

BEFORE THE ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING

FILED
JUN 15 2009

Jim Ruby, Executive Secretary
Environmental Quality Council

In the Matter of the Appeal of Clabaugh)
Ranch, Inc. Regarding Permit) Docket Nos. 09-3803 and 09-3804
WY0039616 and WY0039519) (consolidated Docket No. 09-3803)
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)
)

**JOINT STIPULATION FOR MODIFICATION OF WYPDES PERMIT NOS.
WY0039519 AND WY0039616**

The Wyoming Department of Environmental Quality (DEQ) renewed WYPDES Permit Nos. WY0039616 and WY0039519 on or about December 31, 2008 authorizing Pennaco energy, Inc. to discharge water produced from its coal bed methane operations into on-channel reservoirs in Wild Horse Creek drainage. On February 13, 2009, Clabaugh Ranch, Inc. (Clabaugh) filed Petitions requesting the Wyoming Environmental Quality Council (Council) reverse DEQ's decisions to grant these permits. DEQ, Pennaco and Clabaugh (the Parties) are the only parties to this contested case before the Council. The Clabaugh Petitions were consolidated into Docket No. 09-3803 by Order dated April 21, 2009.

Chapter 1, Section 11(a) of the DEQ Rules of Practice and Procedure provides for disposition of contested cases by stipulation of the parties upon approval of the Council. For purposes of this case, W.S. § 35-11-112(c)(ii) authorizes the Council to order that a permit be modified, subject to applicable state and federal law.

The Parties have reached agreement on terms for disposition of this matter prior to hearing. The parties further agree that the Joint Stipulation and Order in this case is not intended to be considered as precedent or binding on DEQ in future permit applications or appeals.

The Parties jointly stipulate to the entry of the attached Proposed Order by the Council:

1. Approving and binding the parties, their successors and assigns to the terms of this Joint Stipulation, including the following modifications to WYPDES Permit No.

WY0039616:

a. Inserting the following replacement language in the (1) Permit Renewal, Statement of Basis, Page 2, second paragraph under "Facility Description" and (2) Permit Renewal, Page 2, Part I.A.1., second to last paragraph on page:

The permittee is required to contain all effluent from outfalls in the on-channel reservoirs at this facility except that if an individual reservoir must be drawn down for necessary repair or reclamation. Release from an individual reservoir for repair or reclamation purposes is permitted if prior written authorization is granted by the WYPDES program in association with use of assimilative capacity credits for the Powder River Basin, which authorization letter will specify the release volume, duration and individual reservoir(s) covered. In the absence of such written authorization for release in association with the necessary repair or reclamation of a reservoir, the following containment requirements will apply at the reservoirs: the permittee will be required to contain all produced water within a series of on-channel reservoirs during "dry" operating conditions. This permit prohibits discharge of effluent from the reservoirs except during periods of time in which natural precipitation causes the reservoirs to overtop and spill. Intentional or draw-down type releases from the reservoirs will constitute a violation of this permit. Discharge from the reservoirs is limited by the permit to natural overtopping and shall not extend beyond a 48 hour period following commencement of natural overtopping. It is the responsibility of the permittee to adequately demonstrate the circumstances in which reservoir discharges occurred, if requested to do so by the WYPDES program.

b. Inserting the following formula in place of the current formula in the (1) Permit Renewal, Statement of Basis, Page 4, and (2) Permit Renewal, Page 7, Part I.A.3.c.:

$$\text{SAR} < 6.67 \times \text{EC} - 3.33;$$

2. Approving and binding the Parties, their successors and assigns to the terms of this Joint Stipulation, including the following modifications to WYPDES Permit No.

WY0039519:

a. Inserting the following replacement language in place of (1) Permit Renewal, Statement of Basis, Page 2, second paragraph under "Facility Description" and (2) Permit, Page 2, Part I.A.1., second to last paragraph on page:

The permittee is required to contain all effluent from outfalls in the on-channel reservoirs at this facility except that if an individual reservoir must be drawn down for necessary repair or reclamation. Release from an individual reservoir for repair or reclamation purposes is permitted if prior written authorization is granted by the WYPDES program in association with use of assimilative capacity credits for the Powder River Basin, which authorization letter will specify the release volume, duration and individual reservoir(s) covered. In the absence of such written authorization for release in association with the necessary repair or reclamation of a reservoir, the following containment requirements will apply at the reservoirs: 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: "Dannine" and "Zoe". 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 or draw-down type releases from the lowermost reservoirs will constitute a violation of this permit. Discharge from the reservoirs is limited by the permit to natural overtopping and shall not extend beyond a 48 hour period following commencement of natural overtopping. It is the responsibility of the permittee to adequately demonstrate the circumstances in which reservoir discharges occurred, if requested to do so by the WYPDES program.

b. Inserting the following formula in place of the current formula in the (1) Permit Renewal, Statement of Basis, Page 4, and (2) Permit Renewal, Pages 5-6, Part I.A.3.c.:

$$\text{SAR} < 6.67 * \text{EC} - 3.33;$$

3. Ordering that the renewals of WY0039616 and WY0039519 now be modified as set forth above;

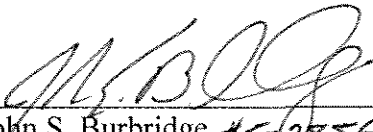
4. Dismissing Clabaugh's pending Petitions for review of the December 31, 2008 renewals of WYPDES Permit Nos. WY0039616 and WY0039519 with prejudice; and

5. Providing that each party shall bear its own costs and attorney fees through the Council's entry of such order.

Respectfully submitted June 5, 2009.



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Wyoming Department of Environmental Quality
Water Quality Division
WYPDES Program

STATEMENT OF BASIS

ADMINISTRATIVE MODIFICATION

APPLICANT NAME: Pennaco Energy, Inc.

MAILING ADDRESS: 3601 Southern Drive
Gillette, WY 82718

FACILITY LOCATION: Felix Field CBM Area, which is located in the SWNW, NWSW of Section 19, the NENE, NESE, SWSE of Section 20, the SENW, SWSW, of Section 21, the NESE of Section 24, the NESW of Section 27, the NWNW, NWSW, SWNE, SESE, SENW of Section 28, the SWSW, NWSW, SWNE of Section 29, the NENW, NENE, SENW, NESE, NESW of Section 30, the NENE of Section 31, the SWSW, SWSE, SENE, SWNW of Section 32, the SESW, NWSW of Section 33, the NENE, NWNW of Section 34, and the NWSE of Section 35, Township 51 North, Range 74 West, all in Campbell County. The produced water will be discharged directly to thirty-four on-channel reservoirs (all are class 3B) via various unnamed ephemeral tributaries (all are class 3B), via Felix Draw (class 3B), Montgomery Draw (class 3B), and/or Wild Horse Creek (class 3B), which is tributary to the Powder River (class 2ABWW). The permit requires that the produced water being discharged from this facility originate in the Smith, Anderson, and/or Canyon coal seams.

NUMBER: **WY0039519**

At the request of the permittee, and in accordance with the settlement of EQC Docket No. 09-3803, this permit is hereby modified as follows:

- 1) Add restrictions to Part I.A.1 of the permit, pertaining to conditions for reservoir release of water.*
- 2) Modify Part I.A.3.c (irrigation monitoring point requirements) to reference updated threshold for SAR:
SAR < 6.67 x EC - 3.33*
- 3) Update Statement of Basis accordingly.*

General Description

This facility is a typical coal bed methane production facility in which groundwater is pumped from a coal bearing formation resulting in the release of methane from the coal bed. The permit authorizes the discharge to the surface of groundwater produced in this way provided the effluent quality is in compliance with effluent limits that are established by this permit. In developing effluent limits, all federal and state regulations and standards have been considered and the most stringent requirements incorporated into the permit. The EPA Effluent Guidelines and Standards for Oil and Gas Extraction Point Source Category (Part

435, Subpart E) predate the development of coal bed methane extraction technology; however the technology is similar enough to conventional gas extraction that, in the professional judgment of the WDEQ, this effluent limit guideline is appropriately applied to coal bed methane gas production. This permit does not cover activities associated with discharges of drilling fluids, acids, stimulation waters or other fluids derived from the drilling or completion of the wells.

Facility Description

The permittee has chosen option 2 of the coal bed methane permitting options for outfalls 002-030, 034-038. Under this permitting option, the produced water is immediately discharged to a class 2 or 3 receiving stream which is eventually tributary to a class 2AB perennial water of the state. The permit establishes effluent limits for the end of pipe, which are protective of all the designated uses defined in Chapter 1 of Wyoming Water Quality Rules and Regulations. This may include drinking water, game and non-game fish, fish consumption, aquatic life other than fish, recreation, agriculture, wildlife, industry and scenic value. Based on a review of this permit application and previous applications in this area, it has been determined that active irrigation uses of surface water occur downstream from the facility on Wild Horse Creek.

The permittee is required to contain all effluent from outfalls in the on-channel reservoirs at this facility except that if an individual reservoir must be drawn down for necessary repair or reclamation. Release from an individual reservoir for repair or reclamation purposes is permitted if prior written authorization is granted by the WYPDES program in association with use of assimilative capacity credits for the Powder River Basin, which authorization letter will specify the release volume, duration and individual reservoir(s) covered. In the absence of such written authorization for release in association with the necessary repair or reclamation of a reservoir, the following containment requirements will apply at the reservoirs: 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: "Dannine" and "Zoe". 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 or draw-down type releases from the lowermost reservoirs will constitute a violation of this permit. Discharge from the reservoirs is limited by the permit to natural overtopping and shall not extend beyond a 48 hour period following commencement of natural overtopping. It is the responsibility of the permittee to adequately demonstrate the circumstances in which reservoir discharges occurred, if requested to do so by the WYPDES program.

Effluent Limits and Permit Requirements

Permit effluent limits are based on federal and state regulations and are effective as of the date of issuance. Permit limits are applicable to all permitted outfalls unless otherwise indicated. The permit requires that the pH must remain within 6.5 and 9.0 standard units. The pH limit is based on water quality standards established in Chapter 2 of the *Wyoming Water Quality Rules and Regulations*, in order to protect for livestock and wildlife consumption. The permit also establishes a total recoverable barium limit of 1800 µg/l and a total recoverable arsenic limit of 8.4 µg/l. These limits are based on Water Quality Criteria as established in the *Wyoming Water Quality Rules and Regulations, Chapter 1*, for Human Health values. In addition, the permit establishes a chloride limit of 150 mg/l, which is based on Water Quality Criteria as established in the *Wyoming Water Quality Rules and Regulations, Chapter 1*, for chronic aquatic life protection values. The limits established in this permit for metals and chlorides reflect the application of the antidegradation provisions required under the *Wyoming Water Quality Rules and Regulations, Chapter 1*. In addition, the permit establishes a dissolved iron limit of 1000 µg/l. The dissolved iron effluent limit is based upon chronic aquatic life protection for class 3B waters, and does not consider the antidegradation provisions under Chapter 1 of the *Wyoming Water Quality Rules and Regulations*, as dissolved iron has been determined to be a non-persistent pollutant, and all the outfalls being authorized for discharge in this permit are located

more than one stream mile from confluence with the nearest class 2 water, in this case, the Powder River. This approach reflects current WYPDES permitting practice in regards to establishing dissolved iron effluent limits in CBM surface discharge permits. Based upon the results of the initial monitoring, this permit may be reopened and more stringent limits and/or monitoring and reporting required.

All limits described in this section are intended to protect for the above listed designated uses, on both the immediate receiving water and the perennial mainstem, and apply at the end of pipe.

Irrigation Use Protection

Irrigation Use Protection: This permit authorizes discharges from outfalls that are located above known irrigation activity in Wild Horse Creek drainage. 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 2,560 micromhos/cm is appropriate for protection of agricultural uses in the Wild Horse Creek drainage. This effluent limit was derived using soil salinity data submitted with the original application for WY0051955 (*Section 20 Compliance Analysis for Proposed Discharges by Petro-Canada to Wild Horse Creek, Campbell County, WY; KC Harvey, LLC, November 2005*) and supplemental information permit application for WY0056031 (*Section 20 Compliance Analysis for Proposed Discharges by Williams Production to Wild Horse Creek, Campbell County, WY; KC Harvey, LLC, July 2007*).

The end-of-pipe specific conductance limit of 2,560 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 4,220 micromhos/cm, with a 95 % confidence interval of +/- 369 micromhos/cm. This means that while the sampled population indicates a mean soil EC of 4,220 micromhos/cm, the actual mean soil EC for all fields likely falls within the range of 3,851 to 4,589 micromhos/cm. For the purpose of introducing a margin of conservatism into the irrigation effluent limit calculations for this permit, the lower value (3,851 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 3,851 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 2,560 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-IMP2). 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 (4,220 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 2,800 micromhos/cm at the IMP(s), which represents the estimated background salinity of the historically-applied irrigation water in the Wild 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 2,800 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-IMP2, 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(s) that month. The IMP(s) is not a compliance point. It is intended only as a location to gather downstream water quality data.

Data collected at location IMP1- IMP2 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(s) location:

$$EC < 2,800 \text{ micromhos/cm } (= 2.80 \text{ dS/m})$$

and

$$* \text{ SAR} < 6.67 \times \text{EC} - 3.33$$

(*where "SAR" represents sodium adsorption ratio, and "EC" represents specific conductance of the IMP(s) 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-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 ($\text{SAR} < 6.67 \times \text{EC} - 3.33$) will automatically become an effluent limit at each outfall discharging to such reservoir.

The permit also requires sampling at a designated tributary water quality monitoring station located on Wild Horse Creek, and at two mainstem water quality monitoring locations on the Powder River upstream and downstream of the confluence of Wild Horse Creek and the Powder River. Water quality monitoring stations on the Powder River must be located in the main channel of the Powder River outside of the mixing zone of Wild Horse Creek and the Powder River. Effluent samples at the designated water quality monitoring stations must be collected on a monthly basis and are to be reported semiannually. If flow occurs at the tributary water quality monitoring station (TRIB1, location listed in Table 1 of the permit) 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 associated mainstem 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 tributary water quality monitoring station. If no flow at all occurs at the tributary water quality monitoring station designated as "TRIB1" for an entire monthly monitoring period, then "no flow" is to be reported and samples need not be collected at the associated mainstem and tributary water quality monitoring stations for that monthly monitoring period.

Results are to be reported twice-yearly and if no discharge occurs at the outfall then "no discharge" is to be reported. The permit also requires that an initial monitoring of the effluent be conducted within the first 60 days of discharge and the results submitted to WDEQ and the U.S. Environmental Protection Agency within 120 days of the commencement of discharge.

Other Permit Requirements

Documentation submitted in support of this permit by the permittee was based upon water quality representative of water quality from the coal seams in the surrounding geographical area. Therefore, the permit requires that the produced water being discharged by this facility originate in one or more of the following formations: the Anderson, Smith and/or Canyon coal seams.

There shall be no discharge of floating solids or visible foam in other than trace amounts, nor shall the discharge cause formation of visible deposits of iron, hydrocarbons or any other constituent on the bottom or shoreline of the receiving water. In addition, erosion control measures will be implemented to prevent significant damage to or erosion of the receiving water channel at the point of discharge.

The discharge of wastewater and the effluent limits that are established in this permit have been reviewed to ensure that the levels of water quality necessary to protect the designated uses of the receiving waters are maintained and protected. An antidegradation review has been conducted and verifies that the permit conditions, including the effluent limitations established, provide a level of protection to the receiving water consistent with the antidegradation provisions of Wyoming surface water quality standards.

Self monitoring of effluent quality and quantity is required on a regular basis with reporting of results semiannually. The permit is scheduled to expire on December 31, 2012. This expiration date was determined through review of the watershed permitting schedule which the WDEQ is implementing in order to synchronize the permitting and expiration of facilities within the same watershed. This holistic approach will provide for more efficient permitting of point-source discharges.

Carrie Ferguson -- Renewal
Water Quality Division
Department of Environmental Quality
Drafted: October 6, 2008

Jason Thomas -- Administrative Modification
Water Quality Division
Department of Environmental Quality
Drafted: June 11, 2009

MODIFICATION OF 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,

Pennaco Energy, Inc.

is authorized to discharge from the wastewater treatment facilities serving the

Felix Field CBM Area,

which is located in the

SWNW, NWSW of Section 19, the NENE, NESE, SWSE of Section 20, the SENW, SWSW, of Section 21, the NESE of Section 24, the NESW of Section 27, the NWNW, NWSW, SWNE, SESE, SENW of Section 28, the SWSW, NWSW, SWNE of Section 29, the NENW, NENE, SENW, NESE, NESW of Section 30, the NENE of Section 31, the SWSW, SWSE, SENE, SWNW of Section 32, the SESW, NWSW of Section 33, the NENE, NWNW of Section 34, and the NWSE of Section 35, Township 51 North, Range 74 West, all in Campbell County,

to receiving waters named

thirty-four on-channel reservoirs (all are class 3B) via various unnamed ephemeral tributaries (all are class 3B), via Felix Draw (class 3B), Montgomery Draw (class 3B), and/or Wild Horse Creek (class 3B), which is tributary to the Powder River (class 2ABWW),

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

This permit modification shall become effective on the date of signature by the Director of the Department of Environmental Quality.

This permit and the authorization to discharge shall expire December 31, 2012, at midnight.

John F. Wagner
Administrator - Water Quality

Date

John V. Corra
Director - Department of Environmental Quality

Date

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Effective **immediately** and lasting through December 31, 2012, 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(s) serial number(s) 002-030, 034-038.

1. Such discharges shall be limited as specified below:

<u>Effluent Constituent</u>	<u>Daily Maximum, Each Outfall</u>
Chlorides, mg/l	150
Dissolved Iron, µg/l	1000
pH, standard units	6.5 – 9.0
Specific Conductance, micromhos/cm	2560
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.
- 2) 'Total' value for metals refers to the total recoverable amount of that metal in the water column.

The permittee is required to contain all effluent from outfalls in the on-channel reservoirs at this facility except that if an individual reservoir must be drawn down for necessary repair or reclamation. Release from an individual reservoir for repair or reclamation purposes is permitted if prior written authorization is granted by the WYPDES program in association with use of assimilative capacity credits for the Powder River Basin, which authorization letter will specify the release volume, duration and individual reservoir(s) covered. In the absence of such written authorization for release in association with the necessary repair or reclamation of a reservoir, the following containment requirements will apply at the reservoirs: 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: "Dannine" and "Zoe". 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 or draw-down type releases from the lowermost reservoirs will constitute a violation of this permit. Discharge from the reservoirs is limited by the permit to natural overtopping and shall not extend beyond a 48 hour period following commencement of natural overtopping. It is the responsibility of the permittee to adequately demonstrate the circumstances in which reservoir discharges occurred, if requested to do so by the WYPDES program.

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

Information gathered from the water quality monitoring stations 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. In addition, WQD may re-open and modify this permit, in accordance with Part III.A.3, in the event that additional or more stringent conditions are determined by WQD to be necessary for control of erosion downstream of the discharges within the Wild Horse Creek drainage.

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.

The produced water being discharged at this facility will originate from the Anderson, Smith, and/or Canyon coal seams.

The permittee may, if so desired, discharge produced water from any authorized well to any permitted outfall, as long as all permit limits and requirements can be met.

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.

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

a. Monitoring of the initial discharge:

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.

Within 60 days of commencement of discharge, a sample shall be collected from each outfall and analyzed for all constituents specified below, at the required detection limits. Within 120 days of commencement of discharge, a summary report, including copies of the laboratory analysis reports, 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 specified 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 effluent limits and monitoring requirements established in this permit may be modified.

Parameter* (See notes following the table on chemical states)	Required Detection Limits and Required Units
Alkalinity, Total	1 mg/l as CaCO ₃
Aluminum, Dissolved	50 µg/l
Arsenic, Total Recoverable	1 µg/l
Barium, Total Recoverable	100 µg/l
Bicarbonate	10 mg/l
Cadmium, Dissolved	5 µg/l
Calcium, Dissolved	50 µg/l, report as mg/l
Chloride	5 mg/l
Copper, Dissolved	10 µg/l
Dissolved Solids, Total	5 mg/l
Fluoride, Dissolved	100 µg/l
Hardness, Total	10 mg/l as CaCO ₃
Iron, Dissolved	50 µg/l
Lead, Dissolved	2 µg/l
Magnesium, Dissolved	100 µg/l, report as mg/l
Mercury, Dissolved	1 µg/l
pH	to 0.1 pH unit
Radium 226, Total Recoverable	0.2 pCi/l
Selenium, Total Recoverable	5 µg/l
Sodium Adsorption Ratio	Calculated as unadjusted ratio
Sodium, Dissolved	100 µg/l, report as mg/l
Specific Conductance	5 micromhos/cm
Sulfates	10 mg/l
Total Dissolved Solids	5 mg/l
Zinc, Dissolved	50 µg/l

TOTAL: Value is expressed in terms of total recoverable metal in the water column.

NOTE: Except for aquatic life values for metals and where otherwise indicated, the values given refer to the total recoverable (dissolved plus suspended) amount for each substance. For the aquatic life values for metals, the values refer to the dissolved amount.

DISSOLVED: Volume is based on the dissolved amount which is the amount that will pass through a 0.45 µm membrane filter prior to acidification to pH 1.5 - 2.0 with nitric acid.

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 –002-030, 034-038

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. Monitoring 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 Dissolved Solids (mg/l)	Monthly	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 Points (IMP1-IMP2)

For the duration of the permit, 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.

Parameter	Measurement Frequency	Sample Type
Dissolved Calcium, mg/l	Monthly	Grab
Dissolved Magnesium, mg/l	Monthly	Grab
Dissolved Sodium, mg/l	Monthly	Grab
Sodium Adsorption Ratio, unadjusted	Monthly	Calculated
Sodium Adsorption Ratio, calculated limit	Monthly	Calculated
Specific Conductance, μ mhos/cm	Monthly	Grab
Bicarbonate, mg/l as 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 points which are located as described in Table 1 of the permit below.

The permit requires daily monitoring on Wild Horse Creek below the outfalls in order to determine whether effluent discharged from the outfalls reaches an established irrigation monitoring point (IMP1- IMP2 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 an irrigation monitoring point(s). Once effluent flow at an 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 irrigation monitoring point(s) during an entire sampling month, then "no discharge" is to be reported for the IMP(s) that month. The IMP(s) is not a compliance point. It is intended only as a location to gather downstream water quality data.

Data collected at location IMP1-IMP2 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(s) location:

$$EC < 2,800 \text{ micromhos/cm } (= 2.80 \text{ dS/m})$$

and

$$* SAR < 6.67 \times EC - 3.33$$

(*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-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 ($SAR < 6.67 \times EC - 3.33$) will automatically become an effluent limit at each outfall discharging to such reservoir.

d. Water Quality Monitoring Stations (TRIB, UPR and 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.

<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 (calculated as unadjusted ratio)	Monthly	Calculated
Specific Conductance (micromhos/cm)	Monthly	Grab
Flow* (MGD)	Monthly	Instantaneous

*The permittee is only required to monitor and report flow at the tributary monitoring station on Wild Horse Creek (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.13 of the permit below for water quality monitoring station 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, Part I.B.13. 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 on Wild Horse Creek. 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.

At the designated water quality monitoring stations, monitoring will be required for calcium, magnesium, sodium, sodium adsorption ratio and specific conductance. Information gathered from the water quality monitoring stations may result in modification of the permit to protect existing uses on the tributary and mainstem.

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 and submitted with a copy of the laboratory analysis report for each outfall, clearly marked with permit and outfall numbers, 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 containment unit 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. When required, whole effluent toxicity (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 the issuance of this permit modification is due on February 15, 2010.

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 as defined in Part I.B.12. The permittee shall provide written notification of the establishment of each discharge point in accordance with Part I.A.2.a above.

12. **Location of Discharge Points and Containment Unit Monitoring Locations**

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

Table 1: WY0039519 Felix Field CBM Area

Out-fall	Qtr/Qtr	SECTION	TWP (N)	RNG (W)	LATITUDE	LONGITUDE	Drainage / Description	Groundwater approval required prior to Discharge?	Reservoir Bond to WDEQ Required prior to Discharge?
002	NENE	20	51	74	44.38949	-105.77647	Powder River (2ABWW), via Wild Horse Creek (3B), via Felix Draw (3B), via an on-channel reservoir "South Felix" (3B)	NO	YES
003	SESW	21	51	74	44.38527	-105.76579	Powder River (2ABWW), via Wild Horse Creek (3B), via Felix Draw (3B), via an on-channel reservoir "Henry Melvin Edwards #5" (3B)	NO	NO
*004	SWNW	19	51	74	44.38488	-105.81181	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Darlene" (3B)	NO	YES
005	NWSW	19	51	74	44.38133	-105.81181	Powder River (2ABWW), via Wild Horse Creek (3B), via Montgomery Draw (3B), via an on-channel reservoir "Fred" (3B)	NO	YES
006	NESE	24	51	74	44.38017	-105.81594	Powder River (2ABWW), via Wild Horse Creek (3B), via Montgomery Draw (3B), via an on-channel reservoir "Grady" (3B)	NO	NO
*007	NENW	30	51	74	44.37323	-105.80417	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Tom" (3B)	NO	YES
*008	NENE	30	51	74	44.37295	-105.79651	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Nelson" (3B)	NO	YES
*009	SESW	30	51	74	44.36927	-105.80328	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Zoe" (3B)	NO	YES
*010	NESE	30	51	74	44.36621	-105.79371	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Willy" (3B)	NO	YES
011	SWSW	29	51	74	44.36433	-105.78789	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Rick" (3B)	NO	NO
012	NENE	31	51	74	44.36098	-105.79575	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Lee #1" (3B)	NO	NO
*013	NESW	30	51	74	44.36696	-105.80619	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Shirley" (3B)	NO	YES
*014	SWSW	32	51	74	44.34913	-105.78297	Powder River (2ABWW), via Wild Horse Creek (3B), via an on-channel reservoir "Lee #2" (3B)	NO	YES
015	SWSE	32	51	74	44.34918	-105.78266	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "South Carol" (3B)	NO	NO
*016	SESW	33	51	74	44.34895	-105.76626	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Nora #1" (3B)	NO	NO

Out-fall	Qtr/Qtr	SECTION	TWP (N)	RNG (W)	LATITUDE	LONGITUDE	Drainage / Description	Groundwater approval required prior to Discharge?	Reservoir Bond to WDEQ Required prior to Discharge?
*017	SESW	33	51	74	44.34845	-105.76284	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Linda's Pond" (3B)	NO	NO
*018	SWSE	32	51	74	44.34885	-105.78081	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Nancy" (3B)	NO	NO
*019	SENE	32	51	74	44.35651	-105.77658	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Terri" (3B)	NO	NO
*020	NWSW	33	51	74	44.35113	-105.77041	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Nora #2" (3B)	NO	NO
021	SWNW	32	51	74	44.35637	-105.78828	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Sean" (3B)	NO	NO
*022	NWSW	29	51	74	44.36542	-105.79209	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Toni" (3B)	NO	YES
*023	NWNW	28	51	74	44.37583	-105.77107	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Dannine" (3B)	NO	YES
*024	NWSW	28	51	74	44.36608	-105.76747	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Brandon" (3B)	NO	YES
025	NESE	20	51	74	44.38137	-105.77413	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Henry Melvin Edwards #4" (3B)	NO	YES
026	SWSW	21	51	74	44.37828	-105.76856	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Railroad" (3B)	NO	NO
027	SWNE	28	51	74	44.37258	-105.75856	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Henry Melvin Edwards #6" (3B)	NO	NO
028	NESW	27	51	74	44.36818	-105.74756	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Red Hill" (3B)	NO	YES
029	NENE	34	51	74	44.35888	-105.73356	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Peters" (3B)	NO	NO
030	NWSE	35	51	74	44.35298	-105.72056	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Railroad #3" (3B)	NO	NO

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?
*034	NWNW	34	51	74	44.35991	-105.74974	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Tyrell" (3B)	NO	YES
*035	SESE	28	51	74	44.36393	-105.75698	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Ryan" (3B)	NO	YES
*036	SENE	28	51	74	44.37108	-105.76383	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Brad" (3B)	NO	YES
037	SWSE	20	51	74	44.37827	-105.78099	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Carey" (3B)	NO	YES
038	SWNE	29	51	74	44.37131	-105.77949	Powder River (2ABWW), via Wild Horse Creek (3B), via an unnamed, ephemeral tributary (3B), via an on-channel reservoir "Kara" (3B)	NO	NO
IMP1	SESW	18	51	74	44.39299	-105.80479	Irrigation Monitoring Point for outfalls 002 and 003	N/A	N/A
IMP2	NENW	19	51	74	44.38920	-105.80681	Irrigation Monitoring Point for outfalls 004-030, 034-038	N/A	N/A
UPR	SWSE	16	54	77	44.65036	-106.12836	Upstream Monitoring Station	N/A	N/A
TRIB1	SESE	16	54	77	44.65044	-106.12214	Tributary Monitoring Station Wild Horse Creek	N/A	N/A
DPR	NWSE	34	55	77	44.69694	-106.11294	Downstream water quality monitoring station Powder River	N/A	N/A

*Note: Asterisk denotes outfalls for which WDEQ has field-verified the Latitude and Longitude locations. These are considered to be the most accurate location data available for these outfalls, and will supersede Latitude and Longitude values presented in the application.

Requests for modification of the list below 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.

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 WDQ.

An 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.

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. 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.

PART II

A. MANAGEMENT REQUIREMENTS

1. Changes

The permittee shall give notice to the administrator of the Water Quality Division as soon as possible of any physical alterations or additions to the permitted facility. Notice is required when:

- a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source as determined in 40 CFR 122.29 (b); or
- b. The alteration or addition could change the nature or increase the quantity of pollutants discharged.

2. Noncompliance Notification

- a. The permittee shall give advance notice of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- b. The permittee shall report any noncompliance which may endanger health or the environment as soon as possible, but no later than 24 hours from the time the permittee first became aware of the circumstances. The report shall be made to the Water Quality Division, Wyoming Department of Environmental Quality at (307) 777-7781.
- c. For any incidence of noncompliance, including noncompliance related to non-toxic pollutants or non-hazardous substances, a written submission shall be provided within five (5) days of the time that the permittee becomes aware of the noncompliance circumstance.

The written submission shall contain:

- (1) A description of the noncompliance and its cause;
 - (2) The period of noncompliance, including exact dates and times;
 - (3) The estimated time noncompliance is expected to continue if it has not been corrected; and
 - (4) Steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance.
- d. The following occurrences of unanticipated noncompliance shall be reported by telephone to the Water Quality Division, Watershed Management Section, NPDES Program (307) 777-7781 as soon as possible, but no later than 24 hours from the time the permittee first became aware of the circumstances.
- (1) Any unanticipated bypass which exceeds any effluent limitation in the permit;

- (2) Any upset which exceeds any effluent limitation in the permit; or
 - (3) Violation of a maximum daily discharge limitation for any toxic pollutants or hazardous substances, or any pollutants specifically identified as the method to control a toxic pollutant or hazardous substance listed in the permit.
- e. The administrator of the Water Quality Division may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Water Quality Division, NPDES Program (307) 777-7781.
 - f. Reports shall be submitted to the Wyoming Department of Environmental Quality at the address in Part I under Reporting and to the 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.
 - g. The permittee shall report all instances of noncompliance that have not been specifically addressed in any part of this permit at the time the monitoring reports are due.

3. Facilities Operation

The permittee shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by the permittee only when the operation is necessary to achieve compliance with the conditions of the permit. However, the permittee shall operate, as a minimum, one complete set of each main line unit treatment process whether or not this process is needed to achieve permit effluent compliance.

4. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to waters of the state resulting from noncompliance with any effluent limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

5. Bypass of Treatment Facilities

- a. Bypass means the intentional diversion of waste streams from any portion of a treatment facility.
- b. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs c. and d. of this section. Return of removed substances to the discharge stream shall not be considered a bypass under the provisions of this paragraph.

- c. Notice:
 - (1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice at least 60 days before the date of the bypass.
 - (2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required under Part II.A.2.
- d. Prohibition of bypass.
 - (1) Bypass is prohibited and the administrator of the Water Quality Division may take enforcement action against a permittee for a bypass, unless:
 - (a) The bypass was unavoidable to prevent loss of life, personal injury or severe property damage;
 - (b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 - (c) The permittee submitted notices as required under paragraph c. of this section.
- e. The administrator of the Water Quality Division may approve an anticipated bypass, after considering its adverse effects, if the administrator determines that it will meet the three conditions listed above in paragraph d. (1) of this section.

6. Upset Conditions

- a. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improper designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- b. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of paragraph c. of this section are met.
- c. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that:
 - (1) An upset occurred and that the permittee can identify the cause(s) of the upset;
 - (2) The permitted facility was at the time being properly operated;

- (3) The permittee submitted notice of the upset as required under Part II.A.2; and
- (4) The permittee complied with any remedial measures required under Part II.A.4.

d. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

7. Removed Substances

Solids, sludges, filter backwash or other pollutants removed in the course of treatment or control of wastewaters or intake waters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering waters of the state.

8. Power Failures

In order to maintain compliance with the effluent limitations and prohibitions of this permit, the permittee shall either:

- a. In accordance with a schedule of compliance contained in Part I, provide an alternative power source sufficient to operate the wastewater control facilities; or
- b. If such alternative power source as described in paragraph a. above is not in existence and no date for its implementation appears in Part I, take such precautions as are necessary to maintain and operate the facility under its control in a manner that will minimize upsets and insure stable operation until power is restored.

9. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the federal act and the Wyoming Environmental Quality Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The permittee shall give the administrator of the Water Quality Division advance notice of any planned changes at the permitted facility or of any activity which may result in permit noncompliance.

10. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

11. Signatory Requirements

All applications, reports or information submitted to the administrator of the Water Quality Division shall be signed and certified.

- a. All permit applications shall be signed as follows:
 - (1) For a corporation: by a responsible corporate officer;

- (2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively;
 - (3) For a municipality, state, federal or other public agency: by either a principal executive officer or ranking elected official.
- b. All reports required by the permit and other information requested by the administrator of the Water Quality Division shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
- (1) The authorization is made in writing by a person described above and submitted to the administrator of the Water Quality Division; and
 - (2) The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for the company. A duly authorized representative may thus be either a named individual or any individual occupying a named position.
- c. If an authorization under paragraph II.A.11.b. is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph II.A.11.b must be submitted to the administrator of the Water Quality Division prior to or together with any reports, information or applications to be signed by an authorized representative.
- d. Any person signing a document under this section 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."

B. RESPONSIBILITIES

1. Inspection and Entry

If requested, the permittee shall provide written certification from the surface landowner(s), if different than the permittee, that the administrator or the administrator's authorized agent has access to all physical locations associated with this permit including well heads, discharge points, reservoirs, monitoring locations, and any waters of the state.

The permittee shall allow the administrator of the Water Quality Division or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

- a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit; and
- d. Sample or monitor, at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the federal act, any substances or parameters at any location.

2. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharges emanate, the permittee shall notify the succeeding owner or controller of the existence of this permit by letter, a copy of which shall be forwarded to the regional administrator of the Environmental Protection Agency and the administrator of the Water Quality Division. The administrator of the Water Quality Division shall then provide written notification to the new owner or controller of the date in which they assume legal responsibility of the permit. The permit may be modified or revoked and reissued to change the name of the permittee and incorporate such other requirements as described in the federal act.

3. Availability of Reports

Except for data determined to be confidential under Section 308 of the federal act, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Wyoming Department of Environmental Quality and the regional administrator of the Environmental Protection Agency. As required by the federal act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the federal act.

4. Toxic Pollutants

The permittee shall comply with effluent standards or prohibitions established under Section 307 (a) of the federal act for toxic pollutants within the time provided in the regulations that

establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Changes in Discharge of Toxic Substances

Notification shall be provided to the administrator of the Water Quality Division as soon as the permittee knows of, or has reason to believe:

- a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - (1) One hundred micrograms per liter (100 µg/l);
 - (2) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
 - (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21 (g) (7); or
 - (4) The level established by the director of the Environmental Protection Agency in accordance with 40 CFR 122.44 (f).
- b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - (1) Five hundred micrograms per liter (500 µg/l);
 - (2) One milligram per liter (1 mg/l) for antimony;
 - (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21 (g) (7); or
 - (4) The level established by the director of the Environmental Protection Agency in accordance with 40 CFR 122.44 (f).

6. Civil and Criminal Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. As long as the conditions related to the provisions of "Bypass of Treatment Facilities" (Part II.A.5), "Upset Conditions" (Part II.A.6), and "Power Failures" (Part II.A.8) are satisfied then they shall not be considered as noncompliance.

7. Need to Halt or Reduce Activity not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

8. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities or penalties to which the permittee is or may be subject under Section 311 of the federal act.

9. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities or penalties established pursuant to any applicable state or federal law or regulation. In addition, issuance of this permit does not substitute for any other permits required under the Clean Water Act or any other federal, state, or local law.

10. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights nor any infringement of federal, state or local laws or regulations.

11. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. The application should be submitted at least 180 days before the expiration date of this permit.

12. Duty to Provide Information

The permittee shall furnish to the administrator of the Water Quality Division, within a reasonable time, any information which the administrator may request to determine whether cause exists for modifying, revoking and reissuing or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the administrator, upon request, copies of records required by this permit to be kept.

13. Other Information

When the permittee becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or any report to the administrator of the Water Quality Division, it shall promptly submit such facts or information.

14. Permit Action

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

15. Permit Fees

Once this permit has been issued, the permittee will be assessed a \$100.00 per-year permit fee by the Water Quality Division. The fee year runs from January 1st through December 31st. This permit fee will continue to be assessed for as long as the permit is active, regardless of whether discharge actually occurs. This fee is not pro-rated. If the permit is active during any portion of the fee year, the full fee will be billed to the permittee for that fee year. In the event that this permit is transferred from one permittee to another, each party will be billed the full permit fee for the fee year in which the permit transfer was finalized.

PART III

A. OTHER REQUIREMENTS

1. Flow Measurement

At the request of the administrator of the Water Quality Division, the permittee must be able to show proof of the accuracy of any flow measuring device used in obtaining data submitted in the monitoring report. The flow measuring device must indicate values of within plus or minus ten (10) percent of the actual flow being measured.

2. 208(b) Plans

This permit may be modified, suspended or revoked to comply with the provisions of any 208(b) plan certified by the Governor of the State of Wyoming.

3. Reopener Provision

This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations (and compliance schedule, if necessary) or other appropriate requirements if one or more of the following events occurs:

- a. The state water quality standards of the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit;
- b. A total maximum daily load (TMDL) and/or watershed management plan is developed and approved by the state and/or the Environmental Protection Agency which specifies a wasteload allocation for incorporation in this permit;
- c. A revision to the current water quality management plan is approved and adopted which calls for different effluent limitations than contained in this permit;
- d. Downstream impairment is observed and the permitted facility is contributing to the impairment;
- e. The limits established by the permit no longer attain and/or maintain applicable water quality standards;
- f. The permit does not control or limit a pollutant that has the potential to cause or contribute to a violation of a state water quality standard.
- g. If new applicable effluent guidelines and/or standards have been promulgated and the standards are more stringent than the effluent limits established by the permit.
- h. In order to protect water quality standards in neighboring states, effluent limits may be incorporated into this permit or existing limits may be modified to ensure that the appropriate criteria, water quality standards and assimilative capacity are attained.
- i. If new, additional or more stringent permit conditions are necessary for control of erosion downstream of the discharges to ensure protection of water quality standards.

4. Permit Modification

After notice and opportunity for a hearing, this permit may be modified, suspended or revoked in whole or in part during its term for cause including, but not limited to, the following:

- a. Violation of any terms or conditions of this permit;
- b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
- d. If necessary to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b) (2) (C) and (D), 304 (b) (2) and 307 (a) (2) of the federal act, if the effluent standard or limitation so issued or approved:
 - (1) Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - (2) Controls any pollutant not limited in the permit.

5. Toxicity Limitation - Reopener Provision

This permit may be reopened and modified (following proper administrative procedures) to include a new compliance date, additional or modified numerical limitations, a new or different compliance schedule, a change in the whole effluent protocol or any other conditions related to the control of toxicants if one or more of the following events occur:

- a. Toxicity was detected late in the life of the permit near or past the deadline for compliance;
- b. The TRE results indicate that compliance with the toxic limits will require an implementation schedule past the date for compliance and the permit issuing authority agrees with the conclusion;
- c. The TRE results indicate that the toxicant(s) represent pollutant(s) that may be controlled with specific numerical limits and the permit issuing authority agrees that numerical controls are the most appropriate course of action;
- d. Following the implementation of numerical controls on toxicants, the permit issuing authority agrees that a modified whole effluent protocol is necessary to compensate for those toxicants that are controlled numerically;
- e. The TRE reveals other unique conditions or characteristics which, in the opinion of the permit issuing authority, justify the incorporation of unanticipated special conditions in the permit.

6. Severability

The provisions of this permit are severable and if any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application

of such provision to other circumstances and the remainder of this permit, shall not be affected thereby.

7. Penalties for Falsification of Reports

The federal act provides that any person who knowingly makes any false statement, representation or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance 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.