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Ashland Hercules Water Technologies

Rod Bolton
Regional Plant Manager

Hattiesburg, MS Plant
613 West 7th Street
Hattiesburg, MS 39401
(601) 545-3450

June 9, 2009

Jan M. Patton
Mississippi Department of Environmental Quality
Chemical Branch
Environmental Compliance and Enforcement Division
Jackson, Mississippi 39225-2261

RE: Notice of Violation Hercules Inc Hattiesburg, Mississippi Forest County NOV Response Follow-up

Dear Ms Patton,

Pursuant to your letter dated April 28, 2009, we are responding to the additional questions you asked regarding the sludge removal at our Hattiesburg facility.

1. *Detailed description of a "sludge removal campaign", including how often, amount of sludge removed, what triggered a campaign, what triggered the end of a campaign, and historical removal methods.*

To better understand a sludge removal campaign, it is important to understand the structure of the impoundment. The impoundment has an earthen bottom, which is concave in shape. The walls of the impoundment are reinforced with wood, and capped with poured concrete. The concrete cap is about two feet wide and deep. The center of the impoundment is approximately 10 feet deep.

The impoundment was managed so that the water layer would not be higher than about one to two feet below the top of the cement cap. As sludge built up, the water layer would decrease. This would reduce the amount of time the solids in the water could settle out, and consequently, increase the total suspended solids in our discharge. Typically sludge removal was initiated when the sludge accumulated to a level where the water level was reduced to the point such that the water retention period was becoming too short to allow solids to sufficiently settle out. In general, this meant that sludge was removed when the water layer was reduced to about one foot. Decisions were made to conduct a sludge removal based on visual observation and also total suspended solids (TSS) readings.

Sludge removal was not conducted at a set frequency, but rather was based on the water level and retention time described above. Focusing on the period right before the effective date of the Toxicity Characteristic rule and the end of the last sludge removal campaign in September 2002, it appears that six sludge removal events occurred. These appear to correspond to the six sample events conducted on: September 4, 1990; May 10, 1995; August 28, 1996; May 13, 1998; August 24, 2000; and July 24, 2001. The average duration of a sludge removal campaign was three to four weeks. Plant production operations have been reduced significantly in the last few years, which have reduced the need for sludge removal.

The amount of sludge removed from the impoundment depended upon the duration of removal and the removal method. A major campaign would typically remove three feet or more of sludge from the impoundment, which could equate to approximately 400,000 gallons, or more, of sludge.

A sludge removal campaign would end when the removal method was no longer able to extract a good thick sludge. In addition, the removal campaign would be terminated if the removal technique caused too much sludge to mix in the water resulting in an increased amount of suspended solids in the effluent.

Two sludge removal techniques were used to remove sludge from the impoundment. The first method was a clam-shell bucket attached to a drag line. The clam-shell bucket was lowered into the basin and retrieved. The contents in the bucket were then emptied into a truck, which took the sludge to the sludge pits. While this method was effective, it often resulted in an increase of total suspended solids in the effluent.

Another method of sludge removal was the use of a lagoon pumper, which was able to pump sludge from the impoundment while minimizing disturbance of the sludge. The lagoon pumper was attached to a floating raft, which had an arm that extended into the sludge layer. The lagoon pumper would pump sludge directly to trucks, which took the sludge to the sludge pits. The lagoon pumper was also capable of pumping sludge to a 17,000 gallon holding silo near the impoundment. Trucks could then load directly from the silo. Removal with the lagoon pumper was sometimes combined with use of a pontoon auger pumper, which was more maneuverable and better suited for removing sludge from the walls and west end of the basin.

2. *In regards to the historical sludge analyses you submitted, a detailed explanation of what type of sampling techniques that were used, the exact location of the sampling event, and who was responsible for taking the sample (Hercules' employee or lab technician).*

After the Toxicity Characteristic rule was published, sludge samples were taken on: September 4, 1990; May 10, 1995, March 5, 1996; August 28, 1996; May 13, 1998; August 24, 2000; and July 24, 2001. With the exception of the March 5, 1996 sample, all samples were requested and performed by either Summit Environmental Technologies, Inc. or Bonner Analytical Testing Company. The March 5, 1996 sample was taken by Waste Management for characterization prior to potential acceptance for off-site disposal. While Hercules did not perform any sludge sampling, a Hercules employee always accompanied the third-party lab technician performing the sampling.

The sludge samples that were taken directly from the basin by Summit Environmental Technologies, Inc., or Bonner Analytical Testing Company, used a sample thief. The sludge samples were usually taken by the sample collector extending the thief as far out as possible. This would result in samples being taken near the side walls and from the upper portion of the sludge. It is also possible that some samples were taken after the sludge was removed from the basin and placed in the truck. During each sampling event, the grab sample was properly containerized and placed on ice as required. Chain-of-custody and customary QA/QC measures were followed. The sample was then sent to the laboratory for TCLP analysis.

We hope this satisfies your requests. Please contact me at 414-461-4000, ext. 157 if you need additional information.

Sincerely,

RS Bolton

Rodney S. Bolton
Regional Plant Manager