



**Environmental
Protection Agency**

Ted Strickland, Governor
Lee Fisher, Lt. Governor
Chris Kaneski, Director

April 19, 2010

RE: REPUBLIC ENGINEERED PRODUCTS, INC.
CANTON FACILITY
NPDES COMPLIANCE EVALUATION INSPECTION
OEPA PERMIT NO. 3ID00000*QD
APP NO: OH0006912

Mr. Patrick L. Monnot
Corp. Manager, Environment Health & Safety
Republic Engineered Products
2633 Eighth Street NE
Canton, Ohio 44704-2311

Dear Mr. Monnot:

On April 6 and 7, 2010, this writer conducted an inspection of your facility for the purpose of gathering information necessary to renew the above referenced NPDES permit. You represented Republic Engineered Products during the inspection.

Below you will find a summary of the inspection.

General

The Republic Engineered Products (REP) facility is located east side of the City of Canton, Stark County. Manufacturing consists of the production of carbon and alloy special bar quality steel. These steel products are used in the production of parts for the automotive, trucking, off-highway, machinery and farm equipment industries. The City of Canton provides potable and all process water. The City of Canton also provides sanitary sewers.

4 Melt Shop

The # 4 Melt Shop utilizes two Electric Arc Furnaces (EAF) to melt ferrous scrap in order to provide liquid steel to the: FlexCast refining & continuous casting process; the Bloom Cast Facility refining & continuous casting process; and the ingot Bottom Pour operation. At the melt shop, scrap steel is melted in the two 220 ton EAFs to produce molten metal (i.e. liquid steel). Treated water is used at the melt shop to provide non contact cooling water (nccw) for the EAF shells, roofs, transformers and emission ductwork. These noncontact cooling waters are recirculated in closed-loop systems, with blowdowns generally cascaded into contact systems or discharged to the melt shop sump. There is a potential for a small flow of contact cooling water to develop when nccw leaks into the emission system drop-out chamber because of leaks developing in the water-cooled components; this water is pumped to the melt shop sump for conveyance to the Water Quality Control Center (WQCC) for treatment.

FlexCast Operation

The FlexCast operation is the most recent of the refining & continuous casting operations built at the Canton facility in 2005. It is a continuous bloom/billet caster. Molten steel is received from the # 4 Melt Shop in ladles. Alloys are added to the molten steel at the ladle refining furnace (LRF) in order to make the steel chemistry to customer specifications. The LRF is also used to add heat to the molten steel in order in order to achieve the proper temperature for processing at the vacuum tank degasser (VTD) and casting at the continuous caster. Prior to degassing at the VTD, slag is raked from atop the liquid steel at the slag rake station by tipping the ladle and "raking" off the slag with a paddle. The ladle of molten steel is degassed in a vacuum tank degasser to remove dissolved gases (e.g. hydrogen & oxygen). After degassing the ladle of molten steel is transferred to the caster. The molten steel is poured from a nozzle at the bottom of the ladle into a tundish and then cast through five tundish nozzles into the caster molds where it begins to solidify and form a continuous bloom (e.g. 9" x 7" cross section) or billet (e.g. 6.75" x 6.75" cross section). The steel is sprayed with cooling water as it travels through the initial section of the caster in order to promote solidification. The steel bloom or billet is cut to the desired length with a torch on each strand, at the end of the casting process.

Wastewater is produced as follows:

- Contact cooling water to cool the steel strand
- Contact cooling water (flume flush water) to move associated scale to scale pit
- Condensate from vacuum degassing
- Noncontact cooling water on the LRF roof & caster molds.

Treatment provided:

- Caster contact water is treated at the FlexCast by collecting a in a primary scale pit for initial settling. The water is pumped from the primary scale pit to the CBCF secondary scale pit then to the filter building where it is filtered through four (4) sand filters; next the water is passed through a cooling tower and then returned to the caster for re-use. Water treatment programs used in this treatment circuit include chemicals for micro/bio control, sodium hypochlorite, and chemicals for a scale inhibitor and corrosion protection program in order to protect the piping systems. Mill scale is removed from the primary scale pits periodically by a clam-bucket and is placed on a concrete pad next to the scale pit in order to decant the free liquids back to the primary pit. Periodically the decanted scale is moved to a storage pile at the slag processing area and sold as the market dictates. Solids from the secondary scale pit are cleaned during annual maintenance outages.

- Condensate from the vacuum degassing operations is collected in a hot well; the water is pumped from the degassing hot wells to the pumphouse degas hot well, then pumped to the cooling towers and recycled back to the vacuum degasser after-condensers for re-use.
- Noncontact cooling water is recirculated in closed-loop systems, with blowdowns generally cascaded into contact systems or discharged to the melt shop sump.

The following wastewater produced from the recycle system is sent to the melt shop sump:

- Blowdown from all the recycle systems (contact, nccw, and degas)
- Backwash from the sand filters
- Reject water from the pumphouse reverse osmosis filters.
- NCCW leaks from drop-out chambers.
- Certain blowdown and wastewaters from the Airco Plant.

Federal guidelines apply to the following processes within the steel production guideline 40 CFR 420:

- Vacuum Degassing (40 cfr 420.54 Subpart E, NSPS): Liquid steel undergoes vacuum degassing to remove dissolved gases such as oxygen and hydrogen.
- Continuous casting (40 cfr 420.64): This process takes molten steel and solidifies it into a steel bloom or billet.

CBCF Operation (aka Cast Roll Facility)

The Canton Bloom Cast Facility (CBCF) also receives its molten steel from the # 4 Melt Shop and processes it much the same as the FlexCast process, including refining (LMF) and degassing (VTD). Instead of 5 stands on the continuous caster, the CBCF caster only has 4 strands and produces one bloom size, 10" by 13". The cast blooms exit the caster and are directly charged to the rolling mill reheat furnace where they are heated to rolling temperature; the blooms are then processed on the rolling mill to produce various sizes of billet. Some blooms may be removed at the caster, prior to charging to the reheat furnace, for rolling at other offsite mills.

Wastewater is produced as follows:

- Contact cooling water to cool the steel strand on the caster.
- Contact cooling water (flume flush water) at the caster to move scale to the primary scale pit
- Noncontact cooling water on the LMF roof & caster molds.
- Condensate from vacuum degassing.

- Descaler contact water (high pressure) to remove scale from blooms exiting the reheat furnace.
- Contact water at the rolling mill to cool rolling mill stands and flume flush water to move scale to the primary scale pit.

Treatment provided:

- Caster contact water and rolling mill contact water is treated at the CBCF by collecting in primary scale pits for initial settling (one each for the caster and rolling mill). The water is pumped from the primary scale pits to the CBCF secondary scale pit and then to the filter building where it is filtered through four (4) sand filters; next the water is passed through a cooling tower and then returned to the caster and rolling mill for re-use. Water treatment programs used in this treatment circuit include chemicals for micro/bio control, sodium hypochlorite, and chemicals for a scale inhibitor and corrosion protection program in order to protect the piping systems. Mill scale is removed from the primary scale pits periodically by a clam-bucket and is placed on a concrete pad next to each scale pit in order to decant the free liquids back to the primary pit. Periodically the decanted scale is moved to a storage pile at the slag processing area and sold as the market dictates. Solids from the secondary scale pit are cleaned during annual maintenance outages. (Note that the secondary scale pit and subsequent treatment is the same system used for treating the contact water from the FlexCast caster).
- Condensate from the vacuum degassing operations is collected in a hot well; the water is pumped from the degassing hot wells to the pumphouse degas hot well, then pumped to the cooling towers and recycled back to the vacuum degasser after-condensers for re-use.
- Noncontact cooling water is recirculated in closed-loop systems; system blowdowns are generally cascaded into contact systems or discharged to the melt shop sump.

The following wastewater produced from the recycle systems are sent to the melt shop sump:

- Blowdown from the recycle system
- Backwash from the sand filters

Federal guidelines apply to the following processes within the steel production guideline 40 CFR 420:

- Vacuum Degassing (40 cfr 420.54)
- Continuous casting (40 cfr 420.64)

- Hot Forming/Section Mill (40 cfr 420.74 Subpart G b.1. carbon) Hot rolling of steel blooms into various sizes. Process water results from cooling the rolling mill stands which are in direct contact with the steel.

Bottom Pour

Ingots are produced at this plant but there are no associated wastewaters produced by either a recycle system or directly sent to the main plant wastewater treatment system.

12 Inch Quality Verification Line

Large rolls in a straightening machine are used to straighten steel bars. The rolls are cooled with recirculated water, producing contact cooling water. Water is also used in the ultrasonic testing of the bar as couplant water in order to conduct the sound waves between the testing equipment and the steel bar. These wastewaters are recirculated in closed systems. The water is pumped from these systems on a weekly basis and dumped into the former 12-inch mill scale pit; wastewater in this scale pit is sent to the onsite WQCC treatment plant.

Additional wastewaters produced and sent to the main plant wastewater system

- Stormwater, groundwater, and air compressor nccw is collected in the former 35-inch mill scale pit
- Stormwater, groundwater, 12 Inch Quality Verification Line wastewater, and vac truck cleanups are collected in the former 12-inch mill scale pit.

Water Quality Control Center (WQCC)

Wastewater collected in the Melt Shop Sump is sent to the WQCC as is wastewater from the former 12 and 35 inch mill scale pits. Wastewater enters the WQCC through the influent flume and flows to an above ground rapid mix tank where a coagulant is added, pH is adjusted with lime and flocculant is added. Wastewater flows to one of two one-million gallon clarifiers. Minor amounts of floating oil is skimmed off via the scum box and routed to a below grade concrete sump next to the treatment building. Oil is skimmed using a rope skimmer and collected in a recycle tank. Clarified effluent exiting the rim weirs of the clarifier is then routed to a cold well and then is pumped to three sand filter tanks. Effluent from the sand filters then enters an above ground flow equalization tank where it overflows by gravity to outfall 601. Sludge from the clarifiers is dewatered by one of two rotating vacuum drum filters. Filtrate is routed to the front end of the treatment system. Sludge is currently hauled to American Landfill located in Waynesburg, Stark County. Backwash from the sand filters is collected in a tank located adjacent to the flow aforementioned flow equalization tank. It is pumped back to the front end of the treatment system.

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Outfall 601 is located on the south side of the treatment building within a below grade vault. It is monitored in accordance with the NPDES permit to meet applicable federal guideline numbers. Flow is measured here using a model 4230 Bubbler flow meter. It is located adjacent to a V-notched weir and the overhead vertical line transferring the effluent from the flow equalization basin. Twenty four hour time weighted composite samples are taken using an ISCO sampler. At the time of the inspection, the refrigerator was broken and no thermometer was present to ensure proper refrigeration of the samples taken. A bag of ice was present and placed around the sample container.

Outfall 601 then flows by gravity southwest to "Johnson's Pond" located on the north property line and south of the railroad tracks. Johnson's Pond receives stormwater runoff, groundwater and service water bleed for freeze protection lines. Outfall 010 monitors the discharge from Johnson's Pond as it flows north via a culvert under the railroad tracks. The culvert travels north through the Republic Storage System property where it eventually discharges to the East Branch of Nimishillen Creek. A shed houses a sample station with another ISCO sampler taking flow weighted composites. The refrigerator was also broke and again no thermometer was observed. Ice bags are used to cool the samples. Flow is again monitored with a 4230 Bubbler flow meter. This meter was located in a parshall flume built into the culvert under the railroad tracks. The meters at outfalls 601 and 010 are calibrated on a quarterly basis. TestAmerica lab performs the sampling and analysis for your discharges.

Stormwater

There are numerous stormwater discharges from this facility. Outfalls 003, 009, and 011 have monitoring tables contained in Part I, A of the NPDES permit. The rest of the stormwater outfalls are listed in the permit but do not have any associated tables or monitoring.

You had available a Stormwater Pollution Prevention Plan (SWPPP) which was last updated in 2006.

Outfall Observations

Pictures were taken of the outfalls 010, 601, 011, 009, and 003 and of the treatment facilities and are attached for your reference. At the time of my inspection the following visual observations were made:

- 010:** Flowing clear at the outlet of Johnsons Pond. Small amount of green algae located before outfall
- 601:** Appeared to be clear, but hard to determine due to extreme turbulence.
- 011:** No flow at time of inspection.

- 009:** Flowing at approximately 50 gpm. Visually clear and no sheen.
003: Flowing at approximately 30-40 gpm. Note boom that is usually stretched across the East Branch Nimishillen was detached and was parallel to this outfall. There was oil sheen present, but it was located on the other side of the boom and was not attributed to outfall 003.

Flow is measured by measuring the height of the water in the pipe at outfall 003; the bucket/stopwatch method is used at outfalls 009 and 011.

Compliance History

A review of Republic Engineered Products NPDES compliance history for the time period of August 1, 2005 thru March 2010 indicated the following:

Numeric Violations

Station	Parameter	Limit Type	Limit	Reported Value	Violation Date
601	Zinc, Total Recoverabl	30D Qty	0.94	1.05024	1/1/2005
010	Chronic Toxicity, Ceri	30D Conc	3.04	11.8	12/1/2005
010	Chronic Toxicity, Ceri	30D Conc	3.04	5.66	3/1/2006
010	pH	1D Conc	6.5	6.	7/26/2006
601	Zinc, Total Recoverabl	30D Qty	0.94	1.17865	3/1/2008
601	Zinc, Total Recoverabl	30D Qty	0.94	1.20552	8/1/2008
601	Zinc, Total Recoverabl	30D Qty	0.94	.95155	7/1/2008
011	pH	1D Conc	9.0	9.2	12/9/2009
601	Zinc, Total Recoverabl	30D Qty	0.94	1.271	12/1/2009
010	Oil and Grease, Hexane	1D Conc	20	20.3	10/14/2009
011	pH	1D Conc	9.0	9.2	10/15/2009
601	Zinc, Total Recoverabl	30D Qty	0.94	1.12017	11/1/2009
011	pH	1D Conc	9.0	9.1	2/23/2010
011	pH	1D Conc	9.0	9.17	2/27/2009
011	pH	1D Conc	9.0	9.5	1/13/2009
010	Acute Toxicity, Ceriod	1D Conc	1.0	1.06	1/29/2010
010	Chronic Toxicity, Ceri	30D Conc	2.44	2.6	1/1/2010
011	pH	1D Conc	9.0	9.2	1/25/2010

Frequency Violations

Station	Parameter	Sample Frequency	Expected	Reported	Violation Date
010	Total Suspended Solids	1/Week	1	0	02/01/2007
010	pH	1/Week	1	0	02/01/2007
010	Water Temperature	1/Week	1	0	02/01/2007
010	Oil and Grease, Hexane	1/Week	1	0	02/01/2007
601	pH	1/Week	1	0	02/01/2007
010	Total Suspended Solids	1/Week	1	0	02/01/2008
010	pH	1/Week	1	0	02/01/2008

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Station	Parameter	Sample Frequency	Expected	Reported	Violation Date
010	Water Temperature	1/Week	1	0	02/01/2008
010	Oil and Grease, Hexane	1/Week	1	0	02/01/2008

Items to be Addressed

- 1) The ISCO sampler refrigerator units must be repaired or replaced as soon as possible.
- 2) Appropriate thermometers must be present during sample collection to ensure proper preservation. The temperature must be maintained at 4 degree Celsius or less during sample storage.
- 3) The location of the flow measuring device for outfall 601 is located at a point of extreme turbulence. This may interfere with the ability to provide an accurate flow measurement. You were requested to follow up with the manufacturer to confirm whether or not it is a proper location. Noted was that you have had suspect readings in the past.
- 4) The SWPPP needs to be updated to address all items required in Part II of the current permit. Please be advised that the NPDES renewal will contain Parts IV, V, and VI This language that can be found in the General Industrial Stormwater Permit which can be found on our website at: http://www.epa.state.oh.us/dsw/permits/GP_IndustrialStormWater.aspx. The current stormwater language contained in Part II will be removed. Upon updating we request that you submit a copy to this office for our review.

Should you have any questions concerning the information contained in this letter, please feel free to contact me at (330) 963-1136.

Sincerely,

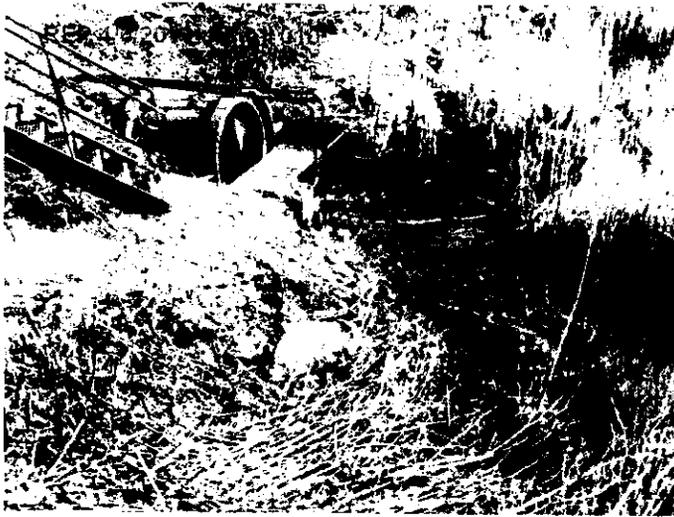


Philip P. Rhodes, P.E.
Environmental Specialist II
Division of Surface Water

PPR/mt

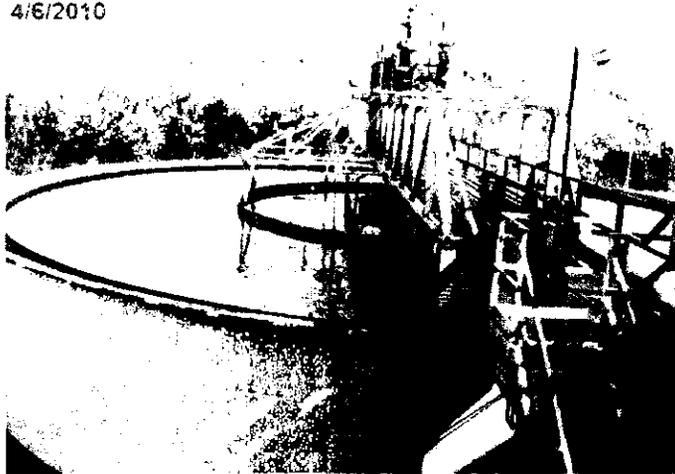
Attachment

File: Industrial Permit/Compliance

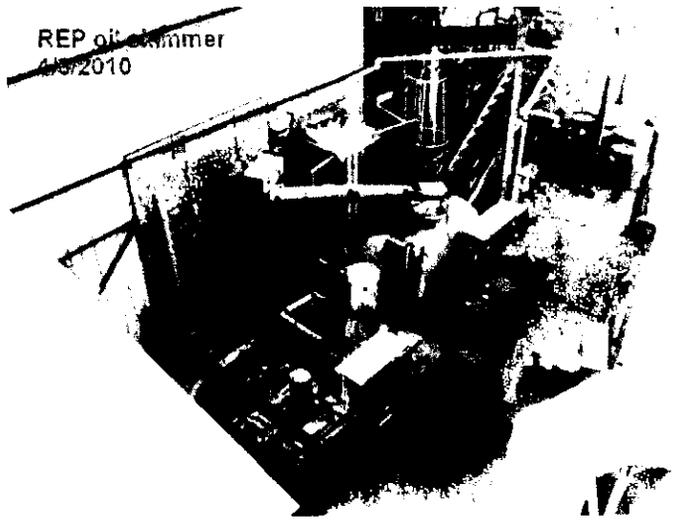


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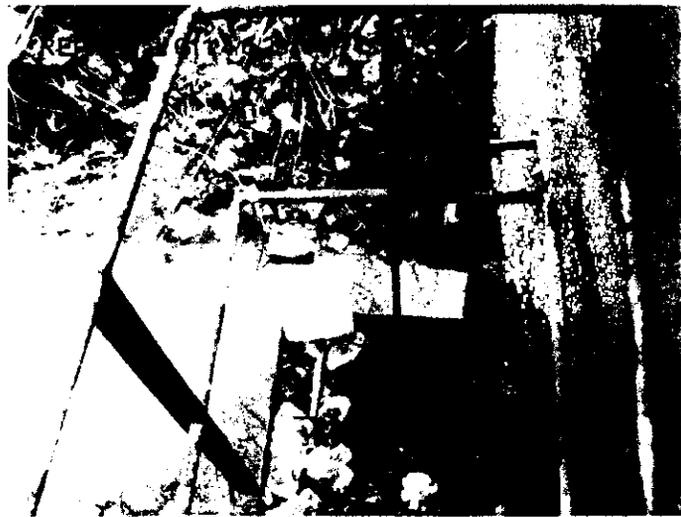
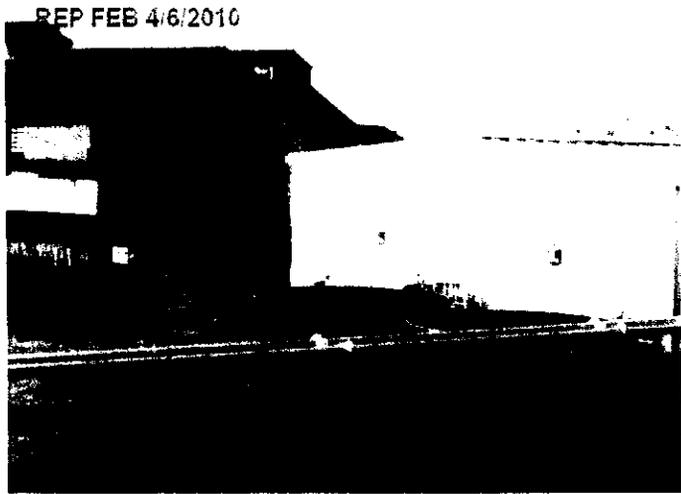
REP Clarifier
4/6/2010



REP oil skimmer
4/6/2010



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