

MONITORING AND REPORTING PROGRAM  
Order No. R1-2013-0047  
(Revised August 23, 2016)

FOR

DG FAIRHAVEN POWER, LLC  
BOTTOM AND FLY ASH REUSE  
AS A SOIL AMENDMENTS

Humboldt County

California Water Code section 13267 authorizes the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This monitoring and reporting program establishes monitoring and reporting requirements, which implement state regulations. Any person failing to furnish technical or monitoring reports or falsifying any information therein is guilty of a misdemeanor, and may be subject to civil liability. (Water Code section 13268)

BOTTOM AND FLY ASH SOIL AMENDMENT MONITORING

Bottom and fly ash (ash) generated during biomass combustion at the DG Fairhaven Power Facility shall be managed, processed, sampled and handled in accordance with the Executive Officer approved *DG Fairhaven Power LLC (DGF) Best Management Practices for Reuse of Wood Fly Ash as a Soil Amendment* and *DG Fairhaven Power LLC (DGF) Best Management Practices (BMP) for Reuse of Wood Bottom Ash to Amend Soil in High-Trafficked Livestock Agricultural Areas* (collectively BMPs).

To ensure that the application of ash does not threaten water quality; exceed either Code of Federal Regulations Part 503, Table III, Lower Concentrations criteria for metals or Department of Toxic Substances Control criteria for agricultural land use; and to confirm compliance with conditions required for coverage under adopted Resolution No. R1-2012-0099, Policy for Waiving Waste Discharge Requirements for Specific Types of Waste Discharge in the North Coast Region (General Waiver), DG Fairhaven Power (Discharger) shall implement the following monitoring activities:

**Table 1**

| Parameter                           | Units         | Sample Type | Sampling Frequency   | Required Analytical Test Method <sup>1</sup>    |
|-------------------------------------|---------------|-------------|----------------------|---|
| Feed Stock Composition <sup>2</sup> | Dry-tons      | Continuous  | Monthly              | ---   |
| Fly Ash Volume Generated            | Dry-tons      | Continuous  | Monthly              | ---   |
| Bottom Ash Volume Generated         | Dry-tons      | Continuous  | Monthly              | ---   |
| Fly Ash Liming Capacity             | Equiv % CaCo3 | Grab        | 2x/year              | UC Davis Method 440 or AOAC 955.01 <sup>3</sup> |
| Fly Ash Total Phosphorous           | mg/kg         | Grab        | Annually             | title 40, section 136                           |
| Fly Ash CAM 17 Metals               | mg/kg         | Grab        | 2x/year <sup>4</sup> | 6010B/7000A                                     |
| Fly Ash Dioxin TEQ <sup>5</sup>     | mg/kg         | Grab        | 2x/year <sup>6</sup> | EPA Method 1613                                 |
| Bottom Ash CAM 17 Metals            | mg/kg         | Grab        | 2X/year <sup>7</sup> | 6010B/7000A                                     |
| Bottom Ash Dioxin TEQ <sup>8</sup>  | mg/kg         | Grab        | Annually             | EPA Method 1613                                 |

<sup>1</sup> Upon approval from the Executive Officer, an alternative method providing equivalent or superior information/results may be substituted for the specified analytical method.

<sup>2</sup> The Discharger shall monitor and report nature, source(s), and volume of feed stock.

<sup>3</sup> A&L Western Agricultural Laboratories' Neutralizing value of liming materials (or percent calcium carbonate equivalency-CCE).

<sup>4</sup> Upon written request from the Discharger, sampling frequency may be reevaluated after two additional consecutive years of data has been submitted. Based on the historical monitoring data sampling may be reduced to annually, when authorized by the Regional Water Board Executive Officer in a monitoring reduction approval letter.

<sup>5</sup> Dioxin equivalents, also known as the TEQ, is a calculated value which reflects the combined effect of dioxin and furan compounds (congeners). Results for dioxin TEQ shall include all congeners.

<sup>6</sup> Upon written request from the Discharger, sampling frequency may be reevaluated after two additional consecutive years of data has been submitted. Based on the historical monitoring data sampling may be reduced to annually, when authorized by the Regional Water Board Executive Officer in a monitoring reduction approval letter.

<sup>7</sup> Upon written request from the Discharger, sampling frequency may be reevaluated after two additional consecutive years of data has been submitted. Based on the historical monitoring data sampling may be reduced to annually, when authorized by the Regional Water Board Executive Officer in a monitoring reduction approval letter.

<sup>8</sup> Dioxin equivalents, also known as the TEQ, is a calculated value which reflects the combined effect of dioxin and furan compounds (congeners). Results for dioxin TEQ shall include all congeners.

**Table 1**

| Parameter                                   | Units                 | Sample Type             | Sampling Frequency | Required Analytical Test Method <sup>1</sup>                             |
|---|-----------------------|-------------------------|--------------------|--|
| Soil Lime Requirement <sup>9</sup>          | T/A/8in <sup>10</sup> | Composite <sup>11</sup> | >8 T/ac            | UC Davis Method 450 or WREP-125, 2 <sup>nd</sup> Ed. S2.50 <sup>12</sup> |
| Soil CAM 17 Metals                          | mg/kg                 | Composite               | 1x/5 applications  | 6010B/7000A  |
| Soil Dioxin TEQ                             | mg/kg                 | Composite               | 1x/5 applications  | EPA Method 1613  |
| Fly Ash Volume Distributed <sup>13</sup>    | Dry-tons              | Continuous              | Annually           | ---  |
| Bottom Ash Volume Distributed <sup>14</sup> | Dry-tons              | Continuous              | Annually           | ---  |

### ANNUAL MONITORING REPORT

The Discharger shall provide an Annual Report to the Regional Water Board regarding implementation of the required BMPs during the previous year. The Annual Report shall be submitted by March 15th of each year, and shall include, but not be limited to, the following:

1. A description of the activities that took place during the previous year;
2. A tabular summary of information and laboratory analytical data for constituents listed in Table 1 of this Order. The tabular summary shall include analytical results presented for the previous five years of sampling and be accompanied by laboratory data sheets for the current year's results;
3. Completed copies of Land Owner Agreements;

<sup>9</sup> The requirement for this parameter may be substituted by sampling cation exchange capacity, pH, and buffer index of the soil.

<sup>10</sup> Tons per acre of 100% CaCO<sub>3</sub> required based on an 8 inch furrow slice weighing 2.4 million pounds.

<sup>11</sup> Composite sample shall be representative of the intended area/field of application

<sup>12</sup> A&L Western Agricultural Laboratories' lime requirement for soil (Sikora buffer pH).

<sup>13</sup> The volume, location, and use type (i.e., field application or loafing bed) shall be reported.

<sup>14</sup> The volume, location, and use type (i.e., field application, loafing bed, etc.) shall be reported.

4. A scaled map of each site where ash was applied during the previous year. The map(s) shall display U.S Geological Survey topographic contours (if available within the applicable site boundaries) and include parcel boundaries; adjacent public roadways; loading and unloading area(s) if different from the application area; application area boundaries; all setbacks identified in the BMPs; the location of domestic and agricultural water wells, water bodies including drainage ditches, creeks, and ponds within 100 feet of the application site, and loading/unloading areas;
5. Photo documentation of each loafing bed, watering trough, or, livestock traffic lane receiving ash amendment during the calendar year; and
6. Completed copies of the agronomic rate calculation worksheet for each application area developed during the previous year.

#### CERTIFICATION

All reports required by this Monitoring and Reporting Program or other information requested by the Regional Water Board, or the State Water Resources Control Board for compliance determination with the conditions of the approved BMPs shall be signed by the Chief Executive Officer or a duly authorized representative of that person. Any person signing a document under this requirement shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Ordered by: \_\_\_\_\_

Matthias St. John  
Executive Officer

August 23, 2016