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
61 Forsyth Street, S.W.
Atlanta, Georgia 30303

2) Facility Information

Anduril Industries, Inc.
488 E McHenry Road
McHenry, Mississippi 39561

EPA ID # MSR000109702
NAICS # 541715 – Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology).
Other NAICS: 331314 -Secondary smelting and alloying of aluminum.
336415 – Guided missile and space vehicle propulsion unit and propulsion unit parts manufacturing.

3) Responsible Officials

LaDonna Bell
Senior Safety Manager
LBell@anduril.com

4) Inspection Participants

Dibyendu Paul, Anduril Industries
Head of Safety

LaDonna Bell, Anduril Industries,
Senior Manager Safety

William Rider, Mississippi Department of Environmental Quality (MDEQ)
Brad Justice, MDEQ
Krista Caron, MDEQ
Nereida Hernandez Morales, USEPA Region 4

5) Date of Inspection

December 7, 2023

6) Applicable Regulations[1]

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; Mississippi Code of 1972, Miss. Code Ann. § 17-17-1 et seq., and Mississippi Hazardous Waste Management Regulations, 11 Miss. Admin. Code Pt. 3, R. 1.1-1.24.

Pursuant to 11 Miss. Admin. Code Pt. 3, R. 1.2 [40 C.F.R. § 260.10], a small quantity generator (SQG) of hazardous waste is a generator who generates greater than 100 kilograms (220 lbs) but less than 1,000 kilograms (2200 lbs) of hazardous waste in a calendar month.

Pursuant to 11 Miss. Admin. Code Pt. 3, R. 1.3 [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 the 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 17-17-27(4) of the Mississippi Code of 1972, Miss. Code Ann. § 17-17-27(4) [Section 3005 of RCRA, 42 U.S.C. § 6925], and without complying with 11 Miss. Admin. Code Pt. 3, R. 1.3 [40 C.F.R. § 262.16(b) or §262.17(a)], except as required in 11 Miss. Admin. Code Pt. 3, R. 1.3 [40 C.F.R. § 262.15(a)(7) and (8)], provided that the generator complies with the satellite accumulation area conditions listed in 11 Miss. Admin. Code Pt. 3, R. 1.3 [40 C.F.R. § 262.15(a)] (hereinafter referred to as the "SAA Permit Exemption").

Pursuant to Pursuant to 11 Miss. Admin. Code Pt. 3, R. 1.2 [40 C.F.R. § 262.16)], SQG may accumulate hazardous waste on-site for 180 days or less without a permit or without having interim status.

Pursuant to 11 Miss. Admin. Code Pt. 3, R. 1.21 [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.

7) Purpose of Inspection

The purpose of this inspection was to conduct a compliance evaluation inspection to determine Anduril Industries, Inc. compliance with the applicable requirements of RCRA and the corresponding Mississippi regulations. This was a State lead inspection supported by EPA.

8) Facility Description

Anduril Industries, Inc. (hereinafter referred as Anduril or the facility) is in McHenry, Mississippi. Before Anduril, Adranos occupied the facility since 2015 to 2023. Adranos's primary activities at the site included the manufacture of various propellant formulations for research and development (R&D) purposes. Anduril acquired Adranos in 2023. Anduril took its state-of-the-art technology and machinery and combined it to make solid rocket motors and produce a

[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.

new type of rocket fuel called ALITEC, a mixture of lithium and aluminum. The propellant is manufactured at the Anduril Indiana facility with different R&D processes in place.

The R&D process involves the manufacture of solid rocket fuel under pilot manufacturing conditions. The manufacturing of solid rocket fuel consists of mixing propellant (ALITEC) with a binder and igniter to create the fuel mix. The fuel mix is then placed in core around a 3-D printed mandrel, cured at ambient temperatures to become solid. The propellant may also be cured with low heat to simulate aging. The mandrel is removed from the fuel core and the cured fuel core is then ready for testing. Tests conducted on the cured fuel cores include friction sensitivity and strand burns. During the testing phase, it is essential and necessary to account for every portion of the propellant to be used. Anduril cannot manufacture solid rocket fuels in an excess amount above that which is required to fulfill the contract(s). Raw materials such as propellant, igniters, and binders that do not meet specification are returned to the supplier.

Anduril employs approximately 35 employees and operates one shift, five days a week (Monday to Friday). The facility occupies 450 acres of land. Access to the facility is restricted. Visitors must register at the main office and must be escorted by facility personnel. The facility consists of nine buildings used as follow:

- The main office, warehouse, and inert manufacturing areas.
- The R&D energetics and low-rate production
- Solid rocket motor test stand.
- The energetics storage buildings (300 and 301).
- The high-rate energetics production facility is currently not in use. In the future it will be used to produce high-rate solid rocket.

The most recent Hazardous Waste Generator Notification (EPA Form 8700-12) dated October 3, 2023, characterized the facility as a small quantity generator (SQG) of hazardous waste. Waste codes from the EPA Form 8700-12 include D001 (ignitable waste) and D003 (reactive).

9) Previous Inspection History

This is the first compliance evaluation inspection (CEI) at this facility.

10) Opening Conference

On December 7, 2023, EPA inspectors Nereida Hernandez Morales, accompanied by MEDQ inspectors Krista Caron, Brad Justice, and William Rider arrived at Anduril Industries at approximately 9:20 a.m. After checking-in in the security office, Mr. Dibyendu Paul, received the inspectors. The inspectors were joined to the opening conference by Ms. LaDonna Bell. The inspectors introduced themselves, showed their credentials and explained the purpose of the visit.

The inspectors described the anticipated use of equipment (digital camera) during the inspection. 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 facility

did assert business confidentiality claim and cameras were not allowed. Photos were taken by LaDonna Bell and sent by email to the inspectors.

Mr. Paul and Ms. Bell provided an overview of the facility's history and current operations during the opening conference. Health and safety protocols and the required personal protective equipment required for the inspection were discussed as well.

11) Inspection Observations

Anduril manages one central accumulation area (CAA) and several satellite accumulation areas (SAAs) across the facility. All the waste in the SAAs is moved to a CAAs prior to shipment. The facility's main processes consist of research and development of rocket propellent, smelting and alloying of aluminum, and manufacturing of guided missile and space propulsion unit and parts.

Emergency showers, eye wash stations, and spill kits were observed around the SAAs and CAA at time of the inspection.

Warehouse/Rumbel Area:

Waste is generated from the 3D printing process. The inspectors began the walk-through in the warehouse chemical storage room where a 3D printing is located, and the following was observed.

Two 55-gallon container with isopropyl alcohol (IPA) waste was observed to be closed and labeled with the words "Hazardous Waste" and with an indication of the hazards of the contents (flammable liquid). One container was dated November 3, 2023. The containers were in a secondary containment. Photos #1 and #2.

Pursuant to 11 Miss. Admin. Code Pt. 3, R. 1.3 [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 the 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 17-17-27(4) of the Mississippi Code of 1972, Miss. Code Ann. § 17-17-27(4) [Section 3005 of RCRA, 42 U.S.C. § 6925], and without complying with 11 Miss. Admin. Code Pt. 3, R. 1.3 [40 C.F.R. § 262.16(b) or §262.17(a)], except as required in 11 Miss. Admin. Code Pt. 3, R. 1.3 [40 C.F.R. § 262.15(a)(7) and (8)], provided that the generator complies with the satellite accumulation area conditions listed in 11 Miss. Admin. Code Pt. 3, R. 1.3 [40 C.F.R. § 262.15(a)] (hereinafter referred to as the "SAA Permit Exemption").

The facility uses a small container ("sink") to wash parts. This container was not marked with the words "hazardous wastes" and indication of the hazards of the contents. Photo #3

Pursuant to 11 Miss. Admin. Code Pt. 3, R. 1.3 [40 C.F.R. § 262.15(a)(5)], A generator must mark or label its container with the following: (i) The words "Hazardous Waste, and (ii) An indication of the hazards of the contents (examples include, but are not limited to, the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic); hazard communication consistent with the Department of Transportation requirements at 49 CFR part 172 subpart E (labeling) or subpart F (placarding); a hazard statement or pictogram

consistent with the Occupational Safety and Health Administration Hazard Communication Standard at 29 CFR 1910.1200; or a chemical hazard label consistent with the National Fire Protection Association code 704).

Geisler Building/R & D Energetics and Low-Rate Production (Testing Site Lab):

This building is used for research, development, and demonstration activities involving energetic materials. Waste is generated from activities in this area.

One 55-gallon container (white) with waste gloves was observed closed. This container was not marked with the words "hazardous waste" and indication of the hazards of the contents. Photo #4.

One 5-gallon container with IPA liquid was observed closed. This container was not marked with the words "hazardous waste" and indication of the hazards of the contents. Photo #4

One 55-gallon container (black)with a funnel was observed closed. This container is used to store "used oil"; however, it was not marked with the words "Used Oil". Photo #4

Pursuant to 11 Miss. Admin. Code Pt. 3, R. 1.3 [40 C.F.R. § 262.15(a)(5)], A generator must mark or label its container with the following: (i) The words "Hazardous Waste, and (ii) An indication of the hazards of the contents (examples include, but are not limited to, the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic); hazard communication consistent with the Department of Transportation requirements at 49 CFR part 172 subpart E (labeling) or subpart F (placarding); a hazard statement or pictogram consistent with the Occupational Safety and Health Administration Hazard Communication Standard at 29 CFR 1910.1200; or a chemical hazard label consistent with the National Fire Protection Association code 704).

Pursuant to 11 Miss. Admin. Code Pt. 3, R. 1.22 [40 C.F.R. § 279.22(c)(1)], Containers and aboveground tanks used to store used oil at generator facilities must be labeled or marked clearly with the words "Used Oil."

Solid Rocket Motor Test Stand Building (Testing Site):

This area is used to test the propellant model engines. The model engine is hydrostatic tested prior to testing the igniter.

There is a fire pit area that is covered with pea gravel on the bottom. This area is used to test the propellants "ignitability test". Photo #5.

90-Day Central Accumulation Area (CAA):

The inspectors did not visit the 90-day CAA. This area was controlled by the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF). It is located outside away from facility operations, covered with an overhead roof, and locked. Photos were received by email, it is not clear if the building and containers were properly marked or labeled. Photo #6.

Pursuant to 11 Miss. Admin. Code Pt. 3, R. 1.3 [40 C.F.R. § 262.15(a)(5)(i)(ii)], a generator must mark or label its containers with the following: (A) The words "Hazardous Waste"; (B) An indication of the hazards of the contents (examples include, but are not limited to, the

applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic); hazard communication consistent with the Department of Transportation requirements at 49 CFR part 172 subpart E (labeling) or subpart F (placarding); a hazard statement or pictogram consistent with the Occupational Safety and Health Administration Hazard Communication Standard at 29 CFR 1910.1200; or a chemical hazard label consistent with the National Fire Protection Association code 704); and (C) The date upon which each period of accumulation begins clearly visible for inspection on each container.

12) Records Review:

Anduril is not fully operational; therefore, no records were reviewed during the inspection. As a small quantity generator, the following records must be kept at least for three years:

- Waste Manifests - (40 C.F.R. § 262.40 (a), (c), and (d).and exception reports [40 C.F.R. § 262.42(b)] and [40 C.F.R. § 262.43]
- Land Disposal Restriction (LDR) Records - [(40 C.F.R. § 268]
- Waste Determination/Profiles – [40 C.F.R. § 262.11(f)
- Training Records – recommended to keep records [40 C.F.R. § 262.16(b)(9)(iii)]
- Weekly Inspection Record for the Central Accumulation Area - [40 C.F.R. § 262.16(b)(2)(iv)]
- Emergency Responders Agreements - [40 C.F.R. § 262.16(b)(8)(vi)(B)]
- Waste Minimization Certification - [(40 C.F.R. § 262.27(b)]

13) Closing Conference

After the inspection, the inspectors had their exit briefing with LaDonna Bell and Dibyendu Paul. During the meeting, the inspectors discussed the observations made during the inspection and the inspection was concluded.

14) List of Attachments

Attachment 1 – Photo Log:

Photos taken on: December 7, 2023

Photos taken by: LaDonna Bell

Photos taken with: LaDonna Bell's Cell Phone

15) Signed

NEREIDA HERNANDEZ MORALES Digitally signed by NEREIDA HERNANDEZ MORALES Date: 2024.02.16 10:31:15 -05'00'

Nereida Hernandez Morales
Life Scientist

16) Concurrence

ARACELI CHAVEZ Digitally signed by ARACELI CHAVEZ Date: 2024.02.16 14:21:07 -05'00'

Araceli B. Chavez
Chief
RCRA Enforcement Section

Appendix 1 – Photo Log

Photos taken on: December 7, 2023
Photos taken by: LaDonna Bell

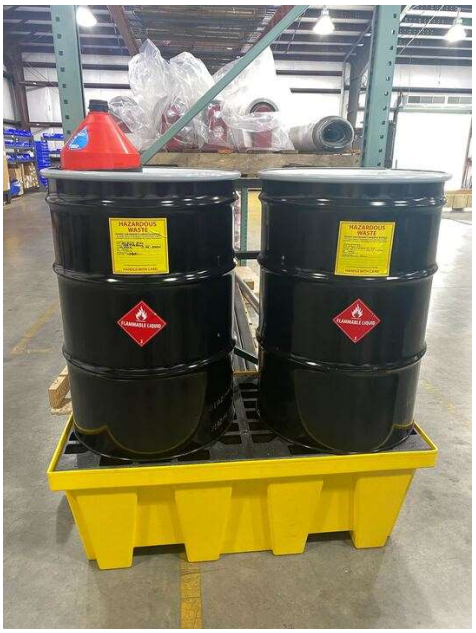

Photo #1 – Container in the 3D Printing Area

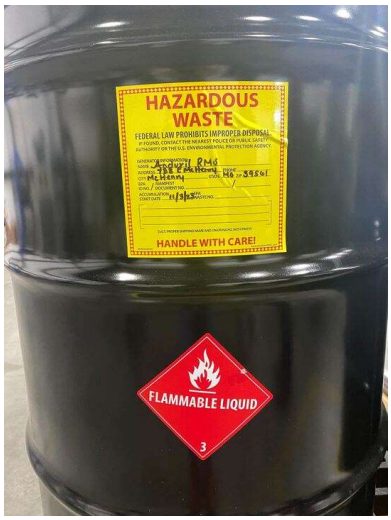

Photo #2 – Container in the 3D Printing Area

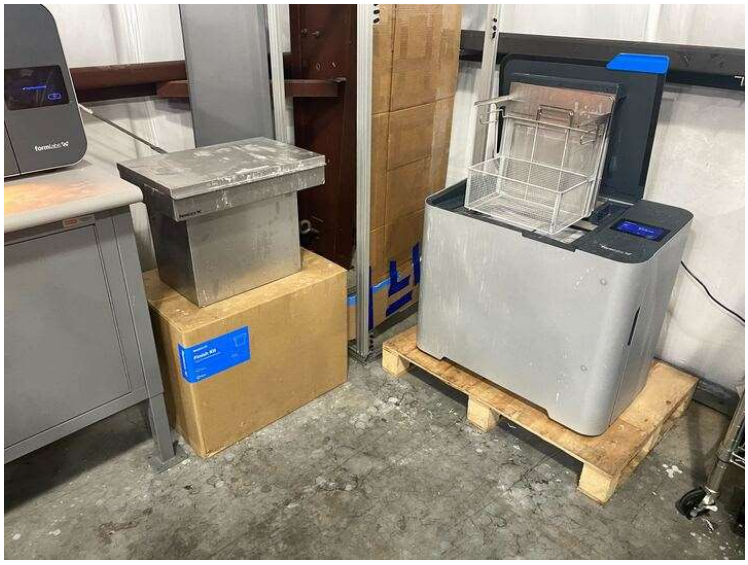

Photo #3 – Sink without label

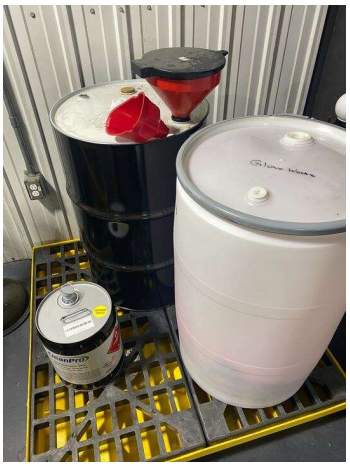

Photo #4 – Containers: R & D Energetics and Low-Rate Production (Testing Site Lab)

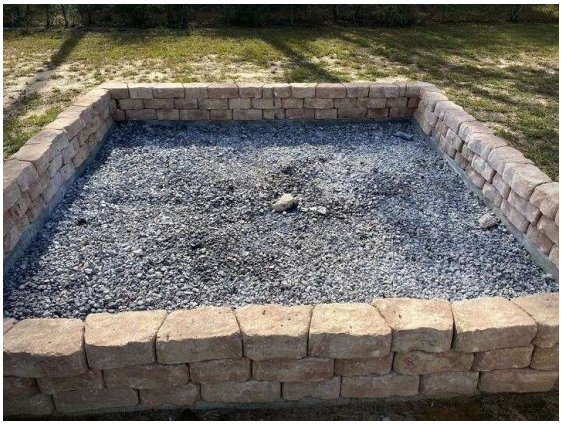

Photo #5 – Fire pit area that is covered with pea gravel on the bottom.

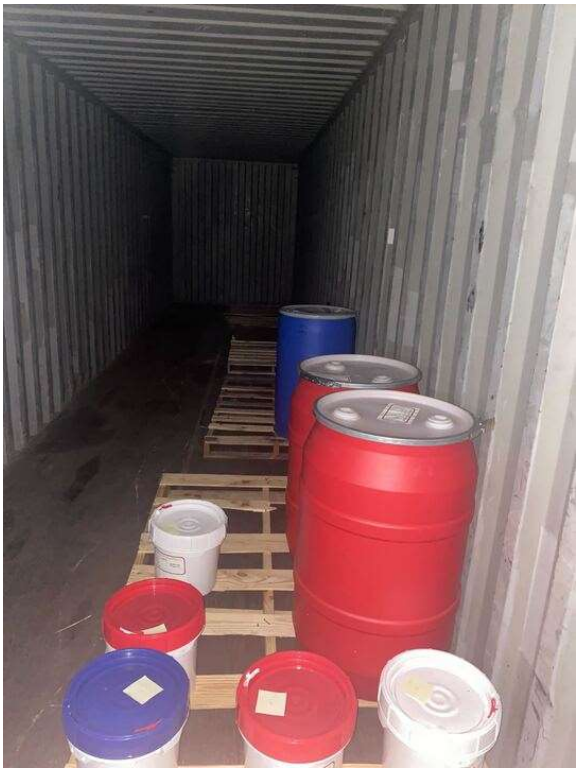

Photo #6– Central Accumulation Area