UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

4WD-RCRA

DEC 21 2004

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. David Denner, Chief Executive Officer
Coronet Industries, Incorporated
4082 Coronet Road
Plant City, Florida 33566

SUBJ: Coronet Industries Incorporated
Plant City, Florida
EPA ID FLR 000 011 080
RCRA Inspection Report

Dear Mr. Denner:

Enclosed is the report for the November 12 - 14, 2003, RCRA inspection and the sampling visit on January 17, 2003, conducted by the United States Environmental Protection Agency (EPA) and the Florida Department of Environmental Protection (FDEP) at Coronet Industries Incorporated (CII). The agencies acknowledge that CII ceased productions operations in March 2004, and it has addressed several of the concerns stated in the report.

If you have any questions or comments, please contact Javier García of my staff, at (404) 562-8616, or me (404) 562-8569.

Sincerely yours,

Jeffrey T. Pallas, Chief
South Section
RCRA Enforcement and
Compliance Branch
Waste Management Division

Enclosure

cc: Tim Webster, Sidley Austin Brown & Wood
Steven Baer, DOJ
Bill Kutash, FDEP
Timothy Bahr, FDEP

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
COMPLIANCE EVALUATION INSPECTION REPORT

1) Author of Report

Javier E. García, Environmental Engineer
South Section, RCRA Enforcement and Compliance Branch
U.S. Environmental Protection Agency, Region 4 (EPA)
Phone: 404-562-8616

2) Facilities Information

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4082 Coronet Road
Plant City, Florida 33566

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3) Responsible Official

Mr. Masateru Nakagawa
CEO-President

4) Inspection Participants

Jim Baker - Coronet
John Broughton - Coronet
Chris Burgess - Coronet
Scott Davis - Coronet
Mark High - Coronet
Mike Timpe, Coronet
David Weinstein - Coronet (Outside counsel)
Robert DeMott - Coronet (Outside environmental consultant)
Doug Graham - Coronet (Outside environmental consultant)
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Van Housman - EPA
Kevin Simmons - EPA
Mike Neil - EPA
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Terry Stilman, EPA
Jeffrey Pallas - EPA
Javier García - EPA

5) Dates of Inspection

November 12 - 14, 2003
January 17, 2004 (Sampling visit)

6) Applicable Regulations

Section 3005 of RCRA, 42 U.S.C. § 6925, as implemented by Title 40 Code of Federal Regulations (C.F.R.) Parts 260 through 270, and 279, and Florida Statute Part IV Resource Recovery and Management, Chapter 403, Part IV, Sections 403.701 and 403.091, Florida Statutes, and the regulations promulgated and adopted by reference pursuant to and set forth at the Florida Administrative Code (F.A.C.) Annotated Chapter 62-710 and 62-730.

7**) Purpose of Inspection**

This was an EPA lead Case Development Investigation/Evaluation (CDIE) to determine Coronet's compliance with the applicable State and Federal RCRA rules and regulations. In addition, the site visit was followed-up with an information request letter sent to Coronet on November 26, 2003, and additional sampling by EPA on January 17, 2004.

8) Facility Description

Coronet Industries (Coronet) was a mineral processing facility that manufactured alpha tricalcium phosphate and potassium fluoroborate (KBF4). The alpha tricalcium phosphate was sold as a chicken feed supplement, while the KBF4 was sold as a metal alloy. The facility ceased operations as of March 31, 2004. The facility had about 100 employees and operated three shifts, seven days per week. Coronet is registered as a hazardous waste small quantity generator.

Raw Materials Handling

To produce alpha tricalcium phosphate, Coronet used phosphate rock, phosphoric acid, caustic soda, soda ash, and limestone in varying quantities depending on ore quality and the desired final product. The facility received beneficiated[1] wet phosphate rock ore (phosphate rock) from local mines, and from Morocco (Boucraa). The phosphate rock had typically been processed to pass a 100-mesh screen before receipt and has a soil-like appearance. They typically received phosphate rock in rail cars and stored it in hoppers or in open piles on the ground.

[1] The term "beneficiated ore" indicates that the ore has been processed already to separate the phosphate from the waste rock.

Commercial technical grade phosphoric acid (~54% P205) and caustic soda were received by tank trailer from the suppliers. The phosphoric acid was purchased from PCS Phosphate in White Springs Florida and water was added by Coronet to reduce the concentration to approximately 50% P2O5. Caustic soda was brought in by railcar and stored in a single 150,000 gallon rubber lined, steel aboveground storage tank. Phosphoric acid was managed in two 52,809 gallon blend (prep) tanks, six storage tanks and two feed tanks. The storage and feed tanks are smaller than the blend tanks. Soda ash and limestone were brought in bulk and stored in silos.

To produce potassium fluoroborate, Coronet used potash (potassium chloride), borax, and secondary hydrofluoric acid. Commercial technical grade potash was brought in by rail car, unloaded from the hopper and conveyed by a chain conveyor to a storage building. Commercial technical grade borax was brought in bulk. Soda ash (sodium carbonate), caustic soda, or limestone were pneumatically unloaded into storage silos. Emissions were controlled by baghouses, which recovered the product for re-use. The hydrofluoric acid was recovered at the facility's defluorination kiln scrubbers and stored in tanks.

Tricalcium Phosphate Process Description

The first step in the process was "feed preparation," which Coronet conducted in the "Feed Plant." (See picture 1) In the feed preparation, the phosphate rock was conveyed to hoppers, and gravity fed via chutes to a pugmill. In the pugmill, the phosphate rock was sprayed with 50% phosphoric acid and blended. The phosphoric acid used in this step had not been defluorinated. It was added as a source of phosphate, as the original concentration in the ore alone was not sufficient to achieve the desired concentration in the finished product.

The blended rock was gravity fed to a second pugmill via a chute, where it was sprayed with soda ash (sodium carbonate), caustic soda, or limestone and blended. The mix ratio of the raw materials depended on the phosphate available in the phosphate rock. From the second pugmill, the treated feed was fed to a rotary kiln where it was dried at a 600^{o} F temperature. Coronet referred to the dried prepared feed as green feed or prep product. Coronet accumulated the green product in an 800-ton silo in the "feed prep area" and in a 400-ton silo in the "Defluorination Plant." (See picture 2)

Coronet used baghouses to control emissions from the green feed and phosphate rock handling operations. The dust collected in the baghouses was returned to the process. Emissions from the feed dryer were controlled with a wet scrubber, which Coronet refers to as the "west scrubber." Emissions from the pugmills were controlled with a wet scrubber, which Coronet refers to as the "east scrubber." (See pictures 3 - 7) The solids collected in the scrubbers were accumulated in an uncovered pile on the ground and returned to the process. The blowdown from the scrubbers was conveyed to a sump and

pumped to an unlined earthen ditch that discharges to Pond 6. Coronet has referred to this ditch as the reaction ditch and the throwaway ditch. In this report, EPA is going to refer to the ditch as the "Throwaway Ditch."

The defluorination process followed the feed preparation step. From the storage silos, the green feed was screened and transferred to a surge bin that fed a conveyor connected to a 100-ton silo in the defluorination building. Coronet controlled the emissions from this conveyor with baghouses. The 100-ton silo was used to feed green product to the defluorination units. Coronet had five defluorination units, two were fluidized bed reactors and three were rotary kilns.

The rotary kilns heated the green feed to a temperature of about 2500^{o} F. This process caused the feed to react and form a molten material referred to as "clinker." The heat can cause the clinker to stick to the kiln walls. Coronet periodically shot the interior sides of the kiln with a shotgun to break up the adhesions. A large supply of shotgun shells were stored on-site. The shot pellets will melt and then vaporize in the kiln, possibly adding to the lead, arsenic and antimony emissions from the facility.

The combustion gases from the kilns passed through two settling chambers connected in series. The fines collected in these chambers were transferred to a tank and reprocessed. After the second chamber, the gasses passed through two hydrogen fluoride recovery towers. The scrubber water from the defluorination kilns was collected in sumps and recirculated within the towers until it reached about 5% hydrofluoric (HF) acid strength. When the scrubber water reached about 5% HF strength, Coronet transferred it to the KBF4 Plant to produce potassium fluoroborate.

After the HF recovery towers, the tail gasses pass through a packed bed scrubber. The packed bed consisted of plastic media filters (tellerets), which were periodically removed for cleaning or disposal. A mist eliminator pad (demister) followed the scrubber packed bed. Demister pads were replaced every 45 days and placed in a dumpster for disposal. Following the mist eliminator, the combustion gases were discharged to the atmosphere, via a stack.

In the fluidized bed reactors, the green feed was fed into the top of the unit, while air and natural gas were fed at the bottom to provide the heat. The clinker exited the unit from the bottom via a discharge pipe. Exhaust gases from the reactor flowed into a dry hot cyclone where fine particles were captured. The captured fine particles were placed back into the reactors. Gases exiting the cyclone flowed through the T-11 duct into a down duct dust collector. The down duct dust collector was a static unit that reduced the gas velocity allowing dusts to fall in the unit. Scale removed from the T-11 duct and the down duct dust collector were placed on the recycle pile. Gases leaving the down duct flowed into a spray tower that had three levels of sprays. Liquid discharged from the spray tower flow were discharged to the Throwaway Ditch, which discharges into Pond 6.

After the spray tower, the gases flowed into a tail gas scrubber (TGS). This scrubber had drop headers followed by tellerets, followed by the demister. The liquid from this unit flowed into a ditch that flows into the plant pond system. Gases exiting the TGS flowed into an Ionizing Wet Scrubber (IWS). The IWS collected particulates out of the gas flow via an electric field. Solids washed off the unit's electrical plates were discharged to the Throwaway Ditch, which discharges into Pond 6.

The defluorinated clinker was cooled and then processed through mills, sizing screens and bagged. Emissions in these areas were controlled by baghouses, with the collected solids returned to the process.

KBF4 Process Description

When the scrubber water from the defluorination kiln reached about 5% hydrofluoric acid (HF) strength, the scrubber water was pumped to the KBF4 Plant. The HF was a raw material in the production of KBF4. The HF was stored in tanks 9 and 10. From these tanks, the HF was transferred to one mixing tank (tanks 3 through 8). In the mixing tanks, the acid was reacted with potash (potassium chloride). To facilitate the reaction Coronet recirculated the acid and potassium chloride for one hour. Heat was given off in this reaction, which produced hydrochloric acid in the liquid. After approximately one hour, the tank was kept undisturbed for twenty-four hours allowing the solids to settle and the liquid was decanted. The remaining solids (the tank heel) were pumped to tank 9 for reuse in the process. The liquid was pumped to either reactor 1 or 2. At this point, borax was added to the liquid in the reactor and agitated with steam for one hour. After twenty-four hours in the reactor, the resultant liquid "mother liquor" was decanted to a holding tank that in turn flowed into a centrifuge. The "mother liquid" from the centrifuge was discharged to a pipe that led to the Throwaway Ditch. Emissions from HF tanks and the batch reactors were controlled by a packed bed scrubber.

The solids (KBF4 crystals) from the centrifuge were discharged onto a belt conveyor connected to a "wet product bin" that discharged into a drying room. In the drying room, KBF4 crystals were dried on gas fired vibrating driers. After drying, silica was added to the KBF4 and transferred via a conveyor into a dry product tank. The KBF4 product was sold to aluminum producers. Emissions from the dryer were controlled by a baghouse.

9) Findings

Upon arrival at the facility, Mr. Scott Davis (Human Resource Manager) greeted the inspection team. Later, Mr. Chris Burgess (VP Finance Administration) joined us. After Mr. Burgess's introduction, the members of the inspection team presented their respective credentials and served certified copies of the State and Federal search warrants.

Then the inspection team conducted a walk through of the facility. During the second and third day, the inspection team split into three groups; one focused on the process description, the second conducted the physical inspection and identified sample locations, and the third conducted the sampling activities.

During the initial walk through, Coronet staff briefly identified all process equipment and the facility layout. A pH meter was used to test some waste streams, including scrubber sumps, waste water conveyance ditches and various puddles. All of the samples had an acidic pH above 2, with several between 2 and 3. No samples were collected during this walk through.

It is EPA's understanding that the facility was under normal operation conditions at the time of the inspection. The following are the observations made during the inspection:

Tricalcium Phosphate Plant

According to facility personnel, Coronet accumulated all solids collected in the baghouses and scrubbers in the feed preparation area to a pile referred to as the reclaim pile. From the reclaim pile, the material was returned to the process. The blowdown from the east and west scrubbers were conveyed to a sump, that was equipped with a vertical pump. From the sump, the wastewater was pumped to the Throwaway Ditch that discharges to Pond 6. Coronet did not make a hazardous waste determination for these wastewater and waste streams.

EPA collected samples of the blowdown from the West Scrubber (WS1) and from the East Scrubber water (ES1). WS1 had a concentration of cadmium using the toxicity characteristic leaching procedure (TCLP) of 2.2 milligrams per liter (mg/L). ES1 had a concentration of cadmium using the TCLP of 2.4 mg/L. Therefore, both scrubbers' blowdown exhibited the characteristic of toxicity for cadmium by exceeding the toxicity characteristic (TC) limit of 1 mg/L, and are hazardous wastes (D006).

Coronet had not used the two fluidized bed reactors for over a year. Kiln 2 was last used in July 2003. Since then, only Kilns 6 and 7 were being used for defluorination. Each kiln had separate air pollution control systems. However, the systems were identical, except that Kilns 6 and 7 vented to a common stack. The solids accumulated in the primary dust chamber and the secondary dust chamber were accumulated in a tank and recycled. The scrubber blowdown was managed in three sumps. The sumps are

designated as sumps A, B and C. Sump C was always in operation, while sumps A and B were alternated to collect the HF in the scrubber water. Approximately twice a week, Coronet hosed down the sumps to remove solids accumulated in them and discharged the wash water to a central sump. This central sump also collected waste from kilns 6's and 7's tail gas scrubbers. From the central sump, all wastewater was pumped to the Throwaway Ditch that discharges to Pond 6. Coronet did not make a hazardous waste determination on these sumps waste streams.

While at the facility, EPA collected a sample (K7) of the wash water discharged from the sumps containing scrubber blowdown from Kiln 7. The concentration of cadmium using the TCLP was 2.6 mg/L. Therefore, the wash water from Kiln 7's sumps exhibited the characteristic of toxicity for cadmium by exceeding the TC limit of 1 mg/L, and was a D006 hazardous waste.

The last two stages of the tail gas scrubber consisted of a basket with a plastic media filter (tellerets), followed by demister pads. Approximately twice a year, Coronet removed the tellerets for cleaning in a horizontal tumbler. After cleaning, Coronet reclaimed the useful tellerets and disposed of the remainder. During the inspection, we observed several piles of the scale removed from the tellerets and the spent tellerets scattered around the facility on the ground. (See pictures 13 - 15) According to facility's representatives, the last time they cleaned tellerets was about one month before the inspection. Coronet had not made a hazardous waste determination on the scale removed from the tellerets packing.

During the inspection, EPA collected two samples of the scale removed from the tellerets (TR1 and TR2). None of the samples exceeded any of the TC limits for being a hazardous waste but they did show the presence of metals. However, EPA is concerned that the scale sampled by EPA had been exposed to rain for at least one month. The rain water could have changed the characteristics of the scale by changing pH or by washing out some of the metals from the scale.

Coronet replaced the spent demister pads about once every forty-five days. The pads were disposed of in the facility's solid waste dumpster. Coronet has not made an adequate hazardous waste determination on the spent demister pads.

In a letter dated January 6, 1998, the Solid Waste Management Division of the Hillsborough County rejected an application submitted by Coronet for the disposal of "Pollution Control Waste" including demister pads, dust bags and broken tellerets, as solid wastes. The county rejected the application because the waste stream exhibited the characteristic of toxicity for cadmium. Therefore, Coronet failed to make a proper hazardous waste determination on these waste streams.

Coronet used different types of refractory brick including: Kruzite 70, ARCO 80, Clipper DP-45 and Greenlite. They relined the kilns and furnaces on an as needed basis. Coronet used the spent refractory brick in the buildup of the berms around the facility's process

water and storm water ponds. The use of spent bricks in this matter is use constituting disposal, making the spent bricks solid wastes. Coronet had not made a hazardous waste determination on the spent bricks.

As noted above, the rotary kilns heated the feedstock to a temperature of about 2500° F. This process caused the chemicals to react to form a molten clinker product. The processing operations can cause clinker to stick to the kiln walls. Coronet periodically shot the interior sides of the kiln with a shotgun to break up the adhesions. According to Coronet's representatives, thousands of shotgun shells were used for this purpose during a year. A large number of shells were observed during the inspection.

Plant inventory records show that Coronet used 38,500 shells in 2002 and more than 14,500 in 2003. The shot pellets melted and then vaporized in the kiln, potentially adding to the lead, arsenic and antimony emissions from the facility. It does not appear that heavy metal or NORM emissions were evaluated during the Title V air permitting process. Furthermore, Coronet did not evaluate whether the vaporization of the pellets affects the heavy metal content in the emission control sludges.

In April 1999, Coronet discovered a hydrofluoric acid (HF) release during maintenance activities on the spray tower recovery system next to Kiln 7. After removing the tower and the associated concrete foundation, Coronet pumped the HF contaminated groundwater to the "Throwaway Ditch," which is an earthen unlined ditch. During the November 2003 inspection, EPA collected a groundwater sample (MW1) from a monitoring well in the HF acid spill area. According to the laboratory results, the groundwater had a concentration of cadmium using the TCLP of 5.9 mg/L. Therefore, the groundwater beneath the HF spill area exhibited the characteristic of toxicity for cadmium by exceeding the TC limit of 1 mg/L, and is a hazardous waste D006. Furthermore, the cadmium level in the groundwater shows that Coronet has failed to cleanup the spill.

Violations

Coronet was violating F.A.C. 62-730.160 (which references 40 C.F.R. § 262.11) by failing to make an adequate hazardous waste determination on all scrubbers blowdown, sumps wash waters, tellerets scale, spent tellerets, spent demister pads, spent refractory brick, and the groundwater beneath the HF spill area.

40 C.F.R. §§ 264.31 and 265.31, as adopted by reference in F.A.C. Chapter 62-730, require owners and operators of hazardous waste management facilities to maintain and operate their facilities to minimize the possibility of a fire, explosion, or any unplanned sudden or nonsudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment. Coronet is violating 40 C.F.R. §§ 264.31 and 265.31, as adopted by reference in F.A.C. Chapter 62-730, by its management of the facility, including failing to clean the HF released to the environment.

KBF4 Process Description

Approximately once a day, Coronet washed tanks 3 through 8 to remove the solids that resulted from the chemical reactions in the tanks. This wash water slurry was discharged via pipes and hoses, to a concrete trench that discharged to the unlined earthen ditch, referred to as the Throwaway Ditch. The KBF4 discharge point to the Throwaway Ditch is upstream from the discharge points from the Tricalcium Phosphate Plant. As mentioned before, the Throwaway Ditch discharges to Pond 6.

During the inspection, EPA sampled the wash water from tanks 6 and 8, samples T6A2 and TW1, respectively. Both samples exceeded the TC limit for cadmium. In addition, T6A2 exceeded the TC limit for chromium. Therefore, the wash waters are characteristic, D006 and sometimes D007, hazardous wastes. Coronet had not made an adequate hazardous waste determination on the wash water.

Coronet used tanks 1 and 2 to react the acidified potash with borax. After twenty-four hours in the reactor (or in some instances less), the liquid ("mother liquor") was discharged via a flexible hose to a pipe that discharged to a concrete trench. The trench discharged to the Throwaway Ditch. During the inspection, EPA sampled the spent mother liquor from both reactors, as it drained under normal operations from the reactors (R1 and R2) and at the point of discharge to the Throwaway Ditch (MLD1). The samples R1, R2 and MLD1 exceeded the TCLP limit for cadmium. Therefore, the spent mother liquor is a D006 hazardous waste, by exhibiting the characteristic of toxicity for cadmium. Coronet had not made an adequate hazardous waste determination on the spent mother liquor.

After decanting, the product crystals of potassium fluoroborate formed in the reactors were transferred to a holding tank that fed a centrifuge. Water was introduced into the centrifuge to rinse contaminants from the crystals. The centrifuge used approximately thirty gallons of water per rinse cycle. The resulting rinse liquid from the centrifuge was discharged to a pipe, followed by a concrete trench, which discharges to the "Throwaway Ditch." During the inspection, EPA collected a sample (CW2) of the rinse liquids from the centrifuge (referred to as centrifuge rinsate). The sample was collected from a sump under the centrifuge, which was used to accumulate the centrifuge's rinsate under normal operations. The sample CW2 exceeded the TCLP limit for arsenic, cadmium and chromium. Therefore, the centrifuge rinsate was a D004/D006/D007 hazardous waste by exhibiting the characteristic of toxicity for arsenic, cadmium and chromium. Coronet had not made an adequate hazardous waste determination on the centrifuge rinsate.

The product solids (KBF4 crystals) from the centrifuge were discharged onto a belt conveyor connected to a "wet product bin" that discharges into a drying room. In the drying room, KBF4 crystals are dried on gas fired vibrating driers. After drying, silica was added to the KBF4 and transferred via a conveyor into a dry product tank. The final KBF4 product was sold to aluminum producers. Emissions from the dryer were controlled by a baghouse.

Violation

Coronet was violating F.A.C. 62-730.160 (which references 40 C.F.R. § 262.11) by failing to make an adequate hazardous waste determination on all tank and reactor wash waters, the spent mother liquor and the centrifuge rinsate.

Raw Materials

At the time of the inspection, EPA and FDEP requested information about the storage of feedstock onsite. Coronet officials noted then that the staff person (Mr. Will Ragins) most knowledgeable was on vacation and would be made available later. On November 20, 2003, EPA held a telephone conference with FDEP, Coronet's attorney (Mr. Weinstein) and Mr. Ragins. The following description of the Coronet tank farm is based on this phone call.

Caustic soda was received in a liquid form via trucks and was stored in the phosphoric acid tank farm in a 150,000-gallon rubber lined steel tank with a fixed roof. Tank integrity was checked quarterly using an ultrasound method. Flow from the tank was via a ceramic lined steel 2-inch pipe running about 200 feet to the plant proper. This pipe was back flushed about 3 times a week and the flush was disposed of into an unlined earthen ditch. The discharge from the ditch ultimately reached Pond 1 (Pond 1 comprises ponds 1N/1S). Coronet did not test this waste stream to determine whether it was a characteristic hazardous waste.

Phosphoric acid was received at the plant via trucks. As the phosphoric acid was pumped into the tanks, it was diluted with water. Coronet has ten phosphoric acid storage tanks. Two 50,000-gallon tanks are used for blending and dilution with water and referred to as the "prep tanks." The remaining eight tanks are used for storage of the diluted acid. All tanks are rubber lined steel tanks. The tanks are connected to each other and to the plant via a 3-inch ceramic lined steel pipe. Prep tanks have integrity checks quarterly using ultrasound methods. The pipe line was back flushed 3 times a week and the flush was disposed into an unlined earthen ditch that discharges to Pond 1. Coronet did not test this waste stream to determine whether it was a characteristic hazardous waste.

The HF acid, which was reclaimed in the defluorination kilns, was stored in four rubber lined steel tanks each having a storage capacity of 44,948 gallons. These tanks have fixed roofs. Tank integrity was checked quarterly. On average, Coronet stored approximately 90,000 gallons of HF acid onsite at anytime. All tanks are interconnected via a pipe manifold system with a 3-inch ceramic lined steel pipe. The pipe runs for about 350 feet from the tank farm to the KBF4 area. Occasionally, this line was back flushed and the flush was discharged to a ditch and ultimately reached Pond 6. Coronet did not test this waste stream to determine whether it was a characteristic hazardous waste.

Materials handling operations could have caused raw and partially finished raw materials to be spilled. These were considered "reclaimed materials" and were stored in piles pending reprocessing. There is no indication that these materials were accumulated speculatively, therefore the exclusion in 40 C.F.R. § 261.2(e)(1)(i) applies. The piles can include rock sprayed with phosphoric acid and caustic. The piles were not completely protected from rain water, and EPA is concerned of the potential for the leachate from the piles to be highly contaminated. The soil around the piles needs to be investigated to determine whether a release of hazardous constituents has occurred.

Violation

Coronet was violating F.A.C. 62-730.160 (which references 40 C.F.R. § 262.11) by failing to make an adequate hazardous waste determination on the back wash residues from the phosphoric acid, caustic soda and hydrofluoric acid pipe lines.

Pond System

Coronet's pond system consists of unlined earthen ditches and unlined ponds. Overall flow through the pond system was to increase the pH, lower the temperature and sedimentation. Most of the process wastewater was discharged to the Throwaway Ditch, which discharges to Pond 6. Before the discharge to Pond 6, Coronet treated the process wastewater in the ditch with limestone slurry. This is treatment of hazardous wastes. (See pictures). Along the north, east and south sides of Pond 6, Coronet has an earthen unlined ditch that they refer to as the "Recirculation Ditch." The Recirculation Ditch collects seepage from Pond 6, which is returned to the pond.

From Pond 6, the partially treated wastewater flows to an unlined earthen ditch that discharges to Pond 1. Pond 1 is divided in two interconnected sections which Coronet refers to as Pond 1N and Pond 1S. Under normal flow conditions, the effluent from Pond 1 went to the main plant intake source. If the liquid level in Pond 1 gets too high, the liquid can be pumped to Pond 2 and Pond 2a. Pond 2a is quite shallow and is connected via a weir to Pond 4. Pond 2a is connected to Pond 3 and Pond 2a is currently connected via a weir and pipe to Pond 5. Ponds 3 and 8 can overflow into Pond 5. The ponds do not have a double liner, a leachate collection system nor a RCRA ground water monitoring system.

The plant outfall 001 is at Pond 4/4a. The flow from Pond 4 to Pond 4a is via a liming station. Along the east side of Pond 4/4a is a ditch to collect pond seepage. This ditch flow is pumped back to Pond 4 or to Pond 8. Coronet installed a liming station on the

NW side of Pond 5, however, this unit has never operated. Outfall 005 is next to Pond 5. Runoff from an adjacent public golf course flows via a ditch onto the east side of Pond 5. Coronet has an emergency permit that allows them to discharge from outfalls 001 and 005.

Coronet's ponds and ditches are surface impoundments as that term is defined in 40 C.F.R. § 260.10. All ponds and ditches are unlined earthen units. Based on the results obtained by EPA, at a minimum Coronet has illegally disposed of D004, D006 and D007 in the Throwaway Ditch, by discharging the following hazardous wastes:

- HF contaminated groundwater
- KBF4 Plant centrifuge rinsate, spent mother liquor (reactors 1 and 2) and washouts from tanks 6 and 8 (HF - potash reaction tanks)
- Kiln 7 scrubber blowdown
- West scrubber blowdown

During the November 2003 inspection, EPA collected a sample of the influent to Pond 6 (P61) and of the effluent from Pond 6 (P63). Both samples exceeded the TCLP limit for cadmium. Therefore, the wastewater in Pond 6 and the Recirculation Ditch is a D006 hazardous waste by exhibiting the characteristic of toxicity for cadmium.

In July 2003, Coronet installed a series of eight ground water monitoring wells along the southern property line, south of the industrial plant and Pond 6. In August 2003, Coronet sampled the wells and detected gross alpha, sodium and boron above ground water quality standards in four wells. These constituents have also been found in private drinking water wells located down gradient and outside the facility. In addition, a characterization of the wastewater in ponds 6 and 1 indicated the presence of gross alpha, sodium and boron. Boron is not normally present in the groundwater in this area. Coronet discharged high levels of boron along with hazardous wastes into its unlined surface impoundments, which leads EPA to believe that the source of boron and other contaminants in the wells is from Coronet's unlined surface impoundments. Based on the review of historical groundwater data for the monitoring wells downgradient of Pond 6, Coronet hazardous waste has reached the groundwater. Furthermore, the ground water data indicate that the release extends beyond the boundaries of Coronet. Releases of hazardous waste were also evident during subsequent visual inspections of the berms, which showed evidence of leakage of the contents of the surface impoundments. In several locations along the berms of Ponds 6, 5, 7, and 4, liquids could be seen flowing from the sides of the berms into the outer perimeter ditches and other low lying areas. Erosion in these locations was prevalent. A seepage ditch is present along the downstream toe of the east and south sides of Pond 6, which collects seepage water from

Pond 6. Coronet's contractor (BCI Engineers and Scientist, Inc.) has documented seepage from Pond 1 (southwest berm), Pond 2 (southwest berm), Pond 3 (south end and east berm), Pond 4 (east and south west berms), Pond 5 (east berm), and Pond 6 (northeast and east berms). Coronet also collects liquids from the perimeter ditches and returns it to the ponds.

On January 17, 2004, EPA collected a sample of the liquid in the Return Pond (CI-02-SW) and the liquid in the Fire Control Ditch (CI-04-SW). The Return Pond is part of Pond 1 and the Fire Control Ditch is part of Pond 6. Both samples exceeded the TCLP limit for cadmium. Therefore, the liquid in the Return Pond and the Fire Control Ditch and Pond 1 are D006 hazardous wastes by exhibiting the characteristic of toxicity for cadmium.

Violations:

40 C.F.R. §§ 264.31 and 265.31, as adopted by reference in F.A.C. Chapter 62-730, require owners and operators of hazardous waste management facilities to maintain and operate their facilities to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment. Coronet is violating 40 C.F.R. §§ 264.31 and 265.31, as adopted by reference in F.A.C. Chapter 62-730, by releasing hazardous waste or hazardous waste constituents to the ditches, surface impoundments and the ground water down gradient from Pond 6.

RCRA Sections 3005(a) and (e), 40 C.F.R. §§ 270.1(c) and § 270.71(a), as adopted by reference in F.A.C. Chapter 62-730, prohibit a facility from treating, storing or disposing of hazardous waste without first obtaining a permit or interim status. Coronet was treating hazardous wastes by adding lime in the Throwaway Ditch. Coronet is storing hazardous wastes in the Recirculation Ditch, Throwaway Ditch, Pond 6, Pond 1 and the ditch connecting these ponds, by accumulating hazardous wastes in these units. Coronet is land disposing of hazardous wastes, by storing hazardous waste in unlined earthen ponds and ditches (surface impoundments) and releasing hazardous waste to the ground water. Coronet does not have a permit or interim status for treatment, storage or land disposal of hazardous waste. Therefore, Coronet is violating RCRA §§ 3005(a) and (e), 40 C.F.R. §§ 270.1(c) and § 270.71(a), as adopted by reference in F.A.C. Chapter 62-730.

RCRA Section 3004(o) and 40 C.F.R. §§ 264.220, 265.220, as adopted by reference in F.A.C. Chapter 62-730, prohibit a facility from treating, storing or disposing hazardous wastes in surface impoundments, unless the units meet specified design

requirements, including double liners, and groundwater monitoring. Coronet's Recirculation Ditch, Throwaway Ditch, Pond 6, Pond 1, Return Pond and the Fire Control Ditch do not have the required liners or groundwater monitoring program. Therefore, Coronet is violating RCRA § 3004(o) and Subpart K of 40 C.F.R. Parts 264 and 265, as adopted by reference in F.A.C. Chapter 62-730.

40 C.F.R. §§ 264.1, 264.90, and 265.1 and 265.90, as adopted by reference in F.A.C. Chapter 62-730, require Coronet to implement a groundwater monitoring program to detect, characterize, and respond to releases from all solid waste management units and specified regulated units, including surface impoundments, into the uppermost aquifer underlying the impoundments and the groundwater beneath the HF spill area. Coronet is in violation of Subpart F of 40 C.F.R. Parts 264 and 265, including 40 C.F.R. §§ 264.1, 264.90, and 265.1 and 265.90, as adopted by reference in F.A.C. Chapter 62-730, by failing to implement the required groundwater monitoring program.

40 C.F.R. §§ 264.1, 264.112, 265.1 and 265.112, as adopted by reference in F.A.C. Chapter 62-730, require Coronet to have a written closure plan or plans meeting the requirements of 40 C.F.R. §§ 264.112(b) and 265.112(b) for the Recirculation Ditch, Throwaway Ditch, Pond 6, Pond 1, Return Pond, the Fire Control Ditch and the groundwater beneath the HF spill area. Coronet is in violation of 40 C.F.R. §§ 264.1, 264.112, 265.1 and 265.112, as adopted by reference in F.A.C. Chapter 62-730, by failing to have the required closure plan.

40 C.F.R. §§ 264.142 and 265.142, as adopted by reference in F.A.C. Chapter 62-730, require Coronet to have a detailed written estimate, in current dollars, of the cost of closing the facility at the point in the facility's active life when the closure would be most expensive. Coronet is in violation of 40 C.F.R. §§ 264.142 and 265.142, as adopted by reference in F.A.C. Chapter 62-730, by failing to have a detailed written estimate, in current dollars, of the cost of closing Recirculation Ditch, Throwaway Ditch, Pond 6, Pond 1, Return Pond, the Fire Control Ditch and the groundwater beneath the HF spill area.

40 C.F.R. §§ 264.143 and 265.143, as adopted by reference in F.A.C. Chapter 62-730, require Coronet to establish financial assurance for closure of the Recirculation Ditch, Throwaway Ditch, Pond 6, Pond 1, Return Pond, the Fire Control Ditch and the groundwater beneath the HF spill area, in accordance with the written estimate discussed above. Coronet is in violation of 40 C.F.R. §§ 264.143 and 265.143, as adopted by reference in F.A.C. Chapter 62-730, by failing to provide the required financial assurance.

40 C.F.R. §§ 264.1, 264.118, 265.1 and 265.118, as adopted by reference in F.A.C. Chapter 62-730, require Coronet to have a written post-closure plan or plans meeting the requirements of 40 C.F.R. §§ 264.118(b) and 265.118(b) for the Recirculation Ditch, Throwaway Ditch, Pond 6, Pond 1, Return Pond, the Fire Control Ditch and the groundwater beneath the HF spill area. Coronet is in violation of 40 C.F.R. §§ 264.1, 264.118, 265.1 and 265.118, as adopted by reference in F.A.C. Chapter 62-730, by failing to have the required post-closure plan.

40 C.F.R. §§ 264.144 and 265.144, as adopted by reference in F.A.C. Chapter 62-730, require Coronet to have a detailed written estimate, in current dollars, of the cost of the annual cost of post closure monitoring and maintenance of the facility in accordance to all applicable RCRA regulations. Coronet is in violation of 40 C.F.R. §§ 264.144 and 265.144, as adopted by reference in F.A.C. Chapter 62-730, by failing to have a detailed written estimate, in current dollars, of post closure monitoring and maintenance of the Recirculation Ditch, Throwaway Ditch, Pond 6, Pond 1, Return Pond, the Fire Control Ditch and the groundwater beneath the HF spill area.

40 C.F.R. §§ 264.145 and 265.145, as adopted by reference in F.A.C. Chapter 62-730, require Coronet to establish financial assurance for post closure monitoring and maintenance of the Recirculation Ditch, Throwaway Ditch, Pond 6, Pond 1, Return Pond, the Fire Control Ditch and the groundwater beneath the HF spill area, in accordance with the written estimate discussed above. Coronet is in violation of 40 C.F.R. §§ 264.145 and 265.145, as adopted by reference in F.A.C. Chapter 62-730, by failing to provide the required financial assurance.

As the owner/operator of a facility that treats, stores or disposes hazardous waste, 40 C.F.R. §§ 264.1, 264.147, 265.1, and, 265.147, as adopted by reference in F.A.C. Chapter 62-730, Coronet is required to maintain liability coverage for sudden and nonsudden accidental occurrences. At a minimum, Coronet is required to maintain liability coverage in the amount of a $1 million per occurrence, with an aggregate of $2 million for sudden accidental occurrences. As for nonsudden accidental occurrences, Coronet is required to maintain liability coverage in the amount of at least $3 million per occurrence, with an aggregate of at least $6 million. Coronet is in violation of 40 C.F.R. §§ 264.1, 264.147, 265.1, and 265.147, as adopted by reference in F.A.C. Chapter 62-730, by failing to maintain for the hazardous wastes surface impoundments and the groundwater beneath the HF spill area.

RCRA Section 3004(k) and 40 C.F.R. § 268.2(c), as adopted by reference in F.A.C. Chapter 62-730, generally define "land disposal" as the placement of hazardous waste in or on the land, including, but not limited to, placement in a surface impoundment. Therefore, Coronet has disposed of hazardous wastes in the Recirculation Ditch,

Throwaway Ditch, Pond 6, Pond 1, Return Pond, the Fire Control Ditch and the groundwater beneath the HF spill area. By land disposing hazardous waste that exceeds the treatment standards in 40 C.F.R. § 268.40, as adopted by reference in F.A.C. Chapter 62-730, Coronet is in violation of RCRA § 3004(m) and 40 C.F.R. § 268.40, as adopted by reference in F.A.C. Chapter 62-730.

Records Review:

Coronet did not have a training program, contingency plan and inspection program that addresses all of its hazardous wastes handling activities at the Defluorination Plant, the KBF4 Plant, Pond 1, Pond 6 and the groundwater beneath the HF spill area.

As explained previously in this inspection report, Coronet uses Ponds 2, 2a, 3, 4, 4a, 5 and 8 when the liquid level in Pond 1 gets too high. Coronet has no documentation to demonstrate that the wastewater discharged to these ponds meets the land disposal restrictions (LDR) treatment standards.

Violations:

40 C.F.R. §§ 264.16 and 265.16, as adopted by reference in F.A.C. Chapter 62-730, require owners and operators of hazardous waste management facilities to implement a RCRA training program designed to ensure that facility personnel are able to respond to emergencies. In addition, the facility is required to provide annual review of the original training and to keep documentation on the training provided to each employee. Coronet violated 40 C.F.R. §§ 264.16 and 265.16, as adopted by reference in F.A.C. Chapter 62-730, by failing to implement the required training program and to keep the required documentation.

40 C.F.R. §§ 264.51 and 265.51, as adopted by reference in F.A.C. Chapter 62-730, require owners and operators of hazardous waste management facilities to have a contingency plan designed to minimize hazards to human health or the environment. Coronet violated 40 C.F.R. §§ 264.51 and 265.51, as adopted by reference in F.A.C. Chapter 62-730, by failing to have an adequate contingency plan that addressed all hazardous management units at the facility.

40 C.F.R. §§ 264.15 and 265.15, as adopted by reference in F.A.C. Chapter 62-730, require owners and operators of hazardous waste management facilities to develop and implement an inspection program to identify and correct problems before they harm human health or the environment. Coronet violated 40 C.F.R. §§ 264.15 and 265.15, as adopted by reference in F.A.C. Chapter 62-730, by failing to have an adequate

inspection program for the identification and correction of problems at its hazardous management units.

40 C.F.R. §§ 268.7(a) and (b), as adopted by reference in F.A.C. Chapter 62-730, require hazardous waste generators and treatment facilities, respectively, to test their hazardous waste to determine if it meets the applicable treatment standards in 40 C.F.R. § 268.40, as adopted by reference in F.A.C. Chapter 62-730. Coronet is in violation of 40 C.F.R. §§ 268.7(a) and (b), by failing to determine if the wastewater discharged to the ponds and ditch system, meet the required treatment standards.

10) <u>Author of Report</u>:

_____ _____

Javier E. García Date
Environmental Engineer
South Enforcement and Compliance Section

11) <u>Concurrence and Approval</u>:

_____ _____

Jeffrey T. Pallas, Chief Date
South Enforcement and Compliance Section
Enforcement and Compliance Branch

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10) <u>Author of Report</u>:

_____ _____

Javier E. García Date
Environmental Engineer
South Enforcement and Compliance Section

11) <u>Concurrence and Approval</u>:

_____ _____

Jeffrey T. Pallas, Chief Date
South Enforcement and Compliance Section
Enforcement and Compliance Branch

Garcia C:\My Documents\Coronet\EPA-CEI-Report

GARCIA GHOSH NEY PALLAS

Coronet Industries, Inc.
Plant City, Florida 33566
EPA ID FLR000011080

PICTURES
EPA CEI Report

Coronet Industries, Inc.
Plant City, Florida 33566
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EPA Sampling Results
November 2003

Coronet Industries, Inc.
Plant City, Florida 33566
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EPA Sampling Results
January 2004

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10) <u>Author of Report</u>:

Javier E. García
Environmental Engineer
South Enforcement and Compliance Section

12/21/04
Date

11) <u>Concurrence and Approval</u>:

Jeffrey T. Pallas, Chief
South Enforcement and Compliance Section
Enforcement and Compliance Branch

12/21/04
Date