UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
Four Penn Center – 1600 John F Kennedy Blvd
Philadelphia, Pennsylvania 19103-2852

Report Title:	Clean Air Act Inspection of Royal Green LLC
Inspection Date(s):	6/23/2022
Regulatory Program(s):	PA SIP Provisions
Company Name:	Royal Green LLC
Facility Name:	Royal Green LLC - Reading
Facility Location:	30 W Huller Lane Reading, PA 19605
Latitude:	40.416389 **Longitude:** -75.931667
County/Parish:	Berks County
AFS Number:	ICIS 3601428817
Permit Number:	Natural Minor No: 06-03128
NAICS Code:	None **SIC:** 5093
Unique Project #:	3EA22CA079A

Facility Representatives: **Point of Contact**

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Jeffery Warmkessel, Environmental Consultant ☐
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EPA Inspectors:

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State/Local Inspectors:

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EPA Lead Inspector KIM LAUFENBERG Digitally signed by KIM LAUFENBERG Date: 2022.08.10 07:56:25 -04'00'
Signature **Kim Laufenberg** **Date**
Four Penn Center – 1600 John F Kennedy Blvd
(3ED21)
Philadelphia, PA 19103-2852

Supervisor KRISTEN HALL Digitally signed by KRISTEN HALL Date: 2022.08.10 08:55:17 -04'00'
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 Royal Green LLC (Royal Green or Facility) to verify compliance with applicable State and Federal regulations. The Pennsylvania Department of Environmental Protection (PADEP) was notified of the inspection on June 10, 2022, via email. On June 21, 2022, EPA notified the Facility of the planned inspection via phone and email. EPA emailed a list of records for review to Diego Cabrera, prior to the inspection (see Attachment 1). These records are listed in the Records Review section of the report.

A. Summary of the Facility

The Facility is a metal scrapyard located at 30 W Huller Lane, Reading, PA 19605. Royal Green LLC owns the entirety of the scrapyard and is partnered with AMG Resources. The company's website indicates they are an expert in sourcing and preparing scrap to meet customer's exacting requirements and a lead in marketing and brokering scrap to domestic and export markets. Royal Green currently has 58 employees with four working strictly at their Lebanon, PA location (the rest work at the Reading facility that was inspected). Their general shifts are 6AM-4:30PM weekdays and 12-7PM Saturdays. The Facility operates two shredders, one draining rack, two shears, and one oil burner at this location.

PADEP issued the Facility a minor source permit on September 14, 2021.

Royal Green is classified as minor source for particulate matter (PM) and volatile organic compounds (VOC). The Facility is subject to, or potentially subject to the following federal regulations:

- PA SIP Provisions

B. Inspection Opening Conference

At 9:00AM on June 23, 2022, EPA inspectors arrived at the Facility for a CAA Inspection and conducted a brief opening conference. Royal Green LLC was represented by Diego Cabrera, Mark Adams, and Amber Busacco, along with environmental consultant Jeffery Warmkessel. William Borst and Kayla Eller of PADEP were also present. EPA inspectors, Kim Laufenberg and Erin Willard, presented their credentials and explained the purpose of the visit was to conduct a full compliance evaluation (FCE) 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, Royal Green did *not* claim any photos or documentation as CBI.

II. Site Activity/Process Description

Royal Green was originally a family-owned business. It became a joint venture in 2013 when Royal Green LLC joined with AMG Resources, though Royal Green still owns the site (~14 acres). The other Royal Green owned site is located in Lebanon, PA, roughly 45 minutes away, which serves as a feeding yard.

The Facility has multiple sources or suppliers (most being other scrap yards) of scrap metal which fluctuates depending on market prices. Royal Green focuses on metal recycling, including steel, brass, copper, stainless steel, insulated wire, lead, and other metals. Royal Green owns and operates two shredders and two hydraulic mobile shears that are utilized to sort and cut/shred the metal to customer grade and size specifications. The Facility itself is split into two sides: shear versus shredder. The shears process roughly 25% of the scrap purchased by the site, including large size materials like trailers, large machinery, etc. One shear is specifically used to reduce the size of the scrap before it is placed into the shredder while the other shear scrap is tailored to shearing metal for steel mills or for export.

The Facility's two shredders process the remaining 75% of the purchased scrap to produce a clean ferrous end-product to sell to steel mills (primarily Ohio Valley) which is shipped via railcar.

As the material first enters the facility, any automobiles from peddlers or that isn't already crushed are placed on the one draining rack to ensure all fluids are fully drained before shredding. The Facility has had issues with explosions inside the shredder and no longer accepts vehicles off the street; vehicles are mainly provided by auto salvage. Roughly 8-10% of the scrap shredded on-site is from automobiles currently (down previously from 10-15%). The drained oil is collected and filtered for reuse in the waste oil heater, otherwise it is sold to Midwest gas. No CFC refrigerants are removed on-site; instead, waivers must be signed ensuring there are no CFCs in the vehicles. Batteries and mercury switches are placed in a secured storage and contracted out for direct removal (via Deka Battery). Multiple fire hydrants are located on-site in case of a fire, the most recent fire was noted as being two weeks prior at Mill #1.

The two shredders were installed in the late 1980s. One shredder is 98"x104" (Mill #1) while the other is 80"x104" (Mill #2) in size. Mill #1 has a shredder with a 3,500 horsepower (HP) electric engine which shreds light iron; material from infrastructure, construction, automobiles, piping, etc. After shredding, the material travels up a steel belt while the light waste is drawn into the cyclone tower. At this point, the scrap starts to be split into two streams: metal (ferrous material) and non-ferrous material otherwise known as "fluff". Shredded scrap continues to be conveyed to a double magnetic drum. The ferrous material sticks to the drum, rotating onto another conveyor, while the non-ferrous material drops and is carried by conveyor to a storage bin. Finally, a sorting house with a shaker and picking table is used for the final manual separation where non-ferrous material, aluminum, and copper are pulled off the conveyor and separated by hand. The fluff is kept under roof and later shipped off-site for reuse as landfill cover by Conestoga. In December 2021, Royal Green completed an extensive construction project on Mill #1 that involved gutting the shredder and replacement of all the internal metal liners to extend the life of the shredder while reducing maintenance.

Mill #2 also has a shredder with a 3,500 HP electric engine that shreds clean steel; scrap metal that is more uniform, consisting of building skeletons, guard rails, stampings, and similar metal fabrication processes. This shredder has a baghouse along with a single magnetic drum to remove ferrous material (~98% of this scrap was said to be magnetic as it is not mixed like that of the scrap in Mill #1). The fluff is sent to the non-ferrous processing area on-site along with the fluff from Mill #1 where eddy current bins further sort the material. The estimated throughput of the Facility is 900 tons/day with Mill #1 processing 650 tons/day and Mill #2 processing 250 tons/day, both with a capacity of 60 tons/hour.

Both shredders are equipped with water and soap suppression systems to control the emissions of particulate matter (PM) and reduce the flammability of the scrap. The water and soap suppression system operates continually whenever a shredder is in operation. The gallons of soap consumed in the suppression system is monitored daily. The mills are taken out of service for annual maintenance approximately 1-3 weeks per year. There are no back-up sources of energy. One waste oil burner is on-site for shop heat. A 10,000-gallon underground storage tank (UST) for diesel, two 500-gallon aboveground gasoline tanks, and one 2,000-gallon UST for heating fuel are also on-site.

The opening conference concluded at 9:45AM.

III. Observations

EPA inspectors were led on a walkthrough of the Facility at 9:50AM by Diego Cabrera and Mark Adams of Royal Green, along with Jeffrey Warmkessel, the Facility's environmental consultant. William Borst and Kayla Eller of PADEP were also present for the walkthrough. EPA inspectors noted photos would be taken during the Facility walkthrough (Attachment 2).

The inspection started at the Facility's vehicle draining rack. A large pile of stacked cars was observed (called the "peddler pile") which was noted to be much larger than usual (two years of backlog) due to waiting for the draining rack's construction. Mark Adams stated cars with electric batteries (Toyota Prius, Tesla, etc.) are not accepted. Additionally, it was said the Facility would be constructing a roof over the draining rack in the near future. Some vehicles were noted to have their gas tanks removed prior delivery. If a tank was not removed, Royal Green staff were said to check to ensure the tank had five punctures.

Next, the inspection team proceeded to the light iron area which was also noted to be twice the size as usual due to the recent shredder fire. Royal Green indicated that employees sort this pile in order to remove large items that are directed to the shear side of the Facility, rather than going through the shredders. These piles directly feed into one of the mobile shears, then are shredded via Mill #1. At the time of the inspection, the Mill #1 was not in operation due to the feed crane being out of service (staff were observed working on the crane). An under-mill oscillator was observed, and staff indicated that it is used to shake the material to filter out fines (called "Royal Soil"). Staff pointed out the trommel and eddy current and explained these pieces of equipment are used to remove the non-ferrous material ("zorba") while the magnetic drum separates the ferrous material. The aluminum zorba is sold as is, while the ferrous material continues onto four pickers that further sort the material which is ultimately sent to steel mills via railcar.

Several 330-gallon liquid soap totes were observed in this area, and staff explained the soap is gravity fed into the water spray suppression system. Some water recycling was mentioned as not all evaporates.

The walkthrough continued to Mill #2, which was in operation at the time of the inspection. Mark Adams noted a temporary shield/hood was being utilized on top of the shredder, because the permanent hydraulic cover was severely damaged by an errant piece of scrap that was too large to fit into the unit. Piles of wheel rims and skeletons (or vehicle car frame/chassis only) were observed and said to be part of Mill #2 feedstock. The ferrous material from Mill #2 was noted to be sorted further via trommel and shipped via railcar to steel mills. The gravity feed water spray suppression system was also observed along with three picking sheds and two eddy currents (with ISS sensor sorter) to remove the stainless steel, brass, copper, and wires.

The fines sorting was further observed with a sensor sorter using air sensors to pull out cables and wires (later noted to be exported to India). The ultra-fines get mixed back in with other fines for additional sorting. At the time of the inspection, the oscillator line was not in operation nor linked to this process due to staffing shortage.

Finishing the walkthrough, the inspectors were driven to the mobile shear area used for shearing material prior to shipping as finished material. The material is separated into two piles: mixed and clean. The mixed or dirty piles (containing other metals and non-metallic components) are primarily exported to China or India while the clean piles are primarily sent to the Port of Newark, New Jersey. The shear piles are only for larger pieces of equipment or machinery. The inspection concluded with a walkthrough of the maintenance shed, where a welder for fabrication, waste oil burner used for comfort heat in the winter, and a sink-style parts washer were observed.

Royal Green indicated that shredder maintenance was contracted out to a 3rd party and typically scheduled for Saturdays, while longer downtime is coordinated with buyers and sellers. Quarterly testing for solid waste requirements occurs for the fluff to ensure it meets specifications for use as intermediate landfill cover, the material is referred to as “Royal Soil” when sold for this purpose. It was also noted no material is bailed (no bailers were observed on-site). The Facility said they owned a FLIR (forward looking infrared) camera that is used to identify scrap pile hot spots, as a means of preventing fires.

The walkthrough concluded at 11:30AM.

IV. Records Review

The records review commenced immediately after the plant walkthrough at 11:32AM. EPA inspectors reviewed documents requested in the June 21, 2022, email to Diego Cabrera (see Attachment 1). A review of the records requested is included below and records were provided at the time of the inspection via hard copy, except request #3, 4a, and 9, which were not provided. PADEP provided Request #9 after the inspection, while Requests #3 and 4a were followed up via email the week after the inspection.

1. *Provide a facility plot plan which identifies the process units and associated emission points.*
2. *Provide a process flow diagram for the facility.*
3. *Provide a list of each request for permit determination or permit application submitted to the PADEP since January 2019. Also, provide a list of each permit or permitting determination issued to Royal Green LLC since January 2019.*
4. *Annual calculations (preferably emailed in an unlocked Microsoft Excel format) for the previous 24 months, including:*
    a. *Monthly emissions of VOCs, PM, and NOx for each shredding unit and facility-wide along with supporting calculations and variables;*
    b. *Continuous water flow rate for shredder top & conveyor feed line;*
    c. *Shred feed ratio, percentage of automobile scrap to other scrap shredded.*
5. *List of trained shredder operators/scrap inspectors and their training requirements.*
6. *Daily logs for the past year including:*
    a. *Hours of operation per rolling 12-month period (calculated monthly);*
    b. *Water & foam suppression system inspections;*
    c. *Visual inspection of fugitive dust;*
    d. *Pressure drop across fabric filter;*
    e. *Process rate for the shredder;*
    f. *Maintenance records (for the shredder).*
7. *A list of all combustion sources at the facility such as boilers and engines,*
    a. *For each boiler or engine identified, provide:*
        i. *Date of installation;*
        ii. *Fuel(s) combusted;*
        iii. *Maximum heat input rating (MMBtu or kW/hr);*
        iv. *Hours of operation monthly from January 2019 through the present.*
    b. *Fuel usage on a monthly basis for any combustion equipment at the facility (boilers, emergency generators, fire pumps, etc.) for the previous 4 years.*
8. *Each exceedance of a permit condition for the previous 4 years containing the following details:*
    a. *Subject source;*
    b. *Time and date;*
    c. *Cause;*
    d. *Duration;*
    e. *Estimated rate of emissions;*
    f. *Proposed corrective action.*
9. *For the past 4 years, provided any annual PADEP inspection reports.*
10. *Provide a list of each enforcement action issued to Royal Green LLC by either the PADEP or EPA since January 2019.*

V. Closing Conference

After the records review, EPA inspectors, PADEP inspectors, and Diego Cabrera and Amber Busacco of Royal Green 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 reports 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 12:19PM.

The following have been identified as *potential* issues during the inspection. They are issues that require further investigation by EPA:

- Calculation of the facility's potential to emit (PTE) for VOCs and how the Facility's PTE value compares to the major source threshold for Pennsylvania.

VI. List of Attachments

Attachment 1:	Email correspondence to Diego Cabrera of Royal Green for records requested to review during inspection
Attachment 2:	Photo Log

Laufenberg, Kim

From: Laufenberg, Kim
Sent: Tuesday, June 21, 2022 4:09 PM
To: Diego.Cabrera@RoyalGreenLLC.com
Cc: Willard, Erin; "Borst, William"; "Eller, Kayla"
Subject: Upcoming CAA Inspection of Royal Green LLC - June 23, 2022
Attachments: List of Records Requested from Royal Green LLC.docx

Dear Mr. Cabrera,

As discussed over our phone call today, EPA Region 3 will be conducting a Clean Air Act (CAA) inspection of Royal Green LLC on Thursday, June 23, 2022. I anticipate arriving at 30 W Huller Lane, Reading, PA 19605 around 9:00AM. Due to the current COVID restrictions, instead of having an opening conference, we would like to start with introductions and immediately proceed to the facility walkthrough where we can discuss current and historical operations at the facility and see the process(es). I will have a steel toed bott, safety glasses, and a hard hat as you noted on our call which is required at the facility.

The scope of the inspection will include, but may not be limited to, a review of all air pollution sources, a facility walk-through (during which photographs will be taken), and a review of records requested (see attached). Erin Willard from EPA in addition to William Borst and Kayla Eller from Pennsylvania Department of Environmental Protection (PADEP) have been notified of the inspection and plan to attend.

To help facilitate the inspection, it would be appreciated if the records in the attached document were made available for review.

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

Sincerely,

Kim Laufenberg
US Environmental Protection Agency, Region III
Enforcement and Compliance Assurance Division
Air Section (3ED21)
1650 Arch Street
Philadelphia, PA 19103
(215) 814-2265
laufenberg.kim@epa.gov

APPENDIX 2: PHOTO LOG

Facility: Royal Green LLC

Location: 30 W Huller Land, Reading, PA 19605

Inspection Date: 06/23/2022

EPA Inspector(s): Kim Laufenberg

Photographer: Erin Willard

Photo Number: DSC00277
Photo Description: Draining Rack and Stockpiled Cars

Photo Number: DSC00278
Photo Description: Peddler Pile

Photo Number: DSC00279
Photo Description: Light Iron Pile

Photo Number: DSC00280
Photo Description: Mill #1 Infeed (cyclone in background)

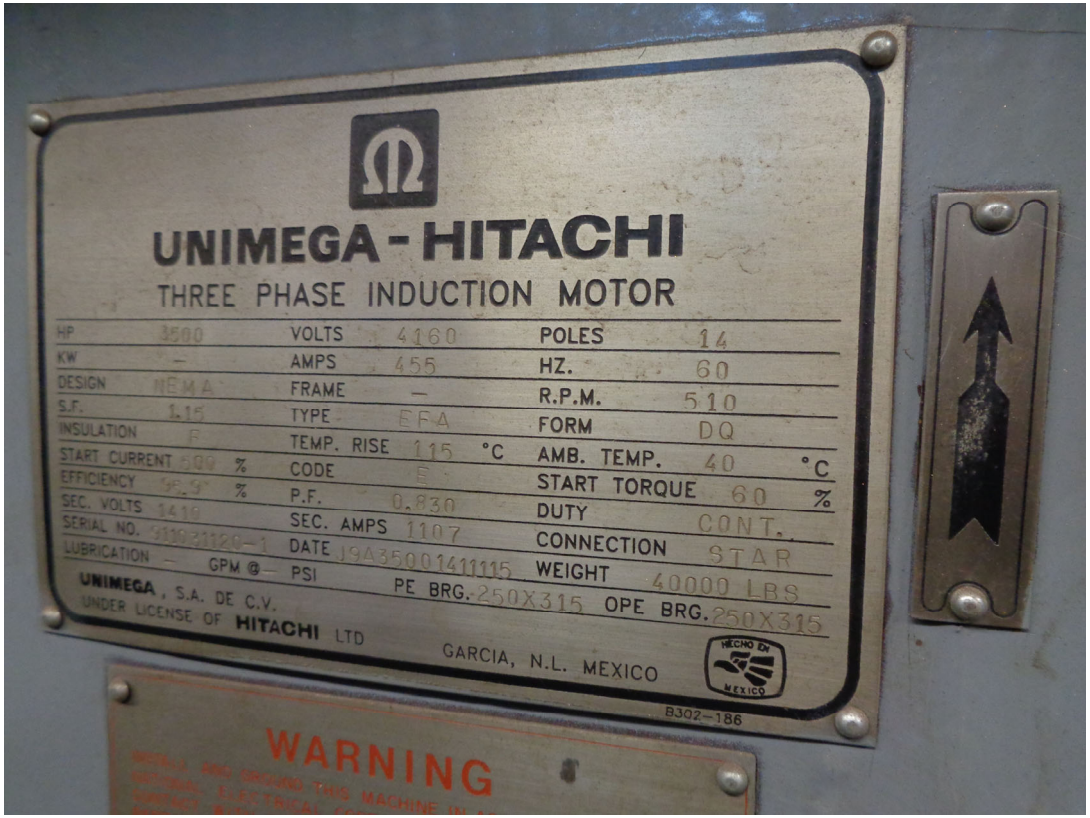

Photo Number: DSC00281
Photo Description: Mill #1 Motor Plate

Photo Number: DSC00282
Photo Description: Trommel & Eddy Current & 3 Bins (Zorba, ASR, ASR Fines)

Photo Number: DSC00283
Photo Description: Double Magdrum at Mill #1

Photo Number: DSC00284
Photo Description: Wheel Pile Feed to Mill #2

Photo Number: DSC00285
Photo Description: Mill #2 Feed Belt & Skeleton Pile

Photo Number: DSC00286
Photo Description: Mill #2 Electromagnet Trommels

Photo Number: DSC00287
Photo Description: Nonferrous Processing Feed Bin (feed pile in foreground)

Photo Number: DSC00288
Photo Description: Mobile Shear

Photo Number: DSC00289
Photo Description: Oil Burner for Shop Heat