

**CLEAN WATER ACT COMPLIANCE EVALUATION INSPECTION REPORT
U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 5**

Purpose: Compliance Evaluation and Stormwater Inspection

Facility: U.S. Department of the Navy (Navy)
Naval Surface Warfare Center, Crane Division (NSWC Crane)

Date of Inspection: February 7-9, 2023

EPA Representatives:

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Purpose of Inspection:

Jonathan Moody and I, from EPA Region 5's WECAB, conducted an announced compliance evaluation and stormwater inspection of the Navy's Crane, Indiana installation ("facility") to assess its compliance with the Clean Water Act (CWA) and applicable permits. The CWA inspection occurred alongside a separate Resource Conservation and Recovery Act (RCRA) inspection that evaluated compliance with hazardous waste management regulations. The inspection was a follow-up to one conducted in September 2020, which focused on the facility's wastewater treatment plant (WWTP) operations, sanitary sewer overflows (SSOs), and the Demolition Ground Sedimentation Ponds (DGSPs). This time, we focused on a few of the facility's pretreatment operations, certain direct discharge outfalls (not associated with the WWTP), and certain stormwater outfalls covered by its National Pollutant Discharge Elimination System (NPDES) industrial stormwater general permit No. INRM01211 established under 327 Indiana Administrative Code 15-6 (Rule 6). We also sought to obtain more information on a July 2022 fire involving red phosphorus that occurred at the facility. Christina Sandlin, an IDEM wastewater inspector, was present for just the second day of the inspection.

In addition to the stormwater general permit, which was most recently renewed on August 9, 2019, the facility operates under NPDES Permit No. IN0021539, which was renewed on October 1, 2022 and expires on September 30, 2027.

Since October 3, 2022, the Navy has been under a Federal Facility Compliance Agreement (FFCA) to mitigate issues discovered during and associated with the September 2020 inspection pertaining to SSOs, unrepresentative effluent flow monitoring, and exceedances of permitted discharge limitations. Full implementation of the control measures presented in the FFCA is to occur, as set forth in the FFCA, in March 2025. Facility representatives briefly provided an update on those efforts, with Ms. Ranard stating that the demolition range will be shut down in October so that most of the associated maintenance can occur simultaneously.

Arrival Time: February 7, 2023, 8:20 a.m.

Departure Time: February 9, 2023, 11:15 a.m.

- ☒ Credentials presented
- ☒ CBI protection assurances discussed

Facility Background

According to the Naval Sea Systems Command website, at www.navsea.mil, NSWC Crane is the largest tenant of Naval Support Activity Crane (NSA Crane), the third largest naval installation in the world with approximately 100 square miles of property. It is a shore command of the U.S. Navy, and its mission is to provide acquisition engineering, in-service engineering and technical support for sensors, electronics, electronic warfare, and special warfare weapons. It also applies component and system-level product and industrial engineering to surface sensors, strategic systems, special warfare devices and electronic warfare systems, among other responsibilities. NSWC Crane employs over 3,800 people at the facility.

Another major tenant of NSA Crane is Crane Army Ammunition Activity (CAAA), who conducts loading, assembly, and storage of conventional ammunition at the facility. About half of the facility acreage is occupied by CAAA, with an ordnance storage capacity greater than 650,000 tons. NSWCrane provides environmental services to CAAA and NSA Crane. During the inspection, we looked at some buildings, structures, and processes owned and operated by CAAA in addition to those owned and operated by NSWCrane.

July 5-6, 2022 Red Phosphorus Fire

In the late morning of February 7th, Ryan McDuffee, NSWCrane RCRA Permit Manager, provided most of the information regarding this incident, which occurred near Building 69 at the facility. Building 69 is where CAAA combusts white phosphorus in an Ammunition Peculiar Equipment (APE) rotary kiln incinerator and mixes it with water to produce phosphoric acid as a byproduct for sale. In a staging area near Building 69 at the time of the fire, CAAA had been storing wooden pallets of canisters that held red phosphorus pellets (81mm mortar rounds) and epoxy that it covered with a tarp to prevent rain exposure. The tarp though collected phosphine gas that had been generated from the red phosphorus being under hot and humid conditions. Due to the temperature in this area in the days leading up to the fire being particularly high (with the heat index on July 5 being around 110°F), all of the red phosphorus was converted to white phosphorus, and the phosphine gas auto-ignited when it was exposed to the atmosphere. In its 2022 Stormwater Pollution Prevention Plan (SWPPP), NSWCrane estimates that approximately 57,000 pounds of phosphorus was burned. However, a July 20, 2022, 15-day report from NSWCrane to IDEM states that approximately 80,310 to 91,783 of phosphorus was burned.

After the fire, CAAA sealed the remaining crates containing the 81mm red phosphorus mortar rounds and projectiles with moisture-absorbent materials and has been storing them in vented underground locations elsewhere on-site to prevent another fire. CAAA or NSWCrane do not monitor the temperature of these storage areas. CAAA will eventually send the remaining amount of red phosphorus at the facility off-site after determining how the hazardous material will be safely and properly packaged for shipment. It already secured a contract for this shipment activity.

After allowing the fire to openly burn out (after first applying water for a short period of time), CAAA cleaned red phosphorus out of the storage containers and sent residual phosphorus off-site as hazardous waste. It also applied a red-colored sand to the exposed area, which we visited in the afternoon of February 7th (Photos 1-5, *see* Attachment 1). Neither CAAA nor NSWCrane performed analytical testing of the soil to confirm that no red phosphorus was present in the soil at and around the location of the fire. Mr. McDuffee claimed that due to the insolubility of the red phosphorus and its tackiness from the epoxy, it would not be able to traverse the miles needed to make it off-site. In addition, he stated that downstream testing did not reveal anything. According to the notes for the sample taken on July 6, 2022 though, the pH reading was obtained outside of the maximum allowed holding time, and the sample arrived at the Pace Analytical laboratory at 8.9°C, which is greater than the 6°C maximum preservation temperature for total phosphorus in 40 C.F.R. Part 136. In addition, due to a high concentration of total phosphorus in the sample, it required dilution to effectively measure the concentration, but then the results were

below the method detection limit. The results of this test showed a pH reading of 6.56 and a total phosphorus reading of 0.30 milligrams/liter. He expects, however, that there is still white phosphorus in the ground in spots that had not been dug up.

We visited the location of the fire again the morning of February 9th. At that time, a storm event had recently occurred, and we noticed that stormwater had pushed the sand used to cover the location into the stormwater trench, where stormwater was actively flowing (Photos 50-54). Using an Aqua TROLL 600 sonde manufactured by In-Situ with a pH probe and a temperature/specific conductivity probe¹, Mr. Moody monitored the water at the base of the slope running away from where the fire occurred (near Stormwater Outfall 020) and obtained a pH of 7.1 and conductivity of 155 microsiemens per centimeter ($\mu\text{S}/\text{cm}$). A little further downstream, he found the pH to be 6.3 and the conductivity to be 63 $\mu\text{S}/\text{cm}$.

Building 69 Area

In the afternoon of February 7th and again in the morning of February 9th, we toured the Building 69 Area. At the time of the inspection, CAAA had temporarily shut down the phosphoric acid production process but intends to still run white phosphorus and red phosphorus that does not contain epoxy through the incinerator when operations resume. The process runs about 3 months every 3 years.

We observed ash around the incinerator, which would be washed away with stormwater into a surrounding grate that goes to a sump to which all drains in the area are gravity fed (Photos 6-9). A facility representative confirmed that no overflow from process operations goes into this sump. Process water overflow goes to a phosphoric acid holding tank, and when that tank is two-thirds full, the water is pumped to a neutralization tank (Photo 10). An operator uses litmus strips to test the pH in the sump and does pH neutralization if necessary to bring the pH to 6.0 before pumping the water within to the sewer going to the WWTP. The majority of the time, CAAA will recycle the water back through the system to save the acid for reuse. At the time of the inspection, the neutralization tank was disconnected because the intermittent phosphoric acid production process was not running. CAAA will turn on the pump, which operates automatically when the water level in the sump reaches a set height, only after three tests of the pH show values in the proper range. Facility representatives stated that they have never seen the sump overflow, and during the inspection, the water level was several feet below the surface grate. According to Ms. Ranard, pumping records are not kept, and she did not know the last time it occurred.

In addition, in the sump lies a tank that Ms. Ranard stated receives dilute acid overflow. On February 9th, Mr. Moody monitored the water in the sump and obtained a pH reading of 3.5 and a conductivity reading of 439 $\mu\text{S}/\text{cm}$. At that time, the water surface seemed to show a sheen

¹ Mr. Moody conducted a pH calibration of the monitoring device with 4.00, 7.00, and 10.00 standard buffer solutions and a specific conductivity calibration with a 1,413 $\mu\text{S}/\text{cm}$ standard the morning of February 8th. At the conclusion of the monitoring activities on the last day of the inspection, Mr. Moody conducted a calibration verification and obtained pH readings that were 0.28 units higher than each of the buffer solutions and a conductivity of 1,466 $\mu\text{S}/\text{cm}$, which is within the expected operation of the monitoring device and indicates that the measurements taken during the inspection were likely lower than what the meter showed.

(Photo 55). Despite this low pH reading, a facility representative stated that the pH meter at Lift Station 20, which the water in the sump flows through, has not showed any readings out of range lately. James Huff, the WWTP operator, met us at the lift station. He measured the pH there and obtained a reading of 5.98 (Photo 64). While the display showed this number, Mr. Moody put his sampling probe into the lift station water and obtained a pH reading of 6.7. Adjacent to this lift station is a creek that receives stormwater from the Building 69 Area and the Building 200 Area (discussed in more detail below) (Photos 60-63). Mr. Moody tested this water and obtained pH readings of 6.9 in the stream coming from the Building 69 Area, 6.0 in the stream coming from the Building 200 Area, and 5.8 at the confluence of these streams.

East of Building 69 is the APE 1236 rotary kiln incinerator, located indoors, which CAAA uses to demilitarize small arms munitions (Photos 57-59). All loading and unloading occurs indoors as well. No water is used in this process. Ash from the kiln goes to the Central Storage Facility, located elsewhere at the installation, which is where NSWC Crane stores hazardous waste for periods that may exceed 90 days. Connected to the kiln building is a drum that facility representatives believe collects dust and ash from burning.

South of Building 69, we saw various random equipment and dumpsters lying about that do not appear to be discussed in the SWPPP for this area.

Demolition Range/Outfall 015

Also on February 7th, we saw the wash rack for vehicles and equipment that had been at the Demolition Range, which is where detonation of propellants, explosives, and pyrotechnics occurs (Photo 11). NSWC Crane does not use any soaps or detergents at the wash rack. Generated wastewater collects in a sedimentation pond and discharges through Outfall 015 (Photos 12-14). There appears to be potential for metals to be on the vehicles and equipment, but NSWC Crane's NPDES permit does not include monitoring for any metal other than zinc at this outfall. Ms. Ranard confirmed that sampling occurs at the outfall for the permitted parameters once a month if there is flow. In addition to zinc, these parameters include carbonaceous biochemical oxygen demand (CBOD₅), flow, oil and grease, pH, and total suspended solids (TSS). NSWC Crane started sampling the pond as well for TSS due to an exceedance of this parameter at the outfall 3-4 years ago. The only exceedance shown in the Discharge Monitoring Reports (DMRs) that Ms. Ranard provided for 2020-2022 is of TSS in October 2022 and for less than 2 percent over the limit.

Ammunition Burning Grounds (ABG)/Outfall 014

The last process area we walked through on February 7th was the ABG, where CAAA conducts open burning of waste materials from facility production areas, including propellants, explosives, and pyrotechnics, similar to the Demolition Range. Also like the Demolition Range, the ABG contains a wash rack that does not use soaps or detergents. Unlike the Demolition Range wash rack, it is contained within a building, and instead of the generated wastewater going to a sedimentation pond, it goes to a sump outside of the building that drains to Outfall 014 (Photo 15). NSWC Crane monitors for the same permitted pollutants at this outfall as it does at Outfall

015. Based on the DMRs Ms. Ranard provided for 2020-2022, there have been no exceedance at this outfall during that period.

An ABG operator confirmed that the burn pads in the area are covered when not in use, as required by the SWPPP, which we observed to be true during the inspection (Photo 16). In between the rows of burn pads are trenches in which stormwater goes to a pipe leading to an outfall, where NSWC Crane conducts annual monitoring. NSWC Crane installed an approximately 15-foot concrete wall along the bank of the trench to deal with erosion with plans to extend it (Photos 17-19). It also is currently in the process of regrading the burn pad area, but stormwater will still flow to the outfall when that work is completed. We noted a small amount of what appeared to be charred material on the ground near one of the burn pads.

We also saw three sludge dewatering units north of the burn pits that drain to underground storage. Every 90 days, CAAA pumps the underground tank contents to Building 3110 in Mine Fill A, which treats explosive-contaminated wastewater and discharges to the WWTP (discussed in more detail below).

Pyro Area/Outfall 101

At the end of the first day of the inspection, we briefly drove through the Pyro Area, which is where CAAA conducts mixing, loading, and modifying of pyrotechnic items. We did a more thorough walking tour of this area at the start of the second day of the inspection, starting with Building 126, where CAAA uses industrial presses to produce illumination devices. It uses barium nitrate and potassium nitrate in this process. Water generated from cleaning of the equipment on the weekends, which is done without soap or cleaning chemicals, drains to a settling basin to the west of the building near an area designated as 2883 (covered caged storage area for hazardous waste less than 90 days) and then to the WWTP. During the inspection, the basin appeared to be half full of water. Ms. Ranard believes that no other process water in the Pyro Area drains to this basin. Two to three times a week, the ABG takes drums of solids that have been separated from the wastewater in the basin. This separation activity and the transferring of it to drums takes place indoors.

We then looked inside Building 2854 next to Building 126, which contains hydraulic fluid pumps for the presses. In the southwest corner, cooling water from one of the pumps was spilling into a drain, which an operator thought goes to the sanitary sewer. Outside at the southwest corner of Building 2854 is a sump that we observed with water flowing into it. The operator and other facility representatives did not know the source of this water, which may be a leak from a water line.

Next, we walked through Building 3637 (east of Building 126), which has plating operations and an associated pretreatment system subject to the categorical standards at 40 C.F.R. Part 433 (metal finishing). Rinse water overflowing from the chromate conversion coating and passivation, zinc electroplating, zinc phosphating, and other plating operations goes through the pretreatment system starting at Tank T-1. The final effluent tank (T-10) is equipped with a pH probe (Photo 20). If the pH of the wastewater is compliant, it discharges through Outfall 101 to the sanitary sewer that goes to the WWTP; otherwise, it is sent to Tank T-1 to be recycled back through the system. Review of the 2020-2022 DMRs showed no exceedances during this period.

A 24-hour composite sampler sitting nearby showed a temperature reading greater than the 6°C maximum allowed for sampling under 40 C.F.R. Part 136 (Photos 21 and 22; Mr. Moody took the former picture shortly after I had opened the door of the sampler, and he took the latter after first waiting for the temperature to drop below 6°C before it rose again). NSWC Crane was not collecting samples at the time. The plating and pretreatment operations used to be in an adjacent building (Building 3064). The NPDES permit erroneously states that the Outfall 101 discharge is limited to process wastewater from this building instead of Building 3637.

At the loading dock outside the west side of Building 3637, we saw water on the ground around an uncovered dumpster going to a storm drain (Photos 23-26). The water had debris and the ground it covered appeared to be stained.

North of Building 3637 is Building 123, which houses the Pyro Area's machine shop. We noted a room containing chemicals used for floor washing (Photos 27-29) that discharges to the sanitary sewer. There was also a deburring drum with a small trough around the outside of it at the bottom that held stagnant water (Photo 30). Overflows from this trough would go to a floor drain that goes to the sanitary sewer. An operator said that this deburring drum has not been used in years.

The last place in the Pyro Area we saw was Buildings 1885 and 1886. The former contained "red phosphorous work" according to the SWPPP. At the time of the inspection, these buildings were being demolished (as also noted in the SWPPP).

Building 2521/Outfall 501

After the Pyro Area, we went to Building 2521, which contains a small arms coating operation. Like Building 3637 in the Pyro Area, Building 2521 has operations that are subject to the metal finishing categorical standards at 40 C.F.R. Part 433 with process wastewater that discharges through Outfall 501 to the sanitary sewer. Rinse water from phosphate and black oxide coating operations continuously goes to a sump that discharges through this outfall, and all other wastewater is pumped into drums as needed. Unlike Building 3637, there is no pretreatment for the Building 2521 processes. NSWC Crane just samples the wastewater at Outfall 501 for compliance with NPDES permit limits, which includes grab sampling semimonthly for pH and oil and grease and composite sampling annually for metals. Based on the DMRs Ms. Ranard provided for 2020-2022, there were no exceedances at Outfall 501 during this period.

In addition to Outfalls 101 and 501, there is one more at the facility (Outfall 601) through which process wastewater subject to the metal finishing categorical standard flows. A holding tank receives wastewater that NSWC Crane empties to the outfall. We decided not to inspect Outfall 601 and the associated process due to Ms. Ranard explaining that it discharges only once a year. It also had no exceedances from 2020 through 2022.

Building 104 Area

Next, we toured Building 104 and the surrounding area. In this building, CAAA loads, assemblies, and packs projectiles and missiles. There is a grit blast machine inside and a grit blast accumulator located outside the building on the northeast side that contains a sealed drum

that collects material from the blasting operation. We saw a floor drain next to a grit blast machine that an operator confirmed does not go anywhere. It used to be connected to the sanitary sewer until the WWTP effluent experienced a silver exceedance that was traced back here. There is a sampler outside that NSW Crane has used monthly since then to ensure there's no silver going to the sewer. In the area, we also observed open dumpsters (Photos 35 and 36). There was a white substance on the ground next to one of them north of Building 104.

Immediately southwest of Building 104 is Building 118, which houses an air compressor. According to the SWPPP, this building had floor drains for condensate that at one time discharged to the environment but now goes to the sanitary sewer. We observed no floor drains in the building during the inspection.

Further to the west is Building 2654, outside of which sat an approximately 10,000-gallon fuel oil tank on a concrete pad that had oil stains (Photo 38). A storm drain is located adjacent to this tank. The SWPPP erroneously refers to this tank as being 30,000 gallons.

Finally, at or near the stormwater outfall, located north of Building 104 and identified as Outfall 021 in the SWPPP (Photo 37), Mr. Moody took pH and conductivity readings, with results of 7.4 and 3,221 $\mu\text{S}/\text{cm}$, respectively.

Building 200 Area

We then saw some of the area around Building 200, where CAAA manufactures flares. Operations were ongoing at the time of the inspection, and due to the high explosion risk, we were prevented from going inside the building or too far east at this location. Ms. Ranard explained that cleaning water used in Building 200 is piped underground to a contamination pit to the east. Before being discharged to the WWTP, NSW Crane samples the water in the pit for eight RCRA metals. We saw some oil staining on the ground in the loading dock on the north side of the building.

Defense Logistics Agency (DLA) Scrap Yard

Next, we walked around the DLA Scrap Yard, where we observed dumpsters overflowing with scrap metal (Photos 39-41). Ms. Ranard said that NSW Crane is in the process of transferring the scrap yard operations to another location at the facility, and she confirmed that she will submit a notice of intent (NOI) to IDEM for this change. She expects that she will need to conduct one more annual stormwater sampling event at the current DLA Scrap Yard before the transfer is complete. The area that will become the new scrap yard is currently being dug out and graded and is not yet receiving any material.

Stormwater from the yard flows east into a trench that discharges to an unnamed tributary of Turkey Creek. We discovered a pipe coming underground from the west from which water was trickling into the trench (Photo 42). Ms. Ranard was unable to verify the source of this water. Mr. Moody took pH and conductivity readings of the water at this location and obtained results of 8.1 and 352 $\mu\text{S}/\text{cm}$ and 7.8 and 345 $\mu\text{S}/\text{cm}$, respectively, upstream.

Mine Fill A

The last place we saw at the facility on the second day of the inspection was Mine Fill A, where CAAA maintains, produces, and demilitarizes projectiles and bombs. The main building here is Building 155, wherein the only process water CAAA uses is to strip coatings from bombs in a separated room. This water is stored in tanks before going to the sanitary sewer and then the WWTP. NSWCrane samples the water in the tanks before discharging it into the sewer. Immediately south of Building 155, outside of Building 2950, was an empty tote that had contained water from a cleaning job (Photo 45). Ms. Ranard explained that the water was put into the tote because it was used to clean up equipment at the end of a process rather than for a simple weekend cleaning. She was uncertain where this cleaning water ended up.

East of Building 2950, we observed open bags containing a red, sandy substance near a culvert that drains to Stormwater Outfall 030 (Photos 46-49). Facility representatives at the time were unaware of what it was.

Finally, we went northwest to Buildings 160 and 3110 and spoke to an operator about what occurs there. In Building 160, as discussed in the SWPPP, NSWCrane conducts loading, assembling, and packing of shock charges and melt load operations. Treatment of explosive contaminated water generated elsewhere at the facility (including from the adjacent Building 160) occurs in Building 3110, and it is subject to the categorical standards at 40 C.F.R. Part 457 (explosives manufacturing). Wastewater from this building discharges through Outfall 301 to the sanitary sewer. Operations appeared to be running appropriately, and we did not notice any potential for wastewater to overflow to the environment.

Ordinance Test Area

We attempted to inspect this area during the second day of the inspection, but due to NSWCrane actively burning material at that time there (which was producing a significantly large cloud), we were unable to drive closer than the office building at that location.

Central Storage Facility (CSF)

The last place we visited during the inspection was the CSF, which, as mentioned previously, is where NSWCrane stores hazardous waste for periods that may exceed 90 days. Liquid hazardous waste is all contained in one building at the CSF, the floor of which is sloped inwards to prevent spilled liquids from exiting the building. Any spills end up in a sump under the floor and are contained within the building. If necessary, NSWCrane would manually pump the liquid in the sump back into storage drums. Solid waste is stored outdoors under canopies.

Areas of Concern

We identified the following areas of concern after reviewing the information obtained during and after the inspection:

1. There is potential for phosphorus remaining on or in the ground at the site of the July 2022 fire to contaminate stormwater. NSWC Crane has not performed testing of the soil at the site to confirm that red phosphorus is not present. Testing of the water downstream shortly after the incident showed a detectable concentration of total phosphorus. With regard to this test, the sample contained a high concentration of total phosphorus that required dilution to effectively measure the concentration, and the sample arrived at the laboratory for analysis at a higher temperature than allowed for total phosphorus in 40 C.F.R. Part 136.
2. Sand covering the location of the fire was present in stormwater runoff.
3. CAAA or NSWC Crane did not perform a complete hazard assessment for the storage of red phosphorus, as reflected in the standard operating procedures present at the time of the fire, until after the fire occurred.
4. CAAA had applied water to the fire without knowing the cause or realizing the environmental impact with regard to the phosphorus.
5. Testing of the water in the sump in the Building 69 area showed a very low pH (2.5), but pH monitoring that had been done at Lift Station 20 through which the sump water flows has not shown anything out of range.
6. Testing of stormwater runoff near Lift Station 20, which receives runoff from the Building 69 and Building 200 Areas, showed pH between 5-6.
7. At Outfall 015, there may be more metals present in the wastewater from the associated Demolition Range wash rack than just zinc, which is the only metal that NSWC Crane is required to monitor through its NPDES permit.
8. At the ABG, there is erosion along the trench leading to a stormwater outfall.
9. There were a few water streams for which facility representatives did not know their source, including: (1) in the Pyro Area, the water flowing into the sump outside the southwest corner of Building 2854; and (2) in the DLA Scrap Yard, the water flowing to the stormwater trench from an underground pipe.
10. In the Pyro Area, facility representatives were uncertain where the drain in Building 2854, which receives cooling water from pumps, goes and were uncertain where the cleaning water that was in the tote outside of Building 2950 in Mine Fill A went.
11. The 24-hour composite sampler for Outfall 101 showed a temperature reading greater than the 6°C maximum allowed for sampling under 40 C.F.R. Part 136.
12. The NPDES permit erroneously states that the Outfall 101 discharge is limited to process wastewater from Building 3064 instead of Building 3637.
13. At the loading dock outside Building 3637, there was water on the ground, which appeared to be stained, around an uncovered dumpster going to a storm drain.
14. In the Building 104 Area, there were open dumpsters, one of which had a white substance on the ground nearby. The SWPPP requires that dumpsters be covered.
15. In the Building 104 Area, outside of Building 2654, sat a 10,000-gallon fuel oil tank on a concrete pad with oil stains next to a storm drain.
16. The SWPPP erroneously describes the 10,000-gallon fuel tank outside of Building 2654 as being 30,000 gallons.
17. In the Building 200 Area loading dock, there was oil staining on the ground.
18. In the DLA Scrap Yard, dumpsters were overflowing with scrap metal.

19. In Mine Fill A, there were open bags of a red, sandy substance, whose contents and purpose were unknown to facility representatives, outside of Building 2950 near a culvert that drains to Stormwater Outfall 030.
20. Some processes at the facility that discharge to the WWTP may need internal permitted discharge limits similar to those for Outfalls 101, 501, 601, etc., including those in or around Buildings 69 (i.e., the sump), 200, 155 in Mine Fill A, and 126 and 123 in the Pyro Area.

Records Received

I received the following records during the inspection:

1. 15-day follow-up letter from NSWC Crane to IDEM regarding the red phosphorus fire (July 20, 2022).
2. *B69 Fire Investigation Narrative* (August 23, 2022).
3. *B69 Fire Findings and Recommendations* (August 23, 2022).
4. Red phosphorus fire incident information report (January 11, 2023).
5. Downstream surface water sampling results after the red phosphorus fire (July 8, 2022).

I received the following records via emailed links sent by Ms. Ranard on February 13, 2023:

6. DMRs (January 2020-December 2022).
7. Exceedance notification emails to IDEM and reports (January 2020-December 2022).
8. Renewal package for NPDES Permit No. IN0021539 (March 15, 2022).
9. NPDES Permit No. IN0021539 (October 1, 2022).
10. Rule 6 NOI letter (December 1, 2022).
11. Notice of Sufficiency from IDEM (March 2, 2020).
12. Stormwater annual reports for Permit No. INRM01211 (2020, 2021, and 2022).
13. Stormwater best management practices progress reports (August 27, 2021 and September 27, 2022) .
14. SWPPP (2022).
15. Toxic Organic Management Plan (December 16, 2022).

Attachments

1. Photo log.

**U.S Department of the Navy
Naval Support Activity Crane Installation
Crane, Indiana
Photo Log
EPA Inspection February 7-9, 2023
All photos taken by Jonathan Moody, Environmental Engineer, EPA**



1: DSCN1127

Description: July 5, 2022, red phosphorus fire location

Location: Building 69 Area holding lot

Camera Direction: West

Date/Time: 2/7/23, 12:30 p.m.



2: DSCN1128

Description: Sand cover at red phosphorus fire location with potential stormwater runoff

Location: Building 69 Area holding lot

Camera Direction: Southwest

Date/Time: 2/7/23, 12:30 p.m.



3: DSCN1129

Description: Sand cover at red phosphorus fire location with potential stormwater runoff

Location: Building 69 Area holding lot

Camera Direction: Southwest

Date/Time: 2/7/23, 12:31 p.m.



4: DSCN1130

Description: Sand cover at red phosphorus fire location overflowing into trench connected to a tributary of Boggs Creek

Location: Building 69 Area holding lot

Camera Direction: Southwest

Date/Time: 2/7/23, 12:36 p.m.



5: DSCN1131

Description: Closeup of sand particles spread on ground near sand cover

Location: Building 69 Area holding lot

Camera Direction: South

Date/Time: 2/7/23, 12:37 p.m.



6: DSCN1132

Description: Rotary kiln incinerator for phosphorus with ash on ground

Location: Building 69 Area

Camera Direction: Northwest

Date/Time: 2/7/23, 1:00 p.m.



7: DSCN1133

Description: Process tanks with containment runoff to sump

Location: Building 69 Area

Camera Direction: Northwest

Date/Time: 2/7/23, 1:01 p.m.



8: DSCN1134

Description: Sump with barrel on top for ash

Location: Building 69 Area

Camera Direction: North

Date/Time: 2/7/23, 1:03 p.m.



9: DSCN1135

Description: Looking through grate into sump

Location: Building 69 Area

Camera Direction: Down

Date/Time: 2/7/23, 1:03 p.m.



10: DSCN1136

Description: Sump pump in foreground, neutralization tank in midground, and phosphoric acid holding tanks in background

Location: Building 69 Area

Camera Direction: East

Date/Time: 2/7/23, 1:03 p.m.



11: DSCN1137

Description: Demolition Range vehicle wash rack

Location: Demolition Range

Camera Direction: Southwest

Date/Time: 2/7/23, 2:35 p.m.



12: DSCN1138

Description: Sedimentation pond for vehicle wash rack water at Demolition Range

Location: Demolition Range

Camera Direction: Southwest

Date/Time: 2/7/23, 2:36 p.m.



13: DSCN1139

Description: Discharge trench from sedimentation pond in Photo 12

Location: Demolition Range

Camera Direction: Northwest

Date/Time: 2/7/23, 2:37 p.m.



14: DSCN1140

Description: End of pipe shown in Photo 13 leading to Outfall 015

Location: Demolition Range

Camera Direction: West

Date/Time: 2/7/23, 2:39 p.m.



15: DSCN1141

Description: Sump for vehicle wash rack water at Ammunition Burning Grounds (ABG)

Location: ABG

Camera Direction: North

Date/Time: 2/7/23, 3:23 p.m.



16: DSCN1142
Description: Burn pits
Location: ABG
Camera Direction: Northwest
Date/Time: 2/7/23, 3:26 p.m.



17: DSCN1143
Description: Concrete blocks to combat erosion at stormwater trench from burn pits
Location: ABG
Camera Direction: Northeast
Date/Time: 2/7/23, 3:30 p.m.



18: DSCN1144

Description: Erosion at stormwater trench from burn pits, east of Photo 17

Location: ABG

Camera Direction: East

Date/Time: 2/7/23, 3:30 p.m.



19: DSCN1145

Description: Erosion at stormwater trench from burn pits, west of Photo 17

Location: ABG

Camera Direction: Northwest

Date/Time: 2/7/23, 3:34 p.m.



20: DSCN1146

Description: Final effluent tank (T-10) before Outfall 101

Location: Pyro Area, Building 3637

Camera Direction: Down

Date/Time: 2/8/23, 10:23 a.m.



21: DSCN1147

Description: 6.3°C temperature reading at ISCO composite sampler for Outfall 101

Location: Pyro Area, Building 3637

Camera Direction: East

Date/Time: 2/8/23, 10:35 a.m.



22: DSCN1148

Description: 6.1°C temperature reading at ISCO composite sampler for Outfall 101

Location: Pyro Area, Building 3637

Camera Direction: East

Date/Time: 2/8/23, 10:40 a.m.



23: DSCN1149

Description: Uncovered roll-off dumpster

Location: Pyro Area, loading dock outside of Building 3637

Camera Direction: West

Date/Time: 2/8/23, 10:44 a.m.



24: DSCN1150

Description: Stormwater flowing to drain next to dumpster in Photo 23

Location: Pyro Area, loading dock outside of Building 3637

Camera Direction: West

Date/Time: 2/8/23, 10:44 a.m.



25: DSCN1151

Description: Stormwater flowing to drain next to dumpster in Photo 23

Location: Pyro Area, loading dock outside of Building 3637

Camera Direction: Southwest

Date/Time: 2/8/23, 10:44 a.m.



26: DSCN1152

Description: Stormwater flowing to drain next to dumpster in Photo 23

Location: Pyro Area, loading dock outside of Building 3637

Camera Direction: East

Date/Time: 2/8/23, 10:46 a.m.



27: DSCN1153

Description: Spray Nine cleaner/degreaser

Location: Pyro Area, Building 123 machine shop

Camera Direction: N/A

Date/Time: 2/8/23, 10:54 a.m.



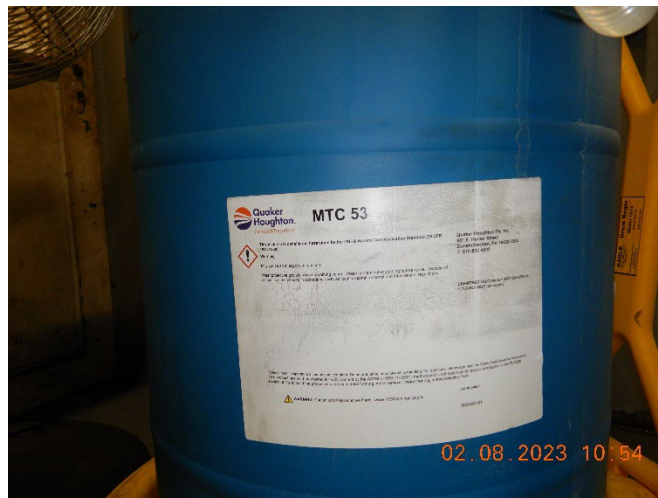
28: DSCN1154

Description: Acta-Solv cleaner/degreaser

Location: Pyro Area, Building 123 machine shop

Camera Direction: N/A

Date/Time: 2/8/23, 10:54 a.m.



29: DSCN1155

Description: MTC 53 cleaner

Location: Pyro Area, Building 123 machine shop

Camera Direction: N/A

Date/Time: 2/8/23, 10:54 a.m.



30: DSCN1156

Description: Deburring drum on left side with floor drain in middle

Location: Pyro Area, Building 123 machine shop

Camera Direction: Unknown

Date/Time: 2/8/23, 10:54 a.m.



31: DSCN1157

Description: United Coating Oil CO-100 safety data sheet (SDS)

Location: Building 2521

Camera Direction: N/A

Date/Time: 2/8/23, 12:38 p.m.



32: DSCN1158
 Description: Vat containing CO-100 coating oil
 Location: Building 2521
 Camera Direction: Down
 Date/Time: 2/8/23, 12:38 p.m.



33: DSCN1159
 Description: Barrel of PDN-50 cleaning detergent
 Location: Building 2521
 Camera Direction: N/A
 Date/Time: 2/8/23, 12:40 p.m.



34: DSCN1160

Description: UNI-KLEEN 58DA cleaner for black oxide coating SDS

Location: Building 2521

Camera Direction: N/A

Date/Time: 2/8/23, 12:41 p.m.



35: DSCN1161

Description: Uncovered dumpster

Location: Building 104 Area

Camera Direction: Southeast

Date/Time: 2/8/23, 1:37 p.m.



36: DSCN1162
Description: Uncovered dumpster
Location: Building 104 Area
Camera Direction: Southeast
Date/Time: 2/8/23, 1:37 p.m.



37: DSCN1163
Description: Stormwater Outfall 021
Location: Building 104 Area
Camera Direction: North
Date/Time: 10/12/22, 1:37 p.m.



38: DSCN1164

Description: Oil staining next to 10,000-gallon fuel oil tank with stormwater drain in background

Location: Building 104 Area

Camera Direction: West

Date/Time: 2/8/23, 1:50 p.m.



39: DSCN1165

Description: Dumpsters overflowing with scrap metal

Location: Defense Logistics Agency (DLA) Scrapyard

Camera Direction: North

Date/Time: 2/8/23, 2:57 p.m.



40: DSCN1166

Description: Dumpsters overflowing with scrap metal

Location: DLA Scrapyard

Camera Direction: Northeast

Date/Time: 2/8/23, 2:57 p.m.



41: DSCN1167

Description: Dumpsters overflowing with scrap metal

Location: DLA Scrapyard

Camera Direction: Southeast

Date/Time: 2/8/23, 2:58 p.m.



42: DSCN1168

Description: Discharge of water from pipe coming from under scrapyard to stormwater trench

Location: DLA Scrapyard

Camera Direction: North, down

Date/Time: 2/8/23, 3:13 p.m.



43: DSCN1169

Description: Stormwater trench/Stormwater Outfall 039

Location: DLA Scrapyard

Camera Direction: North

Date/Time: 2/8/23, 3:13 p.m.



44: DSCN1170

Description: Stormwater trench/Stormwater Outfall 039

Location: DLA Scrapyard

Camera Direction: North

Date/Time: 2/8/23, 3:14 p.m.



45: DSCN1171

Description: Empty tote that contained water used to clean Building 155 process equipment

Location: Mine Fill A, Building 155 Area

Camera Direction: Southwest

Date/Time: 2/8/23, 3:53 p.m.



46: DSCN1172

Description: Tote with red, sandy substance spilling out

Location: Mine Fill A, southeast of Building 155

Camera Direction: Northwest

Date/Time: 2/8/23, 3:57 p.m.



47: DSCN1173

Description: Tote with red, sandy substance spilling out

Location: Mine Fill A, southeast of Building 155

Camera Direction: Southeast

Date/Time: 2/8/23, 3:58 p.m.



48: DSCN1174

Description: Packaging label of substance in Photos 46 and 47

Location: Mine Fill A, southeast of Building 155

Camera Direction: N/A

Date/Time: 2/8/23, 3:58 p.m.



49: DSCN1175

Description: Packaging label of substance shown in Photos 46 and 47

Location: Mine Fill A, southeast of Building 155

Camera Direction: N/A

Date/Time: 2/8/23, 3:58 p.m.



50: DSCN1176

Description: Stormwater runoff path from red phosphorus fire location containing red sand

Location: Building 69 Area

Camera Direction: Northeast

Date/Time: 2/9/23, 9:01 a.m.



51: DSCN1177

Description: Stormwater runoff path from red phosphorus fire location containing red sand

Location: Building 69 Area

Camera Direction: Northeast

Date/Time: 2/9/23, 9:02 a.m.



52: DSCN1179

Description: Stormwater in trench near red phosphorus fire location

Location: Building 69 Area

Camera Direction: West

Date/Time: 2/9/23, 9:08 a.m.



53: DSCN1180

Description: Stormwater runoff from red phosphorus fire location

Location: Building 69 Area

Camera Direction: North

Date/Time: 2/9/23, 9:08 a.m.



54: DSCN1181

Description: Closeup of sand in stormwater runoff near red phosphorus fire location

Location: Building 69 Area

Camera Direction: Down

Date/Time: 2/9/23, 9:09 a.m.



55: DSCN1182

Description: Sheen on water in sump

Location: Building 69 Area

Camera Direction: Down

Date/Time: 2/9/23, 9:13 a.m.



56: DSCN1183
 Description: Pump near sump
 Location: Building 69 Area
 Camera Direction: Northwest
 Date/Time: 2/9/23, 9:14 a.m.



57: DSCN1184
 Description: Dust collector for APE 1236
 Location: Building 69 Area
 Camera Direction: Southwest
 Date/Time: 2/9/23, 9:20 a.m.



58: DSCN1185

Description: Second dust collector for APE 1236

Location: Building 69 Area

Camera Direction: South

Date/Time: 2/9/23, 9:22 a.m.



59: DSCN1186

Description: Second dust collector for APE 1236

Location: Building 69 Area

Camera Direction: North

Date/Time: 2/9/23, 9:22 a.m.



60: DSCN1187

Description: Stormwater runoff from Building 69 Area (right) and Building 200 Area (top)

Location: Near Lift Station 20

Camera Direction: East, down

Date/Time: 2/9/23, 9:51 a.m.



61: DSCN1188

Description: Combined stormwater runoff from Building 69 and Building 200 Areas

Location: Near Lift Station 20

Camera Direction: Northeast

Date/Time: 2/9/23, 9:52 a.m.



62: DSCN1189

Description: Stormwater runoff from Building 200 Area

Location: Near Lift Station 20

Camera Direction: East

Date/Time: 2/9/23, 9:52 a.m.



63: DSCN1190

Description: Combined stormwater runoff from Building 69 and Building 200 Areas

Location: Near Lift Station 20

Camera Direction: East

Date/Time: 2/9/23, 10:04 a.m.



64: DSCN1191

Description: 5.98 pH meter reading on display at Lift Station 20

Location: Lift Station 20

Camera Direction: Northeast

Date/Time: 2/9/23, 10:04 a.m.