

Wyoming Department of Environmental Quality  
Water Quality Division  
WYPDES Program

STATEMENT OF BASIS

MAJOR MODIFICATION

APPLICANT NAME: Bill Barrett Corporation

MAILING ADDRESS: 190L Energy Ct., Suite 170  
Gillette, WY 82718

FACILITY LOCATION: BBC Dead Horse Creek Option 2, which is located in the NENW of Section 2, the SWNW of Section 1, and the NENW of Section 12, all in Township 47 North, Range 75 West; and in the SWNW, and SWSW of Section 6 Township 47 North, Range 74 West in Campbell County. The produced water will be discharged into seven on-channel reservoirs (class 3B) located in ephemeral tributaries (class 3B) to Dead Horse Creek (class 3B), which is tributary to the Powder River (class 2ABWW). The wells at this facility will discharge effluent originating from the Big George and Wyodak coal seams.

NUMBER: WY0052299

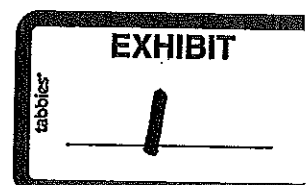
*The following Statement of Basis only includes information that has changed with this modification. For a complete Statement of Basis, please see previously issued modifications or renewals for this permit.*

*The terms of permit WY0052299 are hereby modified as follows:*

1. *Update irrigation protection limits and monitoring requirements to WDEQ drainage standards.*
2. *Remove ICPI.*
3. *Correct outfall 005 to its as-built location.*

*With the exception of items explicitly delineated in this major modification, all terms and conditions of Permit No. WY0052299, including Parts II and III of the renewed permit, shall remain unchanged and in full force and effect.*

For the on-channel discharges at this facility (outfalls 003,005,008,011, and 013), the permittee will be required to contain all produced water within a series of on-channel reservoirs during "dry" operating conditions. The permittee is authorized to release discharge from upstream on-channel reservoirs only. Water released from the upstream reservoirs will be allowed to cascade down to the lowermost on-channel reservoirs, identified as follows: "Dead Horse" and "35-1". This permit prohibits discharge of effluent from the lowermost reservoirs except during periods of time in which natural precipitation causes the lowermost reservoirs to overtop and spill. Intentional discharges from the lowermost reservoirs will be considered a violation of this permit. Discharge from the lowermost reservoirs is limited by the permit



to natural overtopping and shall not extend beyond a 48 hour period following commencement of natural overtopping. Additional release from the lowermost reservoirs as identified above is not authorized. It is the sole responsibility of the operator to adequately demonstrate the circumstances in which reservoir discharges occurred, if requested to do so by the WYPDES Program. Reservoir and/or discharge water is to be released at a rate which does not cause significant erosion to the channel or receiving lands.

**Irrigation Use Protection:** This permit authorizes discharges from outfalls that are located above known irrigation activity in Dead Horse Creek. In order to monitor and regulate coal bed methane discharge for compliance with Chapter 1, Section 20 of the Wyoming Water Quality Rules and Regulations (protection of agricultural water supply), an end-of-pipe effluent limit for specific conductance (EC) is included in this permit. In addition, this permit requires monitoring for EC and SAR at the established irrigation monitoring point(s) (IMP1).

The Wyoming DEQ has determined that an end-of-pipe specific conductance effluent limit of 2,315 micromhos/cm is appropriate for protection of agricultural uses in the Dead Horse Creek drainage. This effluent limit was derived using soil salinity data submitted as part of a study done in conjunction with the Dead Horse Creek watershed-based permitting effort. As part of the watershed-based permitting process for the Dead Horse Creek watershed, soil sampling data was conducted on naturally irrigated lands located on the Dead Horse Creek mainstem to meet requirements for a Tier 2 study as established under the Agricultural Use Protection Policy. The soil sampling was conducted in August, 2007 by KC Harvey personnel; a representative from the WYPDES Program supervised the soil sampling and managed custody of the samples for delivery to the laboratories.

The end-of-pipe specific conductance limit of 2,315 micromhos/cm was derived through evaluation of the average soil electrical conductivity in the sampled irrigated fields. The average soil EC within the irrigated areas was measured at 4,111 micromhos/cm, with a 95 % confidence interval of +/- 635 micromhos/cm. This means that while the sampled population indicates a mean soil EC of 4,111 micromhos/cm, the actual mean soil EC for all fields likely falls within the range of 3,475 to 4,746 micromhos/cm. For the purpose of introducing a margin of conservatism into the irrigation effluent limit calculations for this permit, the lower value (3,475 micromhos/cm) was assumed to be the actual mean soil EC for the downstream irrigated fields. In calculating an end-of-pipe effluent limit for EC that will maintain a mean soil EC of 3,475 micromhos/cm in the downstream irrigated fields, USDA recommends dividing the soil EC by 1.5 to estimate allowable salinity in the applied water (*Agricultural Salinity and Drainage, Hanson et al., 1999 revision*). This results in an end-of-pipe specific conductance effluent limit of 2,315 micromhos/cm, which is established at each outfall authorized under this permit that is located upstream of irrigation activity, and is effective year-round.

As stated above, in addition to the end-of-pipe EC limit, this permit requires monitoring for EC and SAR at the designated irrigation monitoring point(s) (IMP1). The Wyoming DEQ has determined that, in this drainage, it is appropriate to establish an EC threshold at the IMP(s) that is equivalent to the calculated average soil EC within the irrigated areas (4,111 micromhos/cm, based on the studies referenced above) divided by 1.5 to estimate allowable salinity in the applied water (based on USDA recommendation cited above). This results in an instream EC threshold of 2,740 micromhos/cm at the IMP(s), which represents the estimated background salinity of the historically-applied irrigation water in the Dead Horse Creek drainage, and therefore is the target water quality value that the Wyoming DEQ has determined should be achieved at the IMP(s). The permittee will be required to monitor at the irrigation monitoring point(s) downstream of the on-channel reservoirs at this facility for compliance with the 2,740 micromhos/cm threshold, as well as for compliance with a chemical relationship between EC and SAR, described in detail below under "Monitoring and Reporting Requirements".

**Monitoring and Reporting Requirements:** The permit requires daily monitoring on the receiving stream below the outfalls in order to determine whether effluent discharged from the outfalls reaches the established irrigation monitoring point(s) (IMP1, listed in Table 1 of the permit below). Daily monitoring is necessary because the permit establishes different sampling and analysis requirements based on whether the effluent reaches the irrigation monitoring point(s). Once effluent flow at the irrigation monitoring point(s) has been documented within a sampling month, then weekly monitoring of flow at the IMP(s) is required for the remainder of that calendar month. At the beginning of each calendar month, the monitoring frequency will revert to daily until such time as effluent flow occurs at the irrigation monitoring point(s) and a sample is collected to represent effluent quality for irrigation monitoring point constituents. Results are to be reported twice-yearly and if no effluent from this facility reaches the irrigation monitoring point(s) during an entire sampling month, then "no discharge" is to be reported for the IMP that month. The IMP is not a compliance point. It is intended only as a location to gather downstream water quality data.

Data collected at locations IMP1 will be evaluated by WDEQ on an ongoing basis in order to determine if effluent from this facility conforms to the following chemical characteristics at the IMP location:

$$EC < 2,740 \text{ micromhos/cm } (= 2.74 \text{ dS/m})$$

and

$$*SAR < 7.10 \times EC - 2.48$$

(\*where "SAR" represents sodium adsorption ratio, and "EC" represents specific conductance of the IMP sample in dS/m).

In the event that overtopping or a release from a reservoir that receives discharges from the permittee's outfall(s) is contributing to flow at station IMP1 or IMP2, and the IMP sample exceeds the SAR threshold listed above, then WDEQ may re-open the permit and add an effluent limit for SAR at the outfall(s) discharging to such reservoir. In any case, where the IMP samples (minimum of 5 samples) exceed the above SAR threshold in 50% or more of the sampled flow events during any continuous 12-month period, then, upon written notification to the permittee, the above SAR threshold ( $SAR < 7.10 \times EC - 2.48$ ) will automatically become an effluent limit at each outfall discharging to such reservoir.

Renewal:  
Kathy Shreve  
Water Quality Division  
Department of Environmental Quality  
Drafted: November 3, 2004

Renewal:  
Dena Hicks  
Water Quality Division  
Department of Environmental Quality  
Drafted: June 14, 2007

Major Modification:  
Bob Alexander  
Water Quality Division  
Department of Environmental Quality  
Drafted: July 21, 2008

AUTHORIZATION TO DISCHARGE UNDER THE  
WYOMING POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, (hereinafter referred to as "the Act"), and the Wyoming Environmental Quality Act,

Bill Barrett Corporation

is authorized to discharge from the wastewater treatment facilities serving the

BBC Dead Horse Creek Option 2,

located in

the NENW of Section 2, the SWNW of Section 1, and the NE:NW of Section 12, all in Township 47 North, Range 75 West; and in the SWNW, and SWSW of Section 6 Township 47 North, Range 74 West in Campbell County

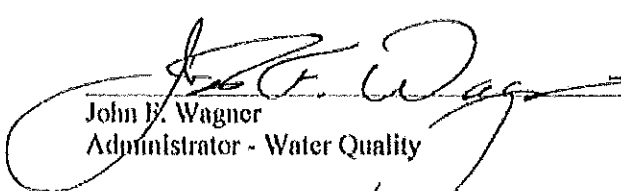
to receiving waters named

seven on-channel reservoirs (class 3B) located in ephemeral tributaries (class 3B) to Dead Horse Creek (class 3B), which is tributary to the Powder River (class 2A3WW)

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II and III hereof.

This major modification shall become effective on the date of signature by the Director of the Department of Environmental Quality. With the exception of items explicitly delineated in this major modification, all terms and conditions of WY0052299, including Part III of the renewed permit, shall remain in full force and effect.

This permit and the authorization to discharge shall expire November 30, 2010, at midnight .

  
John E. Wagner  
Administrator - Water Quality

Date

11/19/08

  
John V. Corn  
Director - Department of Environmental Quality

Date

11/25/08

**PART I**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

Effective immediately and lasting through November 30, 2010, the quality of effluent discharged by the permittee shall, at a minimum, meet the limitations set forth below. The permittee is authorized to discharge from outfall serial numbers 003, 005, 008, 011 and 013.

1. Such discharges shall be limited as specified below:

Effluent Limits

| <u>Effluent Characteristic</u>     | <u>Daily Maximum Outfall</u> |
|------------------------------------|------------------------------|
| Chlorides, mg/l                    | 150                          |
| Dissolved Iron, µg/l               | 1000                         |
| pH, standard units                 | 6.5 – 9.0                    |
| Specific Conductance, micromhos/cm | 2315                         |
| Total Recoverable Arsenic, µg/l    | 8.4                          |
| Total Recoverable Barium, µg/l     | 1800                         |

Note: 1) 'Dissolved' value for metals refers to the amount that will pass through a 0.45 µm membrane filter prior to acidification to 1.5-2.0 with Nitric Acid.

The pH shall not be less than 6.5 standard units nor greater than 9.0 standard units in any single grab sample.

For the on-channel discharges at this facility (outfalls 003,005,008,011, and 013), the permittee will be required to contain all produced water within a series of on-channel reservoirs during "dry" operating conditions. The permittee is authorized to release discharge from upstream on-channel reservoirs only. Water released from the upstream reservoirs will be allowed to cascade down to the lowermost on-channel reservoirs, identified as follows: "Dead Horse" and "35-1". This permit prohibits discharge of effluent from the lowermost reservoirs except during periods of time in which natural precipitation causes the lowermost reservoirs to overtop and spill. Intentional discharges from the lowermost reservoirs will be considered a violation of this permit. Discharge from the lowermost reservoirs is limited by the permit to natural overtopping and shall not extend beyond a 48 hour period following commencement of natural overtopping. Additional release from the lowermost reservoirs as identified above is not authorized. It is the sole responsibility of the operator to adequately demonstrate the circumstances in which reservoir discharges occurred, if requested to do so by the WYPDES Program. Reservoir and/or discharge water is to be released at a rate which does not cause significant erosion to the channel or receiving lands.

The permittee may discharge effluent from any authorized well to any permitted outfall, as long as all permit limits and requirements can be met. The produced water being discharged at this facility must originate from the Big George and/or Wyodak coal seams.

Information gathered from the water quality monitoring station and irrigation monitoring point may result in modification of the permit, in accordance with Part III.A.3 of the permit below, to protect existing uses on the tributary and the mainstem.

There shall be no discharge of floating solids or visible foam in other than trace amounts, nor shall the discharge cause formation of a visible sheen or visible hydrocarbon deposits on the bottom or shoreline of the receiving water.

All waters shall be discharged in a manner to prevent erosion, scouring, or damage to stream banks, stream beds, ditches, or other waters of the state at the point of discharge. In addition, there shall be no deposition of substances in quantities which could result in significant aesthetic degradation, or degradation of habitat for aquatic life, plant life or wildlife; or which could adversely affect public water supplies or those intended for agricultural or industrial use.

**2. Discharges shall be monitored by the permittee as specified below:**

*If outfalls have already been sampled and analyzed for initial monitoring constituents, the permittee is not required to re-sample and re-analyze the outfalls if results have been obtained for all the constituents listed below and reported to the WDEQ.*

**a. Monitoring of the initial discharge**

Within 60 days of commencement of discharge, a sample shall be collected from each outfall and analyzed for the constituents specified below, at the required detection limits. Within 120 days of commencement of discharge, a summary report on the produced water must be submitted to the Wyoming Department of Environmental Quality and the U.S. EPA Region 8 at the addresses listed below. This summary report must include the results and detection limits for each of the constituents listed below. In addition, the report must include written notification of the established location of the discharge point (refer to Part I.B.11). This notification must include a confirmation that the location of the established discharge point(s) is within 1,510 feet of the location of the identified discharge point(s), is within the same drainage, and discharges to the same landowner's property as identified on the original application form. The legal description and location in decimal degrees of the established discharge point(s) must also be provided. After receiving the monitoring results for the initial discharge, the routine monitoring requirements described in Part I.A.5.b. may be modified to require more stringent monitoring.

| <u>Parameter</u>   | <u>Required Detection Limit</u> | <u>Sample Type</u> |
|--------------------|---------------------------------|--------------------|
| Dissolved Aluminum | 50 µg/l                         | Grab               |
| Dissolved Cadmium  | 0.1 µg/l                        | Grab               |
| Dissolved Calcium  | as mg/l                         | Grab               |
| Chloride           | 5 mg/l                          | Grab               |

| <u>Parameter</u>             | <u>Required Detection Limit</u> | <u>Sample Type</u> |
|------------------------------|---------------------------------|--------------------|
| Dissolved Copper             | 1 µg/l                          | Grab               |
| Dissolved Iron               | 30 µg/l                         | Grab               |
| Dissolved Manganese          | 10 µg/l                         | Grab               |
| Total Hardness               | 10 mg/l as CaCO <sub>3</sub>    | Grab               |
| Dissolved Lead               | 2 µg/l                          | Grab               |
| Dissolved Magnesium          | as mg/l                         | Grab               |
| Dissolved Mercury            | 0.06 µg/l                       | Grab               |
| pH                           | to 0.1 pH unit                  | Grab               |
| Total Recoverable Radium 226 | 0.2 pCi/l                       | Grab               |
| Total Recoverable Selenium   | 5 µg/l                          | Grab               |
| Dissolved Sodium             | as mg/l                         | Grab               |
| Sodium Adsorption Ratio      | not applicable                  | Calculated         |
| Specific Conductance         | 5 micromhos/cm                  | Grab               |
| Sulfates                     | 10 mg/l                         | Grab               |
| Total Alkalinity             | 1 mg/l as CaCO <sub>3</sub>     | Grab               |
| Total Recoverable Arsenic    | 1 µg/l                          | Grab               |
| Total Recoverable Barium     | 100 µg/l                        | Grab               |
| Dissolved Zinc               | 10 µg/l                         | Grab               |
| Bicarbonate                  | 1 mg/l                          | Grab               |
| Total Dissolved Solids       | 5 mg/l                          | Grab               |

Initial monitoring reports are to be sent to the following addresses:

Planning and Targeting Program, 8ENF-PT  
Office of Enforcement, Compliance, and Environmental Justice  
U.S. EPA Region 8  
1595 Wynkoop Street  
Denver, CO 80202-1129

and

Wyoming Department of Environmental Quality  
Water Quality Division  
Herschler Building, 4 West  
122 West 25th Street  
Cheyenne, WY 82002

**b. Routine monitoring End of Pipe (003, 005, 008, 011 and 013)**

For the duration of the permit, at a minimum, samples for the constituents described below shall be collected at the indicated frequencies. The first routine monitoring for the time frame during which the monitoring of initial discharge occurs will, at a minimum, consist of flow measurements for the duration of the six-month monitoring time frame. Reporting



will be based on semi-annual time frames, from January through June, and from July through December.

| <u>Parameter</u>                     | <u>Measurement Frequency</u> | <u>Sample Type</u> |
|--------------------------------------|------------------------------|--------------------|
| Bicarbonate (mg/l)                   | Annually                     | Grab               |
| Dissolved Calcium (mg/l)             | Monthly                      | Grab               |
| Chloride (mg/l)                      | Annually                     | Grab               |
| Dissolved Iron (µg/l)                | Annually                     | Grab               |
| Dissolved Magnesium (mg/l)           | Monthly                      | Grab               |
| pH (standard units)                  | Once Every Six Months        | Grab               |
| Dissolved Sodium (mg/l)              | Monthly                      | Grab               |
| Sodium Adsorption Ratio (unadjusted) | Monthly                      | Calculated         |
| Specific Conductance (micromhos/cm)  | Monthly                      | Grab               |
| Total Alkalinity (mg/l)              | Annually                     | Grab               |
| Total Recoverable Arsenic (µg/l)     | Annually                     | Grab               |
| Total Recoverable Barium (µg/l)      | Annually                     | Grab               |
| Total Flow - (MGD)                   | Monthly                      | Continuous         |

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): At the outfall of the final treatment unit which is located out of the natural drainage and prior to admixture with diluent waters.

c. **Irrigation Monitoring Point (IMP1)**

Effective immediately and lasting through permit expiration, at a minimum, samples for the constituents described below shall be collected at the indicated frequencies when water discharged from the outfalls reaches the irrigation monitoring point. Monitoring will be based on monthly time frames and reported semi-annually.

| <u>Parameter</u>   | <u>Measurement Frequency</u> | <u>Sample Type</u> |
|--|------------------------------|--------------------|
| Dissolved Calcium, mg/l  | Monthly                      | Grab               |
| Dissolved Magnesium, mg/l  | Monthly                      | Grab               |
| Dissolved Sodium, mg/l   | Monthly                      | Grab               |
| Sodium Adsorption Ratio, unitless – calculated as unadjusted for bicarbonate ratio | Monthly                      | Calculated         |

| <u>Parameter</u>                          | <u>Measurement Frequency</u> | <u>Sample Type</u> |
|---|------------------------------|--------------------|
| Specific Conductance, $\mu\text{mhos/cm}$ | Monthly                      | Grab               |
| Bicarbonate, mg/l as $\text{CaCO}_3$      | Monthly                      | Grab               |
| Flow, MGD                                 | Monthly                      | Instantaneous      |

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at the irrigation monitoring point which is located as described in Table 1, Part I.B.12 of the permit.

The permit requires daily monitoring on the receiving stream below the outfalls in order to determine whether effluent discharged from the outfalls reaches the established irrigation monitoring point(s) (IMP1, listed in Table 1 of the permit below). Daily monitoring is necessary because the permit establishes different sampling and analysis requirements based on whether the effluent reaches the irrigation monitoring point(s). Once effluent flow at the irrigation monitoring point(s) has been documented within a sampling month, then weekly monitoring of flow at the IMP(s) is required for the remainder of that calendar month. At the beginning of each calendar month, the monitoring frequency will revert to daily until such time as effluent flow occurs at the irrigation monitoring point(s) and a sample is collected to represent effluent quality for irrigation monitoring point constituents. Results are to be reported twice-yearly and if no effluent from this facility reaches the irrigation monitoring point(s) during an entire sampling month, then "no discharge" is to be reported for the IMP that month. The IMP is not a compliance point. It is intended only as a location to gather downstream water quality data.

Data collected at locations IMP1 will be evaluated by WDEQ on an ongoing basis in order to determine if effluent from this facility conforms to the following chemical characteristics at the IMP location:

$$\text{EC} < 2,740 \text{ micromhos/cm } (= 2.74 \text{ dS/m})$$

and

$$*\text{SAR} < 7.10 \times \text{EC} - 2.48$$

(\*where "SAR" represents sodium adsorption ratio, and "EC" represents specific conductance of the IMP sample in dS/m).

In the event that overtopping or a release from a reservoir that receives discharges from the permittee's outfall(s) is contributing to flow at station IMP1, and the IMP sample exceeds the SAR threshold listed above, then WDEQ may re-open the permit and add an effluent limit for SAR at the outfall(s) discharging to such reservoir. In any case, where the IMP samples (minimum of 5 samples) exceed the above SAR threshold in 50% or more of the sampled flow events during any continuous 12-month period, then, upon written notification to the permittee, the above SAR threshold ( $\text{SAR} < 7.10 \times \text{EC} - 2.48$ ) will automatically become an effluent limit at each outfall discharging to such reservoir.

e. **Water Quality Monitoring Stations TRIB1, UPR, DPR**

For the duration of the permit, at a minimum, samples for the constituents described below shall be collected at the indicated frequencies. Monitoring will be based on monthly time frames, and reported semiannually.

| <b><u>Parameter</u></b>                                     | <b><u>Measurement Frequency</u></b> | <b><u>Sample Type</u></b> |
|---|-------------------------------------|---------------------------|
| Dissolved Calcium (mg/l)                                    | Monthly                             | Grab                      |
| Dissolved Magnesium (mg/l)                                  | Monthly                             | Grab                      |
| Dissolved Sodium (mg/l)                                     | Monthly                             | Grab                      |
| Sodium Adsorption Ratio<br>(calculated as unadjusted ratio) | Monthly                             | Calculated                |
| Specific Conductance<br>(micromhos/cm)                      | Monthly                             | Grab                      |
| Flow* (MGD)   | Monthly                             | Instantaneous             |

\*The permittee is only required to monitor and report flow at the tributary monitoring station (TRIB1). The permittee is not required to monitor or report flow data at the mainstem water quality monitoring stations (UPR and DPR), see Table 1, Part I.B.12 for location descriptions.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations: designated water quality monitoring stations identified as TRIB1, UPR, and DPR in Table 1 (located at the end of Part I) of the permit below. Established water quality monitoring stations on the mainstem are to be located outside the mixing zone with the tributary and the mainstem. Monthly water quality samples are to be collected at all three water quality monitoring stations when effluent from this CBM facility reaches the TRIB1 station. If flow occurs at the TRIB1 station during a given monthly monitoring period, but this CBM facility did not contribute to that flow, the permittee will report "did not contribute" in the discharge monitoring reports for that monthly monitoring period. Under such circumstances, sampling is not required at the three water quality monitoring stations, and it will be the responsibility of the permittee to demonstrate that the effluent from this facility did not contribute to the flow occurring at the TRIB1 station. If no flow at all occurs at the TRIB1 station for an entire monthly monitoring period, then "no flow" is to be reported and samples need not be collected at the three water quality monitoring stations for that monthly monitoring period.

B. **MONITORING AND REPORTING**

1. **Representative Sampling**

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points shall not be changed without notification to and approval by, the permit issuing authority.

2. **Reporting**

Results of initial monitoring, including the date the discharge began, shall be summarized on a Monitoring Report Form for Monitoring of Initial Discharge and submitted to the state water pollution control agency at the address below postmarked no later than 120 days after the commencement of discharge.

Results of routine end of pipe and water quality station monitoring during the previous six (6) months shall be summarized and reported semiannually on a Discharge Monitoring Report Form (DMR). If the discharge is intermittent, the date the discharge began and ended must be included. The information submitted on the first semiannual DMR shall contain a summary of flow measurements and any additional monitoring conducted subsequent to the submittal of the initial monitoring report. If required, whole effluent toxicity testing (biomonitoring) results must be reported on the most recent version of EPA Region VIII's Guidance for Whole Effluent Reporting. Monitoring reports must be submitted to the state water pollution control agency at the following address postmarked no later than the 15th day of the second month following the completed reporting period. The first report following issuance of this renewal is due by February 15, 2008.

Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with the Signatory Requirements contained in Part II.A.11.

Wyoming Department of Environmental Quality  
Water Quality Division  
Herschler Building, 4 West  
122 West 25th Street  
Cheyenne, WY 82002  
Telephone: (307) 777-7781

If no discharge occurs during the reporting period, "no discharge" shall be reported. If discharge is intermittent during the reporting period, sampling shall be done while the facility is discharging.

**3. Definitions**

- a. The "monthly average" shall be determined by calculating the arithmetic mean (geometric mean in the case of fecal coliform) of all composite and/or grab samples collected during a calendar month.
- b. The "weekly average" shall be determined by calculating the arithmetic mean (geometric mean in the case of fecal coliform) of all composite and/or grab samples collected during any week.
- c. The "daily maximum" shall be determined by the analysis of a single grab or composite sample.
- d. "MGD", for monitoring requirements, is defined as million gallons per day.

- e. "Net" value, if noted under Effluent Characteristics, is calculated on the basis of the net increase of the individual parameter over the quantity of that same parameter present in the intake water measured prior to any contamination or use in the process of this facility. Any contaminants contained in any intake water obtained from underground wells shall not be adjusted for as described above and, therefore, shall be considered as process input to the final effluent. Limitations in which "net" is not noted are calculated on the basis of gross measurements of each parameter in the discharge, irrespective of the quantity of those parameters in the intake waters.
- f. A "composite" sample, for monitoring requirements, is defined as a minimum of four grab samples collected at equally spaced two hour intervals and proportioned according to flow.
- g. An "instantaneous" measurement for monitoring requirements is defined as a single reading, measurement, or observation.
- h. A "pollutant" is any substance or substances which, if allowed to enter surface waters of the state, causes or threatens to cause pollution as defined in the Wyoming Environmental Quality Act, Section 35-11-103.
- i. "Total Flow" is the total volume of water discharged, measured on a continuous basis and reported as a total volume for each month during a reporting period. The accuracy of flow measurement must comply with Part III.A.1.

**4. Test Procedures**

Test procedures for the analysis of pollutants, collection of samples, sample containers, sample preservation, and holding times, shall conform to regulations published pursuant to 40 CFR, Part 136, unless other test procedures have been specified in this permit.

**5. Recording of Results**

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

- a. The exact place, date and time of sampling;
- b. The dates and times the analyses were performed;
- c. The person(s) who performed the analyses and collected the samples;
- d. The analytical techniques or methods used; and
- e. The results of all required analyses including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine the results.

6. **Additional Monitoring by Permittee**

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form. Such increased frequency shall also be indicated.

7. **Records Retention**

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report or application. This period may be extended by request of the administrator at any time. Data collected on site, copies of Discharge Monitoring Reports and a copy of this WYPDES permit must be maintained on site during the duration of activity at the permitted location.

8. **Penalties for Tampering**

The Act provides that any person who falsifies, tampers with or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by Imprisonment for not more than two years per violation, or both.

9. **Compliance Schedules**

Reports of compliance or noncompliance with, or any progress reports on interim and final requirements contained in any Compliance Schedule of this permit shall be submitted no later than 14 days following each schedule date.

10. **Facility Identification**

All facilities discharging produced water shall be clearly identified with an all-weather sign posted at each outfall, and at the outlet of each receiving reservoir listed in Table 1 below. This sign shall, at a minimum, convey the following information:

- a. The name of the company, corporation, person(s) who holds the discharge permit, and the WYPDES permit number;
- b. The contact name and phone number of the person responsible for the records associated with the permit;
- c. The name of the facility (as identified in this WYPDES permit). In addition, all outfall signs will include the outfall number. Reservoir signs are separate from the outfall signs, and are to be located at the outlet of the reservoir. Reservoir signs must include the information listed in items a and b above, in addition to the reservoir name, as identified in Table 1 below.

11. **Identification and Establishment of Discharge Points**

According to 40 CFR 122.21(k)(1), the permittee shall identify the expected location of each discharge point on the appropriate WYPDES permit application form. The location of the discharge point must be identified to within an accuracy of 15 seconds. This equates to a distance of 1,510 feet.

In order for the permit not to be subjected to additional public notice, the location of the established discharge point must be within 1,510 feet of the location of the discharge point originally identified on the permit application. In addition, the discharge must be within the same drainage and must discharge to the same landowner's property as identified on the original application form. If the three previously stated requirements are not satisfied, modification of the discharge point location(s) constitutes a major modification of the permit. The permittee shall provide written notification of the establishment of each discharge point in accordance with Part I.A.5.a above.

12. **Location of Discharge Points, Irrigation Compliance Points, and Water Quality Monitoring Stations**

As of the date of permit issuance, authorized points of discharge were as follows:

SEE TABLE 1 FOR A LIST OF OUTFALLS, IRRIGATION COMPLIANCE  
POINTS, AND WATER QUALITY MONITORING STATIONS

Table 1: WY0052299 - BBC Dead Horse Creek Option 2

| Out-fall | Qtr/Qtr | SEC-TION | TWP (N) | RNG (W) | LATITUDE | LONGITUDE  | Drainage / Description   | Groundwater Approval Required Prior to Discharge? | Reservoir Bond to WDEQ Required prior to Discharge? |
|----------|---------|----------|---------|---------|----------|------------|--|---|---|
| 003      | NENW    | 2        | 47      | 75      | 44.08283 | -105.84455 | Discharges to on-channel "2-1 Reservoir" and "35-1 Reservoir" in "UET to Dead Horse Creek"               | Yes   | No  |
| 005      | SWNW    | 1        | 47      | 75      | 44.08071 | -105.82803 | Discharges to on-channel "P1-2 Reservoir" and "Dead Horse Reservoir" in "UET to Dead Horse Creek"        | Yes   | Yes:Dead Horse                                      |
| 008      | NENW    | 12       | 47      | 75      | 44.07087 | -105.82272 | Discharges to on-channel "P1-2 Reservoir" and "Dead Horse Reservoir" in "UET to Dead Horse Creek"        | Yes   | Yes:Dead Horse                                      |
| 011      | SWNW    | 6        | 47      | 74      | 44.08114 | -105.80740 | Discharges to on-channel "6-1 Reservoir" and "Dead Horse Reservoir" in "UET to Dead Horse Creek"         | Yes   | Yes:Dead Horse                                      |
| 013      | SWSW    | 6        | 47      | 74      | 44.07291 | -105.80924 | Discharges to on-channel "P1-1 Reservoir", "1-1 Reservoir" and "Dead Horse" in "UET to Dead Horse Creek" | Yes   | Yes:Dead Horse                                      |
| IMP1     | SENE    | 27       | 48      | 75      | 44.11072 | -105.85243 | Irrigation Monitoring Point on Dead Horse Creek (Serves outfalls 003, 005, 008, 011 & 013)               | NA  | NA  |
| TRIB1    | NESE    | 16       | 49      | 77      | 44.21737 | -106.11887 | Tributary monitoring station on Dead Horse Creek   | NA  | NA  |
| UPR      | SWSW    | 17       | 49      | 77      | 44.21598 | -106.15503 | Upstream Powder River monitoring station (above Dead Horse Creek)  | NA  | NA  |
| DPR      | SWSE    | 32       | 50      | 77      | 44.25689 | -106.14790 | Downstream Powder River monitoring station (below Dead Horse Creek)                                      | NA  | NA  |

\* UET=Unnamed ephemeral tributary

The outfalls listed in the above table may be moved from the established location without submittal of a permit modification application provided all of the following conditions are satisfied:

1. The new outfall location is within 2640 feet of the established outfall location.
2. The new outfall location is within the same drainage or immediate permitted receiving waterbody.
3. There is no change in the affected landowners.
4. Notification of the change in outfall location must be provided to the WYPDES Permits Section on a form provided by the WQD Administrator within 10 days of the outfall location change. The form must be provided in duplicate and legible maps showing the previous and new outfall location must be attached to the form.

Moving an outfall location without satisfying the four above listed conditions will be considered a violation of this permit and subject to full enforcement authority of the WQD.

Outfall relocation as described above will not be allowed if the new outfall location is less than one mile from the confluence of a Class 2 waterbody and the dissolved iron limits established in the permit for the outfall are based upon Class 3 standards.



Requests for modification of the above list will be processed as follows. If the requested modification satisfies the definition of a minor permit modification as defined in 40 CFR 122.63 modifications will not be required to be advertised in a public notice. A minor modification constitutes a correction of a typographical error, increase in monitoring and/or reporting, revision to an interim compliance schedule date, change in ownership, revision of a construction schedule for a new source discharger, deletion of permitted outfalls, and/or the incorporation of an approved local pretreatment program.

A request for a minor modification must be initiated by the permittee by completing the form titled Wyoming Pollutant Discharge Elimination System Permit Modification Application for Coal Bed Methane. Incomplete application forms will be returned to the applicant.

C. RESERVOIR / IMPOUNDMENT REQUIREMENTS

1. Groundwater Monitoring Beneath Impoundments:

Table 1 of the permit above identifies which outfalls (if any) are designed to discharge into impoundments that are subject to groundwater monitoring requirements established in the latest version of the Water Quality Division guideline "*Compliance Monitoring for Groundwater Protection Beneath Unlined Coalbed Methane Produced Water Impoundments.*" These specified outfalls are not authorized to discharge until a written groundwater compliance approval has been granted by the Groundwater Pollution Control Program of the Water Quality Division. A groundwater compliance approval will consist of either a final approved groundwater compliance monitoring plan, or written authorization for an exemption thereof. Once an impoundment has been granted a written groundwater compliance approval, the contributing outfall(s) to that reservoir may commence discharge.

2. Reclamation Performance Bonds for On-Channel Reservoirs:

Table 1 of the permit above also identifies which outfalls (if any) are designed to discharge into impoundments that are subject to WDEQ bonding requirements, as set forth in the latest version of the Water Quality Division guideline "*Implementation Guidance for Reclamation and Bonding of On-Channel Reservoirs That Store Coalbed Natural Gas Produced Water.*" These specified outfalls are not authorized to discharge until the associated reservoir reclamation bond is approved by WDEQ. Once the reservoir reclamation bond is approved by WDEQ, the contributing outfall(s) to that reservoir may commence discharge.

Any discharge into an above-listed impoundment which has not been secured by the required WDEQ-approved bond, or which has not been granted the required groundwater compliance approval, will constitute a violation of this permit, and may result in enforcement action from the Water Quality Division.