

FILED

**BEFORE THE
ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING**

DEC 05 2006

**Terri A. Lorenzon, Director
Environmental Quality Council**

IN THE MATTER OF THE APPEAL OF)
4W RANCH OBJECTION TO) DOCKET NO. 04-3801
NPDES PERMITS WY0051217,)
WY0051233 & WY0051373)

**DEQ'S COMMENTS ON PROPOSED FINDINGS OF FACT AND
CONCLUSIONS OF LAW FOR PERMIT NO. WY0051217 (PALM TREE UNIT)**

Respondent Wyoming Department of Environmental Quality (DEQ), pursuant to the Environmental Quality Council's (Council or EQC) November 28, 2006 *Memorandum*, submits the following comments and proposed edits to the Council's PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW FOR PERMIT NO. WY0051217 (PALM TREE UNIT). These comments and edits are in the form of a strike and underline mark up. The "T" references are to pages in the hearing transcript for the Council's convenience in considering these proposed comments and edits.

THIS MATTER having come before the Environmental Quality Council on September 26-27, 2006, with Hearing Examiner, Jon Brady presiding and Council members John Morris, Dennis Boal, Richard Moore, and Sara Flitner participating and having considered the evidence presented and being otherwise well advised in the premises the Council finds as follows:

1. The petitioners, Major Robert L. Harshbarger and Mrs. Jean Harshbarger were in attendance at the hearing, and presented evidence related to the matter.

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2. Counsel for Bill Barrett Corporation, Hadassah M. Reimer, was in attendance at the hearing and presented evidence related to the matter.
3. Counsel for the Department of Environmental Quality (DEQ), Michael Barrash, was in attendance at the hearing and presented evidence related to the matter.
4. Permit No. WY0051217, also known as the Palm Tree Unit Permit, authorizes Bill Barrett Corporation to discharge coal bed methane produced water into tributaries of the Cheyenne River as long as the quality of the **discharge** water does not exceed, among other things, the following permit limits: **(T @ 236, 259)**
 - (a) Specific Conductance (EC) - 2000 micromhos/cm **(T @ 168)**
 - (b) Sodium Absorption Ratio (SAR) - 10 **(T @ 170)**
 - (c) pH - 6.5 to 8.5 standard units **(T @ 171-172)**
 - (d) Barium - 1800 cg/l **(T @ 173)**
 - (e) Dissolved Iron - 1000 cg/l **(T @ 173-174)**
 - (f) Arsenic - 2.4 cg/l **(T @ 174)**
5. The water being discharged under this permit is being used for irrigation **by Jerry Moore, above the 4W Ranch, but not by the 4W Ranch.** **(T @ 58, 93-95, 340-341)**
6. The Petitioners are the owners and operators of the 4W ranch located downstream of the discharges under the Palm Tree Unit Permit.
7. The Petitioners' source of irrigation **water for their two irrigated meadows (UNKs and Runway)** is the Cheyenne River. **(T @ 73, 87-88)**
8. The permit does not require containment or reduce the flow of the Cheyenne River. **(T @ 235-236)**
9. The average discharge of water being discharged under this permit is 3-4 gallons per minute **per well.** **(T @ 268-269)**
10. Although at this point it appears that there is not enough quantity of discharged water to reach the Cheyenne River, there is no assurance provided in the permit that the discharged water will not reach the Cheyenne River. **(T @ 93-95, 98, 236)**

11. The permit limits for pH are set at the range that is appropriate for aquatic life, which also correspond to the normal range for irrigation of 6.5 to 8.4. (T @ 172)
12. The permit limits for Barium are set at an amount appropriate for human health. (T @ 173)
13. The permit limits for Dissolved Iron are set at an amount appropriate for aquatic life. (T @ 174)
14. The permit limits for arsenic are set at an amount appropriate for ~~an amount appropriate for~~ human health. (T @ 174)
15. There is no numeric standard for SAR and EC in the DEQ Water Quality rules. (T @ 177)
16. The EC level in the permit is set using Salt Tolerance Database from the George Brown Salinity Laboratory in California and based on the threshold valuation of alfalfa, the most salt-sensitive plant irrigated in northeastern Wyoming. (T @ 169, 184)
17. The SAR level in the permit is set using irrigation suitability categories and the **Hansen Hanson** Graph. (T @ 170)
18. There is an interdependent relationship between SAR & EC. The relationship can be expressed by the equation $SAR < 7.10 \times EC - 2.48$. This equation represents the line on the **Hansen Hanson** Graph between no reduction in infiltration and slight to moderate reduction in infiltration. (T @ 189, 242)
19. If the EC and the SAR fall above the line on the ~~Hansen chart~~ **Hanson Graph** there is potential to cause adverse effects to the soil. Specifically, if the effluent limits for EC and SAR are set independently there is the potential ~~for that~~ the water applied to the soil to cause a could meet the effluent limits and still fall into the range of slight to moderate reduction in infiltration on the Hanson Graph. (T @ 182, 242)
20. The permit does not ~~recognize the relationship between~~ set effluent limits that link SAR and EC as a ratio. (T @ 182)
21. DEQ has a monitoring program that will enable it to spot cumulative increases in SAR and EC.

22. There is a re-opener provision in the permit allowing modification if there is a measurable decrease in downstream crop or livestock production. (T @ 252)
23. There is no evidence that the permit limits related to pH, Barium, Dissolved Iron, and Arsenic will cause a measurable decrease in crop and livestock production in violation of Wyoming Water Quality Rules & Regulations (WQ Rules) Chapter 1, § 20.
24. There is no evidence that the discharges of CBM water under this permit will violate WQ Rules, Chapter 1, § 8(a)(ii) requiring that a new source of pollution must ensure that all existing water uses are fully maintained and protected.
25. There is no evidence that the discharges of CBM water under this permit will violate WQ Rules related to aesthetic degradation.
26. There is no evidence that granting this permit will injure Petitioners' property rights.
27. There is no evidence that the discharges of CBM water under this permit will deny the Petitioners their historic irrigation water rights and damage their personal property.
- 28. There is no evidence that the discharges of CBM water under this permit have caused a measurable decrease in Petitioners' crop or livestock production. (T @ 87-90, 93-95, 98, 111-112)**

CONCLUSIONS OF LAW

1. The EQC has jurisdiction over the subject matter and the parties to this proceeding.
2. The Environmental Quality Act, Wyo. Stat. § 35-11-112 ~~(b)~~ (a) (iv) grants the EQC authority to conduct hearings in cases contesting permits, and Wyo. Stat. § 35-11-112(c)(ii) provides authority to modify permits. The EQC conducts de novo hearings pursuant to the DEQ Rules of Practice and Procedure, the Wyoming Rules of Evidence, and the Wyoming Rules of Civil Procedure.
3. Based on the evidence there is potential ~~for damage~~ that the water applied to the soil could meet the permitted effluent limits and still fall into the range of slight to moderate reduction in infiltration on the Hanson Graph if the permit is not modified to include the equation, $SAR < 7.10 \times EC - 2.48$. Such ~~damage~~ a reduction in infiltration

could cause a measurable decrease in crop and livestock in violation
WQ Rules Chapter 1, § 20. (T @ 182, 242)

IT IS THEREFORE HEREBY ORDERED THAT:

The following limitation shall be placed in the permit, SAR < 7.10 x EC - 2.48.
The permit shall otherwise be issued as written without modification.

DATED this 5th day of December, 2006



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CERTIFICATE OF SERVICE

A true and correct copy of the foregoing DEQ'S COMMENTS ON PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW FOR PERMIT NO. WY0051217 (PALM TREE UNIT) was served this 5th day of December, 2006 by e-mail and deposit in the United States mail, first class postage prepaid, addressed as follows:

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