



Dave Freudenthal  
GOVERNOR

## Department of Environmental Quality

Herschler Building • 122 West 25th Street • Cheyenne, Wyoming 82002

ADMINISTRATION	ABANDONED MINES	AIR QUALITY	INDUSTRIAL SITING	LAND QUALITY	SOLID & HAZARDOUS WASTE	WATER QUALITY
(307) 777-7758 FAX 777-7682	(307) 777-6145 FAX 634-0799	(307) 777-7391 FAX 777-5616	(307) 777-7366 FAX 777-5937	(307) 777-7756 FAX 634-0799	(307) 777-7752 FAX 777-5973	(307) 777-7781 FAX 777-5973

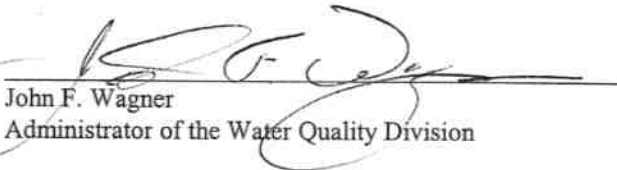
### Major Modification

This permit modification represents a major modification of Permit No. WY0047422 known as **Kuhn Ranch 2, 11 CBM Facility**, issued on February 12, 2002 and expiring on February 11, 2007. This facility is located in the **Powder River Basin** and is currently owned by **Pennaco Energy, Inc.** The terms of Permit No. WY0047422 are hereby modified as follows:


1. Adopt the end-of-pipe Class 3 standard for dissolved iron of 1000 ug/L for outfalls greater than one mile from a Class 2AB stream (see attachment 2).
2. Adopt the modified initial monitoring report (IMR) constituent list provided below (see attachment 2).
3. Add outfall relocation language to reflect current policy (see attachment 1).

**Same Terms and Conditions.** With the exception of items explicitly delineated in this major modification, all terms and conditions of Permit No. WY0047422 shall remain unchanged and in full force and effect.

This major modification shall become effective on the date the Director of the Department of Environmental Quality signs below.

  
John F. Wagner  
Administrator of the Water Quality Division

2/28/05  
Date

  
John V. Corra  
Director - Department of Environmental Quality

2/28/05  
Date

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Attachment 1

**Table 1: Outfall Information**

Permit Number	Outfall	Distance in miles from class 2AB channel	Nearest class 2AB channel	Dissolved iron limit (ug/L)
WY0047422	001	0.567	Powder River	299.7
WY0047422	002	0.192	Powder River	299.7
WY0047422	003	0.11	Powder River	299.7
WY0047422	004	1.039	Powder River	1000
WY0047422	005	0.768	Powder River	299.7
WY0047422	006	0.581	Powder River	299.7
WY0047422	007	0.432	Powder River	299.7
WY0047422	008	0.317	Powder River	299.7
WY0047422	009	0.44	Powder River	299.7
WY0047422	010	0.28	Powder River	299.7

*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 2,640 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 NPDES 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.*

*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.*

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Attachment 2

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Effective immediately and lasting through February 11, 2007, 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 outfalls(s) serial number(s) **001-010**.

1. a. Such discharges shall be limited as specified below for outfall **004**. **This outfall is greater than one mile from a class 2AB stream:**

Effluent Limits

Effluent Characteristic	Daily Maximum
Chlorides, mg/l	46
Dissolved Iron, µg/l	1000
Dissolved Manganese, µg/l	629
pH, su	6.5 - 8.5
Specific Conductance, micromhos/cm	7500
Sulfates, mg/l	3000
Total Arsenic, µg/l	7
Total Barium, µg/l	1800
Dissolved Copper, ug/L	9.2
Dissolved Lead, ug/L	3.7
Total Dissolved Solids, mg/l	5000
Total Petroleum Hydrocarbons (TPH), mg/l*	10
Total Radium 226, pCi/l	1

\*Acceptable methods for this parameter are 1664 in the latest edition of Standard Methods for the Examination of Water and Wastewater and EPA SW846 Method 8015 (modified) for Total Extractable Petroleum Hydrocarbons.

The pH shall not be less than 6.5 standard units nor greater than 8.5 standard units in any single grab sample.

The permittee's original submitted application for coal bed methane water discharge estimates a total flow rate of 1.25 MGD from 58 wells for this facility.

Information gathered from the water quality monitoring stations may result in modification of the permit 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.

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1. b. Such discharges shall be limited as specified below for outfalls **001, 002, 003, 005, 006, 007, 008, 009, and 010**. These outfalls are less than one mile from a class 2AB stream:

**Effluent Limits**

Effluent Characteristic	Daily Maximum
Chlorides, mg/l	46
Dissolved Iron, µg/l	1000
Dissolved Manganese, µg/l	629
pH, su	6.5 - 8.5
Specific Conductance, micromhos/cm	7500
Sulfates, mg/l	3000
Total Arsenic, µg/l	7
Total Barium, µg/l	1800
Dissolved Copper, ug/L	9.2
Dissolved Lead, ug/L	3.7
Total Dissolved Solids, mg/l	5000
Total Petroleum Hydrocarbons (TPH), mg/l*	10
Total Radium 226, pCi/l	1

\*Acceptable methods for this parameter are 1664 in the latest edition of Standard Methods for the Examination of Water and Wastewater and EPA SW846 Method 8015 (modified) for Total Extractable Petroleum Hydrocarbons.

The pH shall not be less than 6.5 standard units nor greater than 8.5 standard units in any single grab sample.

The permittee's original submitted application for coal bed methane water discharge estimates a total flow rate of 1.25 MGD from 58 wells for this facility.

Information gathered from the water quality monitoring stations may result in modification of the permit 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:

a. Monitoring of the Initial Discharge

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*Upon approval of this modification, new IMRs will be required for outfalls 006, 008, 009, and 010 as described below. IMRs have been submitted for outfalls 001-005 and 007 and new IMRs do not need to be submitted for these outfalls following approval of this modification.*

Within **60** days of commencement of discharge, a sample shall be collected from outfalls 006, 008, 009, and 010 and analyzed for the **24** 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 24 constituents. 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 <sub>3</sub>
Aluminum, Total Recoverable	50 µg/l
Arsenic, Total	1 µg/l
Barium, Total	100 µg/l
Bicarbonate	10 mg/l
Cadmium, Dissolved	5 µg/l
Calcium, Total	50 µg/l, report as meq/l
Calcium, Total	50 µg/l, report as mg/l
Chlorides	5 mg/l
Copper, Dissolved	10 µg/l
Dissolved Solids, Total	5 mg/l
Hardness, Total	10 mg/l as CaCO <sub>3</sub>
Iron, Dissolved	50 µg/l
Lead, Dissolved	2 µg/l
Magnesium, Total	100 µg/l, report as meq/l
Magnesium, Total	100 µg/l, report as mg/l
Manganese, Dissolved	50 µg/l
Mercury, Dissolved	1 µg/l
pH	to 0.1 pH unit
Radium 226, Total	0.2 pCi/l
Selenium, Total Recoverable	5 µg/l
Sodium Adsorption Ratio	Calculated as unadjusted ratio
Sodium, Total	100 µg/l, report as meq/l
Sodium, Total	100 µg/l, report as mg/l
Specific Conductance	5 micromhos/cm
Sulfates	10 mg/l
Zinc, Dissolved	50 µg/l

Table date 12/31/03

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\*\*Dissolved is the value based on the dissolved amount which is the amount that will pass through a 0.45  $\mu\text{m}$  membrane filter prior to acidification to pH 1.5 - 2.0 with nitric acid. Total is the value expressed in terms of total recoverable metal in the water column.

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  
999 18th St., Suite 300  
Denver, CO 80202-2466

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

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	Monthly for April, May, June, July	Grab
Dissolved Calcium	Monthly for April, May, June, July	Grab
Chloride	Monthly for April, May, June, July	Grab
Dissolved Iron	Annually	Grab
Dissolved Manganese	Annually	Grab
Dissolved Fluoride	Monthly for April, May, June, July	Grab
Dissolved Magnesium	Monthly for April, May, June, July	Grab
pH	Once Every Six Months	Grab
Dissolved Potassium	Monthly for April, May, June, July	Grab
Radium 226	Annually	Grab
Dissolved Sodium	Monthly for April, May, June, July	Grab
Sodium Adsorption Ratio	Monthly for April, May, June, July	Calculated
Specific Conductance	Monthly for April, May, June, July	Grab
Sulfate	Monthly for April, May, June, July	Grab
Total Alkalinity	Monthly for April, May, June, July	Grab
Dissolved Copper	Annually	Grab

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Dissolved Lead	Annually	Grab
Total Arsenic	Annually	Grab
Total Barium	Annually	Grab
Total Flow - (MGD)	Monthly	Continuous
Total Petroleum Hydrocarbons	Annually	Grab

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. Water Quality Monitoring Stations

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	Monthly	Grab
Chloride	Monthly	Grab
Dissolved Magnesium	Monthly	Grab
Dissolved Sodium	Monthly	Grab
Sodium Adsorption Ratio	Monthly	Calculated
Specific Conductance	Monthly	Grab
Flow	Monthly	Grab

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): designated water quality monitoring stations located in unnamed ephemeral draws and in the main channel of the Powder River, upstream and downstream of the confluence with the Powder River. The designated water quality monitoring stations are located in the unnamed tributaries in the SENE of Section 35, Township 54 North, Range 77 West and the SWNE of Section 2 and the NENW of Section 11, Township 53 North, Range 77 West and on the mainstem in the NESW of Section 36, Township 54 North, Range 77 West and the NENW of Section 11, Township 53 North, Range 77 West. Established water quality monitoring stations on the mainstem are located outside the mixing zone with the tributary and the mainstem. Results are to be reported semiannually and if no flow occurs at the designated tributary monitoring station, then "no flow" is to be reported and samples need not be collected at the water quality monitoring stations for that monthly sampling period.