

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2008-\_\_\_\_  
FOR  
WADHAM ENERGY LIMITED PARTNERSHIP  
AND  
ENPOWER MANAGEMENT CORP.  
BIOMASS-FIRED COGENERATION FACILITY  
CLASS II SURFACE IMPOUNDMENTS  
COLUSA COUNTY

Compliance with this Monitoring and Reporting Program (MRP), and with the companion Standard Provisions and Reporting Requirements, is ordered by Waste Discharge Requirements Order No. R5-2008-\_\_\_\_ (WDRs). Failure to comply with this Program, or with the Standard Provisions and Reporting Requirements dated September 2003, constitutes noncompliance with the WDRs and with California Water Code Section 13267, which can result in the imposition of civil monetary liability.

**A. MONITORING**

The Discharger shall comply with the monitoring program provisions of Title 27 for groundwater, surface water, and the unsaturated zone, in accordance with Monitoring Specifications in Standard Provisions and Reporting Requirements (2003). All point-of-compliance monitoring wells established for the detection monitoring program shall constitute the monitoring points for the groundwater Water Quality Protection Standard. All detection monitoring program groundwater monitoring wells, surface water monitoring points, unsaturated zone monitoring devices, and leachate monitoring points shall be sampled and analyzed for monitoring parameters and constituents of concern as indicated and listed in the tables of this MRP.

The Discharger may, upon approval, use alternative analytical test methods, including new USEPA approved methods, provided the methods have method detection limits equal to or lower than the analytical methods specified in this Monitoring and Reporting Program.

The Discharger shall conduct inspections and monitoring as described in the summary table below. Detailed monitoring and inspection requirements are provided in the following sections.

**1. Groundwater Monitoring**

The Discharger shall operate and maintain a groundwater monitoring system that complies with the applicable provisions of §20415 of Title 27. The Discharger shall determine the groundwater flow rate and direction in the uppermost aquifer and in any zones of perched water and in any additional zone of saturation monitored pursuant to this Monitoring and Reporting Program at least quarterly, and report the results semiannually, including the times of highest and lowest elevations of the

water levels in the wells. Quarterly water level measurements shall be taken in monitoring wells MW-1A, MW-1B, MW-2, MW-3, and any wells installed after the adoption of this MRP.

Groundwater samples shall be collected from the point-of-compliance wells, background wells, and any additional wells added as part of the approved groundwater monitoring system. Prior to sampling, the groundwater elevations shall be measured and the wells shall be purged of at least three well volumes until temperature, pH, and electrical conductivity have stabilized. Depth to groundwater shall be measured to the nearest 0.01 feet. Samples shall be collected and analyzed for the monitoring parameters in accordance with the methods and frequency specified in the following table:

<b>Groundwater Monitoring</b>			
<u>Parameters</u>	<u>Units</u>	<u>Monitoring Frequency</u>	<u>Reporting Frequency</u>
<u>Field Parameter</u>			
Groundwater Elevation	feet & hundredths, MSL	Quarterly	Semiannually
Temperature	°C	Semiannually	Semiannually
Specific Conductance	umhos/cm	Semiannually	Semiannually
pH	pH number	Semiannually	Semiannually
Turbidity	NTU	Semiannually	Semiannually
<u>Monitoring Parameters</u>			
Total Dissolved Solids	mg/L	Semiannually	Semiannually
Chloride	mg/L	Semiannually	Semiannually
Sulfate	mg/L	Semiannually	Semiannually
Nitrate as Nitrogen	mg/L	Semiannually	Semiannually
<u>Constituents of Concern:</u>			
Total Organic Carbon	mg/L	5-years	5-years
Carbonate	mg/L	5-years	5-years
Bicarbonate	mg/L	5-years	5-years
Total Alkalinity	mg/L	5-years	5-years
Standard Minerals <sup>1</sup>	mg/L	5-years	5-years
Chemical Oxygen	mg/L	5-years	5-years

<sup>1</sup> Boron, calcium, chromium, iron, manganese, magnesium, potassium, sodium, zinc

## 2. Surface Water Monitoring

Surface water flows from on and around the surface impoundment shall be sampled at the point(s) where they leave the facility boundary, during the first storm of the rainy season of each year which produces significant flow. Samples shall be collected from all stations and analyzed at the frequency and for the monitoring parameters specified the table below.

Surface water monitoring shall be submitted with the corresponding semi-annual groundwater monitoring and shall include evaluation of potential impacts of the facility on surface water quality and compliance with the Water Quality Protection Standard.

<b>Surface Water Monitoring</b>			
<u>Parameters</u>	<u>Units</u>	<u>Monitoring Frequency</u>	<u>Reporting Frequency</u>
<u>Field Parameter</u>			
Temperature	°C	Semiannually	Semiannually
Specific Conductance	umhos/cm	Semiannually	Semiannually
pH	pH number	Semiannually	Semiannually
Turbidity	NTU	Semiannually	Semiannually
<u>Monitoring Parameters</u>			
Total Suspended Solids	mg/L	Twice per year	Semiannually
Total Dissolved Solids	mg/L	Twice per year	Semiannually
Chloride	mg/L	Twice per year	Semiannually
Sulfate	mg/L	Twice per year	Semiannually
Nitrate as Nitrogen	mg/L	Twice per year	Semiannually
<u>Constituents of Concern:</u>			
Total Organic Carbon	mg/L	5-years	5-years
Carbonate	mg/L	5-years	5-years
Bicarbonate	mg/L	5-years	5-years
Total Alkalinity	mg/L	5-years	5-years
Chemical Oxygen Demand	mg/L	5-years	5-years
Standard Minerals <sup>1</sup>	mg/L	5-years	5-years

<sup>1</sup> Boron, calcium, chromium, iron, manganese, magnesium, potassium, sodium, zinc

### 3. Surface Impoundment Monitoring

Samples shall be collected from the surface impoundment in accordance with the table below:

<b>Surface Impoundment Monitoring</b>			
<u>Parameters</u>	<u>Units</u>	<u>Monitoring Frequency</u>	<u>Reporting Frequency</u>
<u>Field Parameter</u>			
Flow	gallons	Monthly	Semiannually
Freeboard	feet and tenths	Weekly	Semiannually
Remaining Capacity	acre-feet	Monthly	Semiannually
<u>Monitoring Parameters</u>			
Total Dissolved Solids	mg/L	Semiannually	Semiannually
Chloride	mg/L	Semiannually	Semiannually
Sulfate	mg/L	Semiannually	Semiannually
Nitrate as Nitrogen	mg/L	Semiannually	Semiannually
<u>Constituents of Concern:</u>			
Total Organic Carbon	mg/L	5-years	5-years
Carbonate	mg/L	5-years	5-years
Bicarbonate	mg/L	5-years	5-years
Total Alkalinity	mg/L	5-years	5-years
Standard Minerals <sup>1</sup>	mg/L	5-years	5-years
Chemical Oxygen Demand	mg/L	5-years	5-years

<sup>1</sup> Boron, calcium, chromium, iron, manganese, magnesium, potassium, sodium, zinc

### 4. LCRS/Leachate Monitoring and Annual LCRS Test

The leachate collection and removal systems (LCRS) sump shall be inspected weekly for leachate generation. Upon detection of leachate in a previously dry LCRS, the Dischargers shall immediately sample the leachate and shall continue to sample and report the leachate at the frequencies listed in the table below. Leachate monitoring will be incorporated into all future expansions.

All LCRS shall be tested annually to demonstrate operation in conformance with waste discharge requirements. The results of these tests shall be reported to the Regional Water Board and shall include comparison with earlier test made under comparable conditions.

<b>LCRS/Leachate Monitoring</b>			
<u>Parameters</u>	<u>Units</u>	<u>Monitoring Frequency</u>	<u>Reporting Frequency</u>
<u>Field Parameter</u>			
Total Flow	gallons	Monthly	Semiannually
Flow Rate	gallons per day	Monthly	Semiannually
Specific Conductance	umhos/cm	Monthly	Semiannually
pH	pH number	Monthly	Semiannually
<u>Monitoring Parameters</u>			
Total Dissolved Solids	mg/L	Semiannually	Semiannually
Chloride	mg/L	Semiannually	Semiannually
Sulfate	mg/L	Semiannually	Semiannually
Nitrate as Nitrogen	mg/L	Semiannually	Semiannually
<u>Constituents of Concern:</u>			
Total Organic Carbon	mg/L	Annually	Annually
Carbonate	mg/L	Annually	Annually
Bicarbonate	mg/L	Annually	Annually
Standard Minerals <sup>1</sup>	mg/L	5-years	5-years

<sup>1</sup> Boron, calcium, chromium, iron, manganese, magnesium, potassium, sodium, zinc

## 5. Unsaturated Zone Monitoring

The Discharger shall operate and maintain an unsaturated zone detection monitoring system that complies with the applicable provisions of §20415 of Title 27. Unsaturated zone samples shall be collected from the sump of the surface impoundment underdrain system. The collected samples shall be analyzed for the listed constituents in accordance with the methods and frequency specified in the following table.

<b>Unsaturated Zone Monitoring</b>			
<u>Parameters</u>	<u>Units</u>	<u>Monitoring Frequency</u>	<u>Reporting Frequency</u>
<u>Field Parameter</u>			
Specific Conductance	umhos/cm	Semiannually	Semiannually
pH	pH number	Semiannually	Semiannually
<u>Monitoring Parameters</u>			
Total Dissolved Solids	mg/L	Semiannually	Semiannually
Chloride	mg/L	Semiannually	Semiannually
Sulfate	mg/L	Semiannually	Semiannually
Nitrate as Nitrogen	mg/L	Semiannually	Semiannually

## 6. Water Supply Monitoring

A sample of the process water supply for the facility shall be collected annually and analyzed for total dissolved solids, chloride, sulfate, nitrate as nitrogen, and standard minerals (see list from tables above).

## 7. Solids Monitoring

The amount of each process waste or by-product removed from the facility per month shall be reported and the receiver and ultimate disposition shall be identified (e.g., landfilled, materials recovery, land applied for soil amendment, sold as a commercial product, etc.).

## 8. Facility Monitoring

### a. Facility Inspection

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess any damage to the drainage control system, the groundwater monitoring equipment (including wells, *etc.*), the surface impoundment liner system, and shall include the Standard Observations contained in Section XII.S of the Standard Provisions and Reporting Requirements. The inspection shall also verify that the Class II surface impoundment has sufficient capacity for the 100-year wet season. Any necessary construction, maintenance, or repairs shall be completed by **31 October**. By **15 November** of each year, the Discharger shall submit an annual report describing the results of the inspection and the repair measures implemented, including photographs of the problem and the repairs.

### b. Storm Events

The Discharger shall inspect all precipitation, diversion, and drainage facilities for damage **within 7 days** following major storm events. Necessary repairs shall be completed **within 30 days** of the inspection. The Discharger shall report any damage and subsequent repairs within 45 days of completion of the repairs, including photographs of the problem and the repairs.

## B. REPORTING

The Discharger shall report all required monitoring data and information, and results of all required facility inspections **semiannually** as required in this Monitoring and Reporting Program and as required in the Standard Provisions and Reporting Requirements.

Semiannual reports shall be submitted by the first day of the second month following the end of the previous half-year (i.e., the First Half 2008 report is due by 1 August 2008 and the Second Half 2008 report is due 1 February 2009). Reports which do not comply with the required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the WDRs. In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements or the lack thereof. Historical and current monitoring data shall be graphed at least once annually. Graphs for the same constituent shall be plotted at the same scale to facilitate visual comparison of monitoring data. A short discussion of the monitoring results, including notations of any water quality violations shall precede the tabular summaries. Data shall also be submitted in an acceptable digital format.

Method detection limits and practical quantitation limits shall be reported. All peaks shall be reported, including those which cannot be quantified and/or specifically identified. Field and laboratory tests shall be reported in the semiannual monitoring reports. The results of any monitoring done more frequently than required at the locations specified herein shall be reported to the Regional Water Board.

As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all Groundwater Monitoring Reports shall be prepared under the direct supervision of a Registered Engineer or Professional Geologist and signed/stamped by the registered professional.

#### REQUIRED MONITORING REPORTS AND SUBMITTAL DATES:

##### 1. **Semiannual Monitoring Reports**

Semiannual monitoring reports shall include all water quality data and observations collected during the reporting period and submitted as follows. Semiannual reports shall be submitted by the first day of the second month following the end of the previous half-year (i.e., the First Half 2009 report is due by 1 August 2009). At a minimum, the sampling and data collection required in the tables of this Monitoring and Reporting Program, Standard Provisions and Reporting Requirements (2003), and Waste Discharge Requirements shall be reported. The second semiannual and the Annual Monitoring Summary Report (see below) shall be submitted as one report.

## **2. Annual Monitoring Summary Report**

The Discharger shall submit an Annual Monitoring Summary Report covering the previous monitoring year. The report is due by 1 February of each year. The annual report shall contain the information specified in Standard Provisions and Reporting Requirements (2003), Section VIII.B of the "*Reports to be Filed with the Board*", including, but not limited to the requirement to plot the concentration of select constituents graphically for at least the past five years. The Annual Report shall also include the results of the annual LCRS testing required by Section A.4 of this MRP.

## **3. Constituents of Concern (COC) 5-Year Report**

The Dischargers shall submit reports of the results of groundwater monitoring for the Constituents of Concern every five years, or more frequently if required. The groundwater monitoring for COC Report shall alternate between the fall and spring seasons. The COC Report may be combined with a Detection Monitoring Report or an Annual Summary Report having a Reporting Period that ends at the same time. The next COC Report is due on 1 February 2009 for samples collected during the second half of 2008.

## **4. Response to a Release**

If the Discharger determines that there is either significant statistical evidence of a release (*i.e.* the initial statistical comparison or non-statistical comparison indicates, for any Constituent of Concern or Monitoring Parameter, that a release is tentatively identified) or physical evidence of a release, the Discharger shall immediately notify the Regional Water Board verbally as to the Monitoring Point(s) and constituent(s) or parameter(s) involved, shall provide written notification by certified mail within seven days of such determination and implement the "Response to Release" section of the Standard Provisions and Reporting Requirements (2003).

## **5. Facility Monitoring Report**

By **15 November** of each year, the Discharger shall submit an annual report describing the results of the inspection and the repair measures implemented, including photographs of the problem and the repairs, as required in Section A.8.a of this MRP, above.

## C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD

### 1. Water Quality Protection Standard

For each waste management unit (Unit), the Water Quality Protection Standard shall consist of all constituents of concern, the concentration limit for each constituent of concern, the point of compliance, and all water quality monitoring points. The Water Quality Protection Standard for naturally occurring waste constituents consists of the constituents of concern, the concentration limits, and the point of compliance and all monitoring points. Any modifications to the Water Quality Protection Standard shall be submitted for review and approval.

The Water Quality Protection Standard shall:

- a. Identify **all distinct bodies of surface and groundwater** that could be affected in the event of a release from a Unit or portion of a Unit. This list shall include at least the uppermost aquifer and any permanent or ephemeral zones of perched groundwater underlying the facility.
- b. Include a map showing the monitoring points and background monitoring points for the groundwater monitoring program. The map shall include the point of compliance in accordance with §20405 of Title 27.
- c. Evaluate the perennial direction(s) of groundwater movement within the uppermost groundwater zone(s).

If subsequent sampling of the background monitoring point(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste management activities at the site, the Discharger may request modification of the Water Quality Protection Standard.

### 2. Constituents of Concern

The constituents of concern include all the waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the Unit. The constituents of concern for all Units at the facility are those listed in the tables for each monitored medium.

### 3. Monitoring Parameters

Monitoring parameters are constituents of concern that are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a

reliable indication of a release from a Unit. The monitoring parameters for all Units are those listed in the tables for each monitored medium.

#### **4. Monitoring Points**

Monitoring Points for groundwater and surface water detection monitoring shall be as follows, and as shown on Attachment B:

Groundwater: Background: MW-1A and MW-1B  
Detection: MW-2 and MW-3

Surface Water: Background: SW-1  
Detection: SW-2

#### **5. Concentration Limits**

For a naturally occurring constituent of concern, the concentration limit for each constituent of concern shall be determined as follows:

- a. By calculation in accordance with a statistical method pursuant to §20415(e)(8) of Title 27; or
- b. By an acceptable alternate statistical method in accordance with §20415(e)(8)(E) of Title 27.

Concentration Limits shall be based a set of background monitoring data adequate for the statistical analysis to be used.

#### **6. Point of Compliance**

The point of compliance for the Concentration Limits at each Unit is a vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit.

#### **7. Compliance Period**

The Compliance period is the number of years equal to the active life of the surface impoundments plus the closure period. Each time the Water Quality Protection Standard is exceeded (i.e., a release is discovered), the surface impoundments begins a Compliance Period on the date the Regional Water Board directs the Dischargers to begin an Evaluation Monitoring Program. If the Discharger's Corrective Action Program (CAP) has not achieved compliance with the Standard by

the scheduled end of the Compliance Period, the Compliance Period is automatically extended until the surface impoundments has been in continuous compliance for at least three consecutive years.

A letter transmitting the self-monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain a statement by the discharger, or the discharger's authorized agent, under penalty of perjury, that to the best of the signer's knowledge the report is true, accurate, and complete.

The Dischargers shall implement the above monitoring program on the effective date of this Order.

Ordered by: \_\_\_\_\_  
PAMELA C. CREEDON, Executive Officer

\_\_\_\_\_  
(Date)

WLB: 12/5/2007