Department of Energy

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JAN 12 2010

Mr. W. Turpin Ballard
U.S. Environmental Protection Agency, Region 4
Federal Facilities Branch
61 Forsyth Street
Atlanta, Georgia 30303

PPPO-02-145-10

Mr. Edward Winner, FFA Manager
Kentucky Department for Environmental Protection
Division of Waste Management
200 Fair Oaks Lane, 2nd Floor
Frankfort, Kentucky 40601

I-01716-0200

Dear Mr. Ballard and Mr. Winner:

REPLACEMENT PAGE FOR THE OPERATIONS AND MAINTENANCE PLAN FOR THE NORTHWEST STORM WATER CONTROL FACILITY AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY (DOE/OR/07-2044&D1/R4)

Please find enclosed the replacement page for the Operations and Maintenance Plan for the Northwest Storm Water Control Facility at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky (DOE/OR/07-2044&D1/R4). The proposed change pertains to the calibration standard solution for the in-line turbidity meter for the Northwest Storm Water Control Facility, also known as the C-613 Sedimentation Basin.

The prior revision specifies turbidity calibration standards at concentrations of 40, 200, and 800 nephelometric turbidity units (NTUs). The proposed change specifies utilizing standards of 0 and 100 NTUs in the development of the turbidity calibration curve, which is conducted on a quarterly basis. This change in standards would allow for the development of a calibration curve at a lower concentration range. Turbidity values have decreased in recent years due to the overall decrease in sediment. Good analytical practice is to develop a calibration curve in a range where the sample concentration value is expected. This practice also is reinforced in the operator's manual of the in-line turbidity meter. Overall, this change should generate more precise turbidity readings at these lower concentration levels. Therefore, DOE requests approval of the proposed change to the calibration standards as set forth in the enclosed replacement page.

If you have any questions or require additional information, please contact David Dollins at (270) 441-6819.

Sincerely,

Reinhard Knerr
Paducah Site Lead
Portsmouth/Paducah Project Office

Enclosure:
Replacement Pages for the O&M Plan for C-613

cc w/enclosure:
AR File/Kevil

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DOE/OR/07-2044&D1/R4
Secondary Document

Operation and Maintenance Plan for the Northwest Storm Water Control Facility at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky

September 2009

CLEARED FOR PUBLIC RELEASE

DOE/OR/07-2044&D1/R4
Secondary Document

Operation and Maintenance Plan for the Northwest Storm Water Control Facility at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky

Date Issued—September 2009

Prepared for the
U.S. DEPARTMENT OF ENERGY
Office of Environmental Management

Prepared by
PADUCAH REMEDIATION SERVICES, LLC
managing the
Environmental Remediation Activities at the
Paducah Gaseous Diffusion Plant
under contract DE-AC30-06W05001

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The pH and turbidity meters were calibrated to standard solutions after they were installed. The turbidity meter was calibrated using 40, 200, 800 nephelometric turbidity unit (NTU) standards and the manufacturer's operating manual. The pH meter was calibrated using standard buffer solutions of pH 4 and pH 7. Continuing quality assurance activities will consist of calibrating the turbidity and pH meters with factory standards (pH 4 and pH 7 buffer solutions for the pH meter and 0 and 100 NTU standards for the turbidity meter) on a quarterly basis.

The relationship of turbidity to total suspended solids in the runoff from the scrapyards was determined from laboratory analysis of TSS and suspended solids obtained from seven samples collected at the basin. All but one of the five samples collected on March 19, 2003, (from various locations within the basin and recirculation system) and 1 sample each collected on May 7 and May 12, 2003, (from within the recirculation system) represented normal basin conditions under stable weather. The 5th sample collected on March 19, 2003, is a fabricated turbidity sample, generated by mixing bottom sediment with the water sample, to aid in correlation of TSS and NTU values. The TSS and NTU values of each sample were plotted on a graph (see Fig. A.4). The graph shows a linear regression line through seven data points where $R^2 = 0.9362$ and the regression equation TSS = 1.282605 + 0.862264 x NTU. The high R^2 means the linear model accounts for 93.62% of the variation in TSS. The model predicts the 30 mg/L of TSS will occur at 33.3 NTU. The model will be updated four times annually with the results of the quarterly laboratory sample discussed in Sect. 5.2. This information will be included in the O&M Basin Facility section of the Semiannual FFA Progress Report.

5.4 MONITORING FREQUENCY

Water retained in the basin will be monitored for TSS (as turbidity) and pH to optimize discharge and treatment system operations. The pH and turbidity levels of system effluent shall be determined prior to discharge to Ditch 001.

6. DESCRIPTION OF ALTERNATE O&M

6.1 ALTERNATE PROCEDURES

In order to prevent undue hazards if the basin's normal discharge system undergoes a long-term failure, the basin is designed with an emergency spillway designed to pass the peak flow from a 25-year, 24-hr precipitation event.

6.2 ANALYSIS OF VULNERABILITY

Should the basin's normal discharge system undergo long-term failure, the additional runoff retention time caused by the basin would continue to reduce TSS.

7. SAFETY PLAN

Safety and Health Work Permits or Activity Hazard Assessments will be issued to personnel who operate and perform maintenance for the basin. These permits describe the requirements to wear appropriate personal protective equipment (PPE) such as steel-toed boots, eye and hearing protection, and company-

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Deleted: 40, 200, 800

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