



## REGION 3

PHILADELPHIA, PA 19103

**Report Title:** Clean Air Act Inspection of USALCO, LLC  
**Inspection Date(s):** 11/1/2023  
**Regulatory Program(s):** NSPS, MACT  
  
**Company Name:** USALCO, LLC  
**Facility Name:** USALCO, LLC  
**Facility Location:** 2601 Cannery Avenue  
Baltimore, MD 21226  
**Latitude:** 39.230529 **Longitude:** -76.56363  
**County/Parish:** Anne Arundel County  
  
**AFS/ICIS-Air Number:** MD00000002451000376  
**Permit Number:** 510-0376  
**NAICS Code:** 325180 **SIC:** N/A  
**Unique Project #:** ECAD-141

| <b>Facility Representatives:</b>                       | <b>Point of Contact</b>             |
|--------------------------------------------------------|-------------------------------------|
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**EPA Lead Inspector**

**Signature**

**Carly Joseph**

**Date**

701 Mapes Road

Fort Meade, MD 20755-5350

**Supervisor**

**Signature**

**Kristen Hall**

**Date**

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## **I. Introduction**

The United States Environmental Protection Agency (EPA) conducted a Clean Air Act (CAA) inspection at USALCO, LLC. (USALCO or Facility) to verify compliance with applicable State and Federal regulations. The Maryland Department of the Environment was notified of the inspection on October 17, 2023, via email. On October 30, 2023, EPA notified the Facility of the planned inspection via phone and email. EPA emailed a list of records for review to Shawn Jaisler, prior to the inspection (see Attachment 1). These records are listed in the Records Review section of the report.

The inspection included an evaluation of the Facility's processes and its compliance with the CAA. All information included in this report is the result of statements by the facility representatives, materials shown to the inspectors by the facility representatives, and/or documents provided by the Facility representatives to the inspectors at the time of, or subsequent to, the inspection. In addition, information gathered prior to the inspection from a review of EPA and State records may be included in Section A. Summary of the facility.

## **A. Summary of the Facility**

The facility is located at 2601 Cannery Ave, Baltimore, MD 21226. As stated on the company's website (<https://www.usalco.com/>). USALCO "is the premier manufacturer of aluminum based chemicals for industrial and municipal markets".

The facility received a CAA State Operating Permit (510-0376) from MDE issued on April 17, 2019.

USALCO is classified as Synthetic Minor for NO<sub>x</sub> and a minor source for all other criteria pollutants. The Facility is subject to, or potentially subject to the following federal regulations:

- 40 C.F.R Part 60 Subpart Dc: Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
- 40 C.F.R Part 63 Subpart JJJJJ: National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources
- 40 C.F.R. Part 63 Subpart ZZZZ: National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
- 40 C.F.R Part 60 Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

## **B. Inspection Opening Conference**

At 9:00 AM on November 1, 2023, EPA inspectors arrived at the Facility for a CAA Inspection and conducted a brief opening conference. USALCO, LLC. was represented by Environmental Health and Safety Manager, Shawn Jaisler, and Site Manager, David Morgan. EPA inspectors, Carly Joseph and Bruce Augustine, presented their credentials and explained the purpose of the visit was to conduct a CAA inspection to determine compliance with their permit and any applicable regulations. Additionally,

EPA informed the facility representatives of their right to claim any confidential business information (CBI). At that time, Shawn Jaisler did not claim any photos or documentation as CBI.

## **II. Site Activity/Process Description**

USALCO has been operating at the current location since approximately the 1950s. USALCO merged with G20 Technologies approximately 4 years ago and is publicly owned. USALCO's headquarters is located in Baltimore, MD. The facility manufactures aluminum-based products for industrial and residential use mainly for the removal of contamination in water. USALCO's biggest customer is currently Grace; but the company also supplies multiple customers. Products are distributed in liquid form and a sand granular material. Approximately 60-70% of USALCO's product is liquid, stored in tanks or liquid totes, and 30-40% is dry packaged in pallets and USALCO ships products worldwide. The site has more than 100 employees including full-time, management, and transportation.

The facility operates 365 days a year under two 12-hour shifts. Production is done on both shifts. The facility schedules 4-5 shutdowns a year for repairs, maintenance, and to change out reactors. During these scheduled shutdowns USALCO normally shuts down one process at a time not the whole facility.

The facility consists of 10 buildings:

- Building 2: Liquid and Dry Aluminum Sulfate
- Building 3: Loading dock and Warehouse
- Building 4: Polyaluminum Chloride and Sodium Aluminate Plant
- Building 5: Aluminum Chlorohydrate
- Building 6: Corporate Office
- Building 7: Tech Center and Office
- Building 8: Aluminum Chloride
- Building 9: Polyaluminum Hydrate (not in operation)
- Building 10: Polymer Plant (not in operation)

Mr. Jaisler indicated that hydrate, the facility's biggest raw material, is brought in twice a year from overseas and stored in Building 4. The facility also has one offsite storage area for additional hydrate. The facility receives approximately 15,000 cubic yards of hydrate twice a year from overseas. Additional raw material includes sulfuric acid, caustic, water, and hydrochloric acid which arrives at the facility via rail and trucks and is stored in bulk tanks. There is a tank farm with approximately 18 tanks between Building 2 and 4 used for product and raw material storage. Water for production is supplied by the City of Baltimore. Wastewater and stormwater are treated with caustic for pH control prior to discharge for treatment at a POTW.

The facility has three boilers located in Building 2 used to produce steam for the process and emergency generators to allow for an orderly shutdown of the process. Boilers located in Buildings 9

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and 10 are currently not operating. The three boilers are natural gas fired while the emergency generators are diesel fired.

The opening conference concluded at 10:18 AM.

### **III. Observations**

EPA inspectors were led on a walkthrough of the Facility at 10:23 AM by Shawn Jaisler and David Morgan of USALCO. EPA inspectors noted photos would be taken during the Facility walkthrough by Carly Joseph (Attachment 2).

Upon exiting the meeting room, the inspection team was led to building 4: Polyaluminum Chloride and Sodium Aluminate Plant. Bulk raw material hydrate is also stored in this building. Mr. Jaisler stated that the raw material, hydrate, was brought in from Turkey. The team observed a large pile of hydrate and an excavator actively removing raw material from the pile. George Simpkins, production manager of the Sodium Aluminate Plant, walked the team through the process where hydrate is dumped into the digester via conveyors. Water and caustic are mixed with the hydrate and brought to a boil using steam from a boiler to produce Polyaluminum Chloride (PAC). The inspection team also observed where slurry is produced in building 4 which is a mixture of hydrate and water. The facility uses a main control valve to monitor the pressure on the slurry being pumped to Buildings 8 and 2. Next, inspectors observed two digesters with stacks that vent to the atmosphere and multiple above ground storage tanks containing slurry, sodium aluminate, PAC, and back-up storage tanks.

The inspection team exited Building 4 and observed the HCl unload scrubber located in between Building 2 and 4. The scrubber controls emissions from the bulk HCl storage tank. The inspectors observed a pressure drop reading of 2.59 inches of water on the HCl unload scrubber. Mr. Jaisler explained the scrubbers pressure drop is monitored Monday, Wednesday, and Friday during the unloading process where the facility unloads two trucks on these days. USALCO representatives stated that caustic and acid are brought to the facility via rail.

Next, the team observed a Baldor 65kW emergency generator. According to the date observed on the oil filter, the generators last oil change was conducted June 28, 2022. A non-resettable hour meter was not observed on the generator and USALCO was not sure where it was located. A second generator was observed at this location; however, no engine plate was located to determine when it was constructed or its size.

The inspection team then viewed three natural gas fired boilers with the capability to burn #2 fuel oil. The team observed Boiler 1 rated 6.275 MMBTU and constructed in 1970, which was operating at the time of the inspection; Boiler 2, rated 8.37 MMBTU and constructed in 1993, which was also operating during the inspection; and Boiler 3, rated 12.56 MMBTU constructed in 1966. Mr. Jaisler indicated the facility operates boilers 2 or 3 depending on demand. Boiler 3 is the facility's primary boiler, and the

facility switches between Boiler 1 and 2 for supplemental steam. The boilers were last fired on #2 fuel oil in July or August of 2022. The team observed the natural gas flow meter. The boilers make 90lb steam for the processes.

The team left the boiler room and proceeded to Building 2: Liquid and Dry Aluminum Sulfate. During this production process sulfuric acid and aluminum tetrahydrate is added to the first reactor. Slurry and water is metered into the 2<sup>nd</sup> Reactor. The mixture is pumped to different reactors that are held under different atmospheric pressures and temperatures to cook off the impurities. For the production of dry aluminium sulfate the mixture is sent to a dryer then stored in warehouse for pallet packaging. To produce liquid aluminum sulfate, the mixture is sent to a dilution tank and then stored in tanks prior to bulk loading in totes. During the team's walkthrough three reactors were operating and one reactor was temporarily down. Antwan Copper, supervisor of Building 2, indicated one reactor being out of service does not limit production on the liquid side. However, production on the dry side takes longer. Both sides of production have scrubbers with flow rates that are recorded hourly during production. Scrubber flow rates observed during the inspection were: Reagent Scrubber 72.9gpm and 209°F; Dry Scrubber 54.6gpm; and Scrubber 17.72gpm. Emissions from liquid and dry aluminum sulfate vent to a wet scrubber and mist eliminator system.

After leaving Building 2 the team observed a 275kW MTU Onsite Energy generator with 628 hours. The inspectors proceeded to Building 6 and observed a 1.342 MMBTU/hr office boiler. Next, the team went to Building 9, which is currently not in operation, and observed two natural gas fired 5.5 MMBTU/hr Bryan boilers. These boilers were constructed in 1992. The inspection team then observed Building 10: Polymer Plant, that is no longer in operation and is used as a storage area. The building contained an inactive scrubber system. The team observed a tank farm attached to the back of Building 2 that stores product, sulfuric acid, and caustic.

Next, the inspectors entered Building 8: Aluminum Chloride. USALCO employee, Tim Hutson, who is a shift lead, explained the production of dry and liquid aluminum chloride to the team. Mr. Hutson indicated that dry hydrate is dumped onto conveyors and sent to this building before being put into hoppers that go to digesters (D5 and D6). Additives in the manufacturing process include water and hydrochloric acid. The digester mixes and heats the mixture. The mixture heats/cooks in reactor D5, then goes to an atmospheric tank, then to reactor D6 where the mixture is heated/cooked again. This batch process vents to a scrubber system under forced induction prior to discharge to the atmosphere. After the liquid aluminum chloride is produced it undergoes testing and is sent to storage tanks. Excess HCl from the process is sent to the scrubber system. Each of the digesters has a scrubber that was observed during the inspection. Pressure drop across the D5 scrubber was 1.9" water with a flow rate of 309gpm. The D6 scrubber flow rate was 311gpm. Reactors were also observed in Building 8 that have been out of service for 2-3 weeks. When operating, these reactors are vented to the D5 scrubber.

Lastly, the inspection team observed Building 5: Aluminum Chlorohydrate. Tom Wiebking, maintenance manager for Building 5, assisted with leading the inspection team through Building 5. Mr. Wiebking explained that aluminum chloride and water is heated in reactor 1, 2, and 3. The mixture is

removed from reactor 3 or 4 then goes into a prefilter tank to cool. The mixture then goes to the filter press where water is removed and metal is sold as specs and the product, aluminum chlorohydrate, is stored in bulk storage tanks. Solid cake residue from the batch process is disposed of in drums and removed from the site via truck.

The walkthrough concluded at 1:16 PM.

#### IV. Records Review

The records review commenced immediately after the plant walkthrough at 1:22 PM. EPA inspectors reviewed documents requested in the October 30, 2023, email to Shawn Jaisler (see Attachment 1). Records were provided on October 31, 2023, and November 7, 2023, via email. EPA is currently reviewing the records submitted by USALCO. Below are the records requested and what was provided by Shawn Jaisler and David Morgan of USALCO.

1. Provide a plot plan of the facility that includes and clearly identifies each process area and emission unit.-*Has not been provided*
2. Provide a copy of the most recent air Permit issued by MDE. – *Facility Provided a hard copy.*
3. For each boiler, engine, furnace, or generator in place at the facility, provide the following information- *Facility provided a hardcopy of some records during the inspection; however, not all information for every boiler or emergency engine was been provided.*
  - a. Make and model;
  - b. Year constructed;
  - c. Appropriate heat input or rating (MMBtu/hr, kW, HP, etc.);
  - d. Fuels combusted (natural gas, fuel oil, etc.);
  - e. Monthly hours of operation from January 2020 to the present;
  - f. Monthly fuel use (gallons, MMscf, etc.) from January 2020 to the present;
  - g. Any emission controls used to limit emissions either pre or post combustion.
  - h. Provide copies of any performance tests which may have been conducted on either any combustion unit or a process that was conducted to determine emissions or compliance with an applicable emission limit. Provide copies of any tests that were conducted from January 2013 to the date of the inspection.
4. Provide copies of boiler tune-up records, including CO measurements before and after tune-up from January 2020 to the date of the inspection.- *Has not been provided*
5. Provide copies of fuel supplier certifications for fuel oil delivery from January 2021 to the date of the inspection. The fuel oil delivery receipt should clearly identify the fuel sulfur %. – *Boiler fuel certificates Provided for 2020-2023.*
6. For each exceedance of a permit condition that occurred from January 2020 through the date of the inspection provide the following information:- *Has not been provided.*
  - a. The emission unit(s) where the exceedance or deviation occurred;

- b. Date and time the exceedance or deviation commenced and the date time the facility returned to compliance;
  - c. The root cause of the exceedance or deviation;
  - d. The permit condition or emission limit that was exceeded;
  - e. Estimated rate of emissions; and
  - f. Proposed or actual corrective action(s) that returned facility to compliance.
7. Provide calculations of the potential to emit (PTE) for NO<sub>x</sub>, SO<sub>2</sub>, VOCs, PM, and HAPs for each combustion unit and facility wide along with supporting calculations. These calculations should include each emission factor and its derivation (e.g., stack test, CEMS, AP-42, etc.). - *Records submitted for 2020-2022*
8. Provide copies of any emission statements submitted to MDE for calendar years 2020 through 2022 including emissions of NO<sub>x</sub>, SO<sub>2</sub>, PM, VOCs, and HAPs. Also, provide calculations for the actual emissions generated and reported. Also, provide the rolling twelve-month NO<sub>x</sub> emissions for the facility from January 2020 to the date of this inspection. - *Records submitted for 2020-2022*
9. Provide copies of any enforcement actions issued to USALCO by either EPA or MDE within the previous five years.- *Has not been provided.*
10. Provide copies of any initial notifications or notifications of compliance status submitted to EPA or MDE by USALCO for any applicable regulation under 40 C.F.R. Parts 60 or 63. This includes, but is not limited to, 40 C.F.R. Part 60 Subparts Dc and 40 C.F.R. Part 63 Subparts, ZZZZ and JJJJJ. *Has not been provided.*
11. Provide copies of any quarterly, semiannual, and annual reports submitted by the Facility to EPA and USALCO for any applicable regulation under 40 C.F.R. Parts 60 & 63 from January 2021 to the date of the inspection- *Facility provided hard copies for 2021 and 2022.*
12. Monthly production records of all aluminum salt products manufactured, including the type and amounts for the past five years.-*Electronically provided via file share for 2020-2023*
13. For each scrubber located in the Aluminum Sulfate, Multi-Purpose manufacturing, Aluminum Chloride, Sodium Aluminate, and Aluminum Salts manufacturing processes, provide the following information: *Has not been provided by Facility*
  - a. A list of each scrubber and which process it is located;
  - b. which emission points are controlled by each scrubber
  - c. Provide records of the scrubber flow rate monitoring for each stage of the scrubber, jet venturi, or packed tower from January 2020 to the date of the inspection;
  - d. Provide records of pressure drop monitoring for each stage of the scrubber, jet venturi, or packed tower from January 2020 to the date of the inspection;
  - e. Provide records of monitoring for pH of the scrubber solution for each scrubber, jet venturi, or packed tower from January 2020 to the date of the inspection.
14. A log of all process upset periods including the date and duration of each upset period for the past 5 years. – *Has not been provided.*

15. Provide records of the scrubbing solution flow rate entering the wet scrubber and mist eliminator system when producing dry alum in the aluminum sulfate manufacturing process from January 2020 to the date of the inspection. - *Has not been provided.*
16. For the Multi-purpose Manufacturing Process, provide the following records from January 2020 to the date of the inspection:- *Has not been provided.*
  - a. Flow rate of the scrubbing solution entering the jet venturi of the two-stage caustic scrubbing system;
  - b. Flow rate of the scrubbing solution entering the packed bed tower of the two-stage caustic scrubber system;
  - c. Records of the pH of the scrubbing solution in the packed tower of the two-stage caustic scrubber system.
17. Provide records of the exhaust gas temperature at the heat recovery stack monitoring from January 2020 to the date of the inspection. Also, identify any periods during that timeframe where an alarm was triggered.- *Has not been provided.*
18. Provide the volume of HCL and Sulfuric Acid received for the last year on a rolling 12 month basis- *Provided via email for year 2023*
19. Provide the last date building 9 and 10 operated.- *Has not been provided.*

## V. Closing Conference

After the records review, EPA inspectors, Shawn Jaisler and David Morgan had a brief closing conference to ask additional questions and discuss observations. The EPA inspectors noted that the investigation is on-going, and any areas of concern identified in the final report do not necessarily reflect a violation or deviation, rather, they are areas that will require further investigation. EPA also noted that they would issue an inspection report within in 60 days, with a copy to the State. Simultaneously, EPA will perform a detailed review of records and may have additional questions. The inspection concluded at 2:23 PM.

The following have been identified as potential issues during the inspection. They are issues that require either further investigation by EPA or additional information or explanation by USALCO.

- One generator was observed without a non resettable hour meter and other emergency generators were observed onsite. These generators are potentially subject to NSPS IIII and MACT ZZZZ. During the inspection, USALCO representatives were not sure if the hours of operation for the generators are being monitored and recorded and if the generators maintenance is being conducted, as required. Also, it is not clear that all of the generators onsite are listed in the Facility permit.
- While inspecting the scrubbers for Digesters D5 and D6 in Building 8, the inspection team observed negative reading on flowmeter gauge scrubber for Reactor D6. USALCO stated that they would investigate the cause of this reading.

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## **VI. List of Attachments**

- Attachment 1:      Email correspondence to Mr. Jaisler of records requested to review during inspection
- Attachment 2:      Photo Log

# ATTACHMENT 2: PHOTO LOG

Facility: USALCO, LLC

Location: 2601 Cannery Avenue, Baltimore, MD 21226

Inspection Date: 11/1/2023

EPA Inspector(s): Carly Joseph and Bruce Augustine

Photographer: Carly Joseph



Photo Number: RIMG0376

Photo Description: Hydrate or raw product



Photo Number: RIMG0377

Photo Description: Slurry Tank and Digester in Building 4



Photo Number: RIMG0378

Photo Description: PAC to Sodium Aluminate to Backup Storage Tanks



Photo Number: RIMG0379

Photo Description: HCl Unload Scrubber



Photo Number: RIMG0380

Photo Description: Acid and Caustic Tank Farm



Photo Number: RIMG0381

Photo Description: Emergency Generator

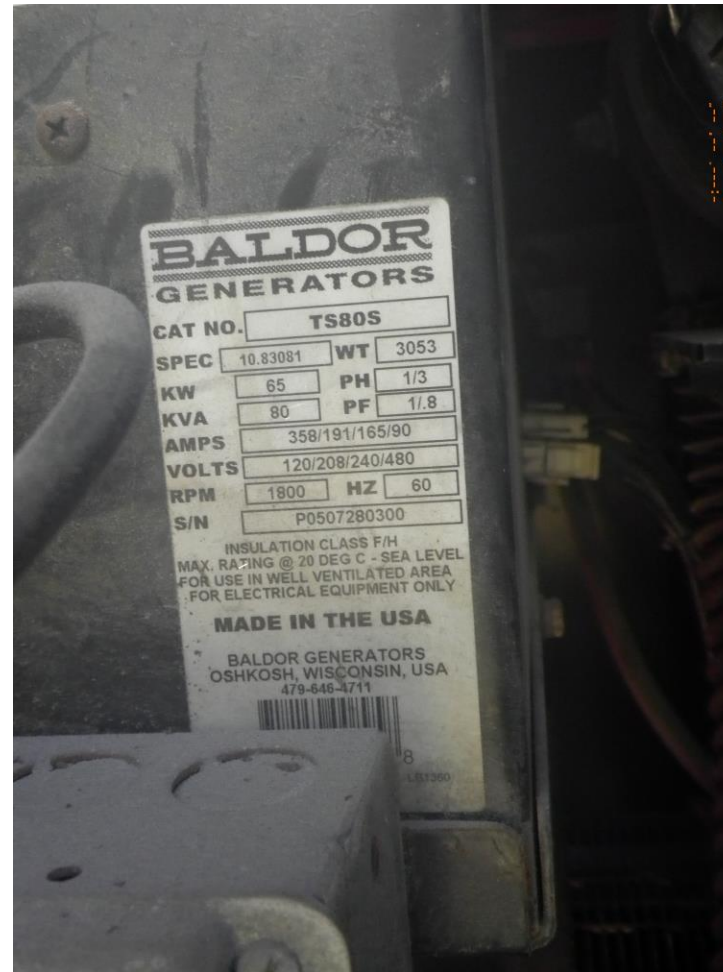


Photo Number: RIMG0382

Photo Description: 65 kW Emergency Generator Label



Photo Number: RIMG0383

Photo Description: Emergency Generator



Photo Number: RIMG0384

Photo Description: Overview of Boilers #1, #2, and #3



Photo Number: RIMG0385

Photo Description: Natural Gas Flow Meter



Photo Number: RIMG0386

Photo Description: 3 Reactors in Building 2



Photo Number: RIMG0387

Photo Description: Dry Scrubber (short), Backup Scrubber, Reactor Scrubber



Photo Number: RIMG0388

Photo Description: Dryer



Photo Number: RIMG0389

Photo Description: Hydrate Waste Product



Photo Number: RIMG0390

Photo Description: 275 kW Boiler Plate Label



Photo Number: RIMG0391

Photo Description: Tank Farm Adjacent to Building 1, Product and Sulfuric Acid

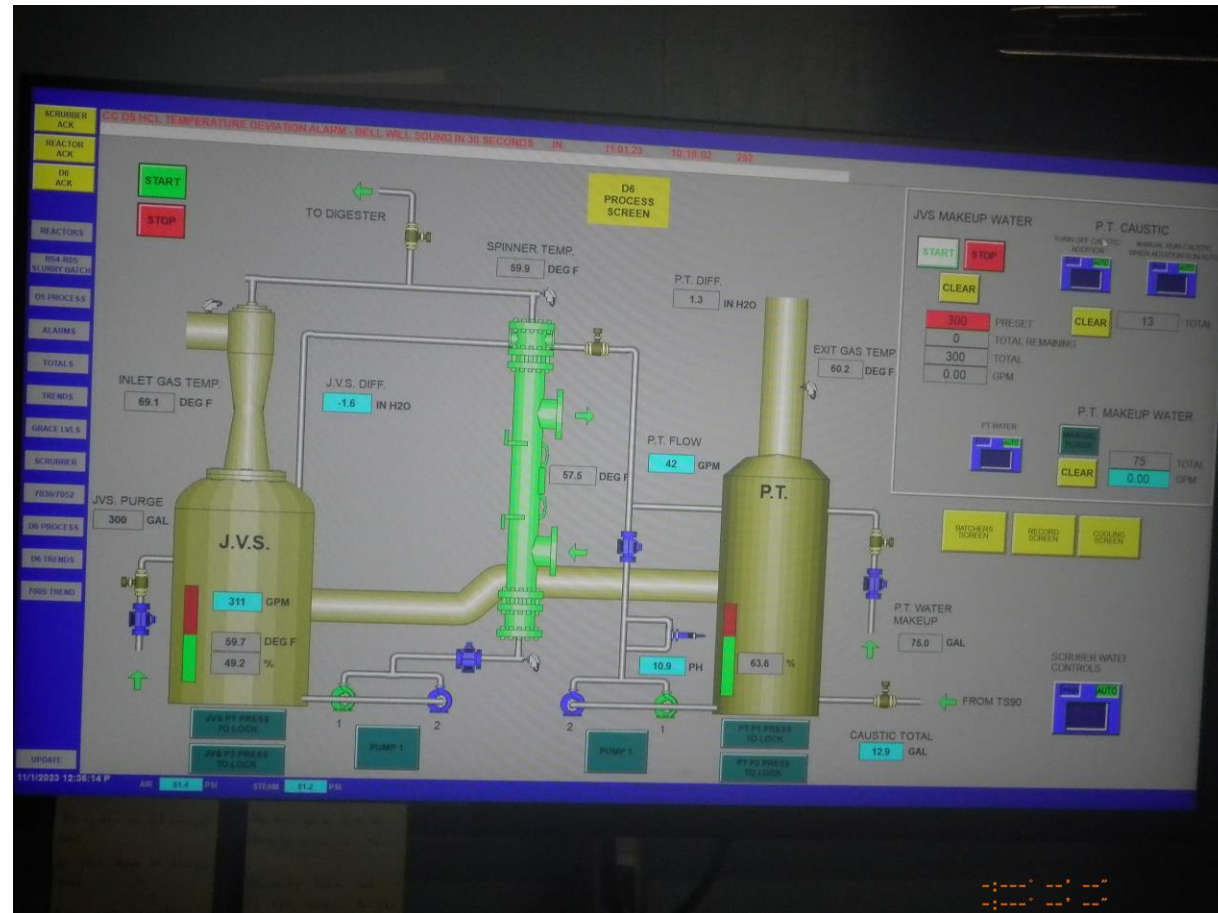


Photo Number: RIMG0392

Photo Description: Control Screen for D6

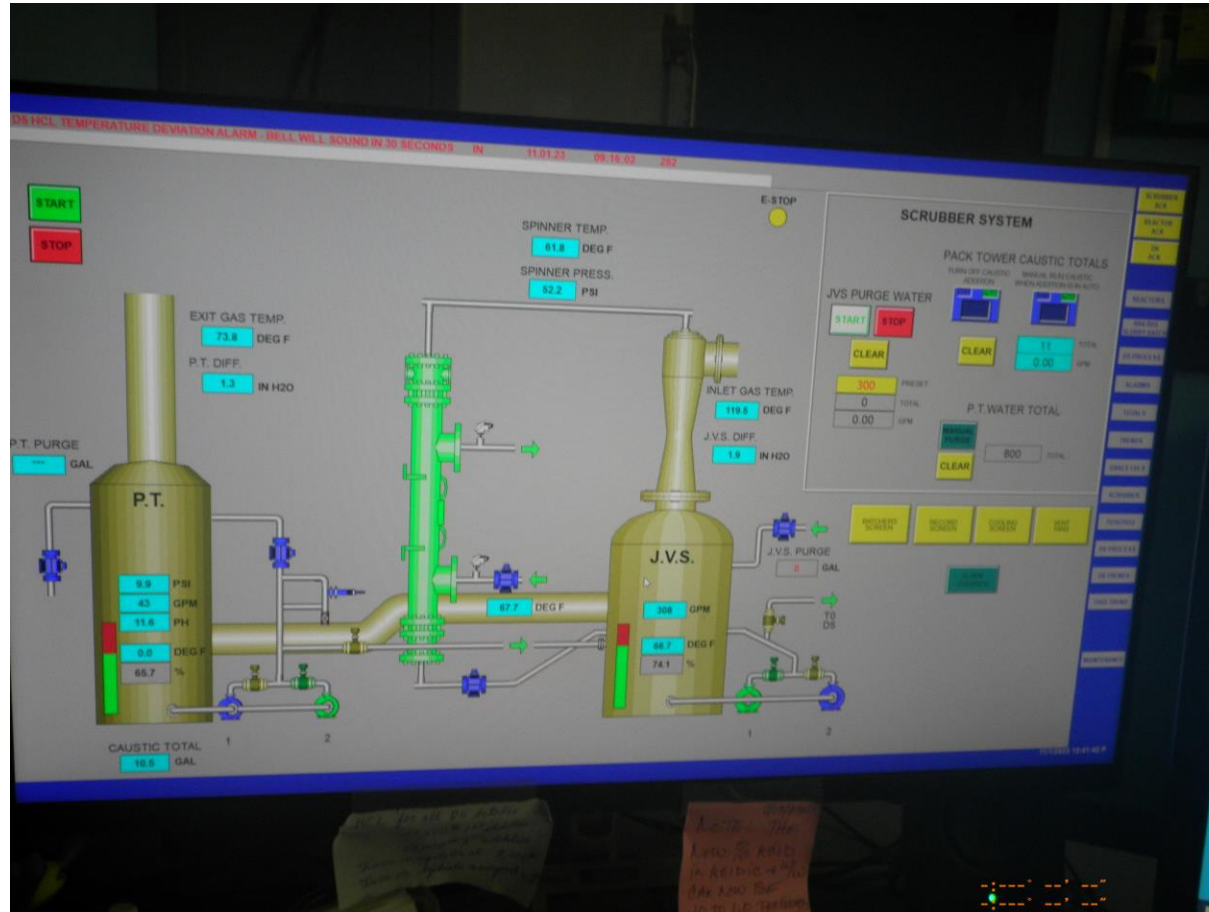


Photo Number: RIMG0393

Photo Description: Control Screen for D5



Photo Number: RIMG0394

Photo Description: D5 Pack Tower and Scrubber



Photo Number: RIMG0395

Photo Description: D6 Pack Tower and Scrubber



Photo Number: RIMG0396

Photo Description: Reactor for Aluminum Chlorohydrate Process

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EPA Clean Air Act Ins....msg

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**From:** Joseph, Carly <Joseph.Carly@epa.gov>  
**Sent on:** Tuesday, October 31, 2023 4:02:21 PM  
**To:** sjaisler@usalco.com  
**CC:** Augustine, Bruce <augustine.bruce@epa.gov>; dakota.blum@maryland.gov  
**Subject:** EPA Clean Air Act Inspection USALCO  
**Attachments:** Records Request USALCO.docx (18.18 KB)

Good morning Shawn Jasiler,

As discussed on our voice message to Craig Owen and later over the phone today, EPA Region 3 will be conducting a Clean Air Act (CAA) inspection of USALCO this Wednesday, November 1, 2023. My colleague, Bruce Augustine, and I anticipate arriving at 2601 Cannery Ave, Baltimore MD around 8:30 AM.

This inspection will focus on the existing air permit and applicable regulations. The inspection will include, but may not be limited to: a brief opening conference reviewing historical operations and overview of the facility's processes, a facility walk-through (during which photographs will be taken), and a review of records requested (see attached). The Maryland Department of the Environment (MDE) has been notified of the inspection.

To help facilitate the inspection, it would be appreciated if the records in the attached document were made available for review. I will send a separate link using our secure file sharing site goanywhere.com where you can upload responsive records. Please note that USALCO has the right to claim any documents it feels confidential as confidential business information (CBI). If USALCO is claiming any material CBI, please note each page that is CBI and let me know. Please let me know if you have any questions.

Please confirm receipt of this message and don't hesitate to contact me with any questions.

Thank you,

*Carly Joseph*

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