observed one 1-quart container inside a secondary containment tray in this SAA (Photo 1), which was located on the counter next to a laboratory sink. The container was labeled hazardous waste; it was closed; and it was marked to indicate that the contents were toxic, acutely toxic, and ignitable.

Andy Bennett explained that the facility transfers the contents of this container to the 5-gallon container in the Laboratory CAA before they reach the 2.2-pound limit for managing acutely hazardous waste under the SAA Permit Exemption. The inspectors observed one 5-gallon container in the Laboratory CAA (Photo 2), which is located inside a laboratory cabinet. The storage container was closed; it was labeled D001, D022, F003, F005, P020 hazardous waste; it was marked to indicate that its contents are toxic, acutely toxic, and ignitable; and it was dated with an accumulation start date of November 27, 2023. The CAA was identified with signs that read danger, hazardous waste storage, and no smoking. The laboratory is equipped with a fire extinguisher, an emergency shower and eyewash station, and a telephone. Andy Bennett stated that when the 5-gallon container is full, it is transferred to the facility's main CAA.

Used personal protective equipment (PPE) SAAs:

In the Quick Reference Guide to the Contingency Plan, the SI Group identified five SAAs throughout the facility for managing used PPE and, where applicable, floor sweepings and used filters as P020 acutely hazardous waste. The inspectors observed five SAAs during the facility tour: one SAA next to the open-air covered break area (Photo 3), one SAA in the Maintenance Shop (Photo 4), one SAA next to the Hazardous Waste Tank Farm (Photo 5), one SAA in the Process Area, and one SAA just outside of the Process Area Control Room. The inspectors observed one step-on trash can in each SAA. Each container was labeled hazardous waste and marked to indicate that its contents are acutely toxic. Andy Bennett stated that personnel empty each of these trash cans every night in order to ensure that they do not exceed the 2.2-pound limit for managing acutely hazardous waste under the SAA Permit Exemption.

Warehouse CAA:

The SI Group manages the main hazardous waste CAA in a chain-link cage within the Maintenance Area (Photo 6). The CAA is equipped with secondary containment pallets, and it was identified with signs which read “danger, flammable” and “hazardous waste area,” and which included a “no smoking” pictogram. The CAA is equipped with an air horn, and employees carry radios when working in this area. The CAA is also equipped with portable fire extinguishers, spill control equipment, and an emergency shower and eyewash station.

The inspectors observed one 55-gallon fiber drum inside the CAA. The container was closed, and it was in good condition. The container was labeled P020 hazardous waste acutely toxic floor sweepings and protective gear, and it was marked with an accumulation start date of November 27, 2023.

Used Oil and Universal Waste Management:

The SI Group manages used oil and universal waste in a chain-link cage within the Maintenance Area adjacent to the CAA caged area. The inspectors observed one 55-gallon drum of used oil (Photo 7), which was closed and labeled used oil, and two containers for managing universal waste. The first universal waste container was a plastic tote, which was labeled universal waste and dated January 30, 2023. The tote appeared to be empty. The second universal waste container was an 8-foot cardboard box, which was labeled universal waste lamps and also dated January 30, 2023.

Hazardous Waste Tank Farm:

The inspectors observed hazardous waste tanks RV-06 (Photo 8) and RV-07 (Photo 9) in the hazardous waste tank farm. Each tank was labeled D002 hazardous waste and was surrounded by a diked secondary containment area. Tank RV-07 shared its secondary containment area with tanks RV-04 and RV-05, which were labeled for the storage of distillate water. Tank RV-06 was equipped with its own secondary containment area.

The inspectors also observed a tanker truck on the loading platform next to the hazardous waste tank farm. Andy Bennett explained that the tanker truck was staged in preparation for loading D002 hazardous waste and transporting it to the designated treatment storage and disposal facility (TSDF). The D002 hazardous waste sulfuric acid exits the distillation unit at an elevated temperature, so it is allowed to cool in the storage tank before it is loaded for transport off-site. Manifest records indicate that shipments of D002 hazardous waste sulfuric acid are sent off-site once every day or every two days.

Closed Acid Pond:

The inspectors walked over the closed acid pond and observed monitoring wells G50, MW1B, G82 and B16. Each of the wells appeared to be in good condition.

12) Records Review

Contingency Plan and Quick Reference Guide (QRG):

The actions that facility personnel should take in response to an emergency are described in the facility's contingency plan, which was last updated on October 26, 2023. The plan describes actions facility personnel must take in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility; and it describes arrangements agreed to with the Crossroads Fire Department, the Medical Clinic of Daphne, Clean Harbors, and Well-Safe.

The contingency plan lists the names and emergency telephone numbers for persons identified as emergency coordinators, and the order in which they will assume responsibility as alternates; it includes a list of emergency equipment at the facility, including fire alarms, smoke detectors, two-way radios; and it includes an evacuation plan for personnel, and it describes the primary and alternate evacuation routes and the notification system to be used to begin evacuation.

A copy of the contingency plan (and its quick reference guide) was most recently submitted to the local emergency responders on October 26, 2023. The quick reference guide includes the types/names of hazardous waste in layman's terms and the associated hazard associated with each hazardous waste present at any one time; the estimated maximum amount of each hazardous waste that may be present at any one time; the identification of any hazardous wastes where exposure would require unique or special treatment by medical or hospital staff; a map of the facility showing where hazardous wastes are generated, accumulated and treated; a street map of the facility in relation to surrounding businesses, schools and residential areas; the identification of on-site notification systems; and the name of the emergency coordinator(s) and emergency telephone number(s).

Training Records:

The inspectors reviewed hazardous waste training records, which indicated that annual hazardous waste training was provided to facility personnel in December 2022. Andy Bennett

stated that two employees were receiving initial hazardous waste training during the first week of December, and that all personnel will receive annual refresher training on December 21, 2023.

Waste Manifest and Land Disposal Restriction (LDR) Records:

The inspectors reviewed available hazardous waste manifest records and land disposal restriction forms for shipments of hazardous waste sent since January 2021. According to the manifest records, the facility shipped approximately 47,000 lbs D002 waste sulfuric acid for deep well injection at TM Deer Park Services (TXD000719518) every one-to-two days. Each shipment contained approximately 47,000 pounds, and the facility sent approximately 300 shipments during 2021, 315 shipments during 2022, and 220 shipments in the first eleven months of 2023. Although the manifest records indicate that most of this waste was sent for deep well injection, they also indicate that some was sent for storage, bulking and/or transfer off-site.

The facility also shipped P020 waste toxic solids (Dinoseb) for incineration at Clean Harbors El Dorado (ARD069748192) every two-to-four months during calendar years 2021, 2022 and 2023. Each shipment contained between 1,200 and 11,600 pounds of P020 waste toxic solids; and the facility sent a total of four shipments in 2021, five shipments in 2022, and four shipments in the first eleven months of 2023.

In addition to the P020 waste toxic solids (Dinoseb), the facility shipped P020, D001, D002, F003, and F005 waste flammable liquid (Dinoseb and Toluene), or P020, D001, D002, and F003 waste flammable liquid (Dinoseb and Toluene) for incineration at Clean Harbors Deerpark (TXC055141378) or El Dorado (ARD069748192) every two-to-four months during calendar years 2021, 2022, and 2023. Each shipment contained between 10 and 6,000 pounds of the waste; and the facility sent a total of four shipments in 2021, five shipments in 2022, and three shipments in the first eleven months of 2023.

Finally, the facility sent one shipment of 550 pounds of D002 acid tank sludge (sulfuric acid, 4,6-dinitro-2-sec-butylphenol) for storage, bulking, and/or transfer off-site at Clean Earth of Alabama (ALD981020894). This shipment was sent on February 22, 2022, using manifest number 023897150JJK.

Inspection Records:

The SI Group records inspections of the laboratory CAA and the main CAA on the same inspection sheet, which was found in the Quality Assurance Laboratory. The inspectors reviewed records of inspections conducted between January 6, 2021, and November 27, 2023.

The inspectors also reviewed records of daily inspections of the hazardous waste storage tanks that were conducted between March 29, 2023, and December 4, 2023. In addition to the daily tank inspection records, Andy Bennett also provided documentation of a hydrostatic test conducted on Tank RV-06 by Micro-Fab, Inc. on June 26, 2023, and documentation of a visual inspection of the interior of Tank RV-07 conducted by Abtrex Alabama on August 30, 2022.

13) Closing Conference

Inspectors Lanny Sasser and Laurie Benton DiGaetano, along with inspector Amber Hicks, who participated in the records review, conducted the exit meeting with Andy Bennett. During this meeting, the inspectors stated their preliminary conclusions of the inspection.

14) List of Attachments

Attachment 1 – Photo Log

15) Signed

LAURIE DIGAETANO Digitally signed by LAURIE DIGAETANO
Date: 2024.01.04 09:38:27 -05'00'

Laurie Benton DiGaetano
Environmental Engineer

16) Concurrence

ARACELI CHAVEZ Digitally signed by ARACELI CHAVEZ
Date: 2024.01.04 09:55:36 -05'00'

Araceli B. Chavez
RCRA Enforcement Section

Attachment 1 – Photo Log

Nine Photos taken on: December 4, 2023
Photos taken by: Laurie Benton DiGaetano
Photos taken with: Panasonic DMC TS-5
EPA Property Tag: S09533

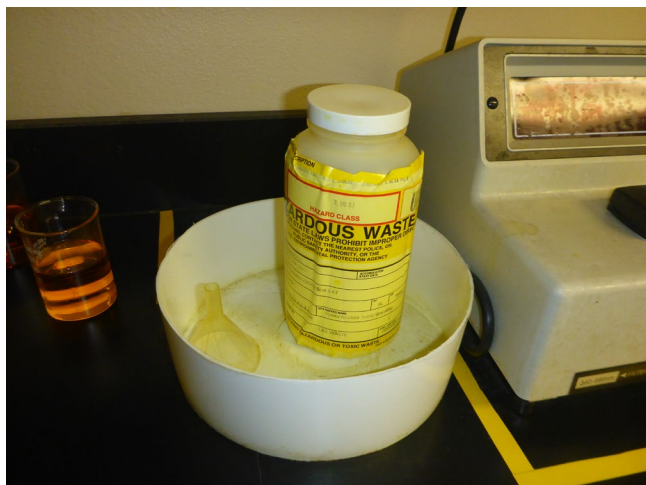


Photo 1: One 1-quart container of D001, D022, F003, F005, P020 hazardous waste in the Laboratory SAA.



Photo 2: One 5-gallon container of D001, D022, F003, F005, P020 hazardous waste in the Laboratory CAA.



Photo 3: One step-on trash can of P020 hazardous waste in the break area SAA.



Photo 4: One step-on trash can of P020 hazardous waste in the warehouse SAA.



Photo 5: One step-on trash can of P020 hazardous waste in the hazardous waste tank farm SAA.



Photo 6: Caged CAA inside the warehouse.



Photo 7: One 55-gallon drum of used oil in the caged used oil and universal waste management area inside the warehouse.



Photo 8: Hazardous waste storage tank RV-06.



Photo 9: Hazardous waste storage tank RV-07.