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Terri A. Lorenzon, Director
Environmental Quality Council

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

IN THE MATTER OF THE APPEAL)
OF 4W RANCH, OBJECTION)
NPDES PERMITS NOS.) Docket No. 04-3801
WY0051217, WY0051233 &)
WY0051373)

**BILL BARRETT CORPORATION'S OBJECTIONS TO PROPOSED FINDINGS OF
FACT AND CONCLUSIONS OF LAW FOR PERMIT NO. WY0051217 (PALM
TREE UNIT)**

The Environmental Quality Council ("EQC" or the "Council") provided its Proposed Findings of Fact and Conclusions of Law for Permit No. WY0051217 (Palm Tree Unit) ("Proposed Findings") to Bill Barrett Corporation ("BBC") for review and comment on November 29, 2006. BBC has reviewed the Council's Proposed Findings and submits the following comments and objections, along with revised Proposed Findings, patterned after the Council's Proposed Findings, for the Council's consideration.

GENERAL COMMENTS APPLICABLE TO PROPOSED FINDINGS

On September 26-27, 2006, the Council heard the appeal of Major Robert and Mrs. Jean Harshbarger, owners of the 4W Ranch, of BBC discharge Permit Nos. WY0051217 (the Palm Tree Project Permit) and WY0051233 (the Big Porcupine Project Permit). The Harshbargers testified that they were concerned that water discharged under the permits would reach the 4W Ranch, some 69 miles downstream from the Palm Tree Project and 32 miles downstream from the Big Porcupine Project,

and cause a measurable decrease in crop or livestock production in violation of Chapter 1, Section 20 of the Wyoming Water Quality Rules and Regulations (“WQRRs”). The Harshbargers, however, presented no evidence to show that discharge under the permits ever reached the 4W Ranch, let alone caused a measurable decrease in crop production at the 4W Ranch. Hearing Transcript, Vol. I, at 111-12. Nevertheless, at the close of the evidence, the Council deliberated and determined that the Big Porcupine Project Permit should be affirmed as written, and that the Palm Tree Project Permit should be affirmed with the following limitation, intended to protect agricultural uses downstream of the discharge: $SAR < 7.10 \times EC - 2.48$. Tr., Vol. II, at 378-79.

BBC raises four general issues regarding the Council’s proposed findings, which are also addressed in BBC’s Motion for Remand, filed November 3, 2006:

Issues in Evidence at the Hearing: Measurable Decrease from Discharge

First, the focus of the evidence presented by all parties at the hearing was on the discrete claims brought by the Harshbargers—whether discharge under the permits would ever reach the 4W Ranch and if it did, what impact, if any, it might have. The Harshbargers had alleged that water discharged under the permit would reach the Cheyenne River and the 4W Ranch, either on the surface or through the alluvial groundwater table, and cause measurable decrease in crop or livestock production, in violation of the Chapter 1, Section 20 of the WQRRs. BBC presented evidence that surface water discharged under the Palm Tree Project Permit does not reach the 4W Ranch, but percolates into the channel 69 miles upstream. Further, even if the surface

water did reach the 4W Ranch during a storm event, before application through surface irrigation, the water would be mixed with substantial quantities of natural flows. Finally, should infiltration occur as alleged, the discharged water would likely be of higher quality than the subsurface water quality of the Cheyenne River drainage as measured at the 4W Ranch. Tr., Vol. II, at 288-90. In short, the Harshbargers failed to demonstrate a measurable decrease in crop or livestock production attributable to BBC discharges under the Palm Tree Permit. Tr., Vol. I, at 111-12.

Not in Issue or in Evidence at the Hearing: EC/SAR Ratio

Second, very little evidence was presented at the hearing on the relationship between SAR and EC and its application to discharge permit limitations because the Harshbargers did not raise the issue in their appeal. During the hearing, discussion of the Hanson Diagram and the relationship between EC and SAR was limited to brief cross-examination of the DEQ's witnesses. Tr., Vol. I, at 182-84, 89-91 & Vol. II, at 241-44. Though the issue was never raised by the Harshbargers, the Council explained that it had been recently educated on the issue in another hearing. Tr., Vol. I, at 190-91. The 4W Ranch did not present evidence on the relationship between SAR and EC as it did not seek imposition of the ratio as a permit condition. Nor did DEQ or BBC address the issue. In fact, the Council itself, not the parties to the hearing, requested that the Hanson Diagram be entered as evidence, illustrating the apparent disparity between the parties' and the Council's understanding of the relevant issues at the hearing. Tr., Vol. II, at 245-46.

Given the fact that the 4W Ranch protest was based on alleged downstream effects, BBC did not believe there was a need to present site-specific data on background water quality, soil condition, or irrigation practices for the area in which discharges from the Palm Tree Project actually occur—evidence that is critical to any determination that the ratio limitation may be necessary to protect soils and agricultural uses where the water is actually applied, as well as implementation of that determination. Had BBC known that the EC/SAR ratio was at issue in the hearing, BBC would also have presented evidence that the quantity of water discharged under the permit is no longer of sufficient for irrigation, the soils where the discharge water is applied are sandy or sandy loam, which are not as sensitive to SAR, and that water discharged under the permit dissolves and picks up naturally occurring salts as it flows through the channel, increasing the EC and bringing the discharge within the recommended ratio for EC/SAR prior to any application for irrigation. Without this evidence, the EQC lacked sufficient information to determine whether the ratio should necessarily be applied in this case, and if so, under what circumstances.

EC/SAR Ratio Issues and Policy Still Being Formulated by DEQ

Third, in its advisory role to the EQC, DEQ has recently taken up consideration of a draft Agricultural Use Protection Policy (the “Policy”), to explain the requirements of Chapter 1, Section 20, of the WQRRs, and address the exact issue raised by the Council in this appeal—the relationship between SAR and EC. The Policy provides a three-tiered analysis for setting effluent limits on EC and SAR for the protection of

irrigated crops and soils. Under Tier I, in the absence of site-specific information on background water quality, soil condition, and irrigation practices, conservative default limits would be set, including a required relationship between EC and SAR ($SAR < 7.1 \times EC - 2.48$) based on the Hanson Diagram to prevent slight to moderate reduction in soil infiltration. A Tier II or Tier III analysis would be used if background information is available allowing DEQ to tailor the permit limits to site-specific conditions, such as background water quality, soil type and condition, and irrigation practices. BBC understands that the Policy is near completion and will be submitted to the EQC for review along with revisions to Chapter 1 of the WQRRs in early 2007. DEQ has not yet imposed the condition on any new permits, but will be doing so and working through implementation and enforcement issues after finalizing the Policy. Imposition of the ratio on this permit without the necessary guidance as to how it should be applied and enforced creates a situation where this permit may be treated inconsistently with other permits issued before and after DEQ's implementation of the final Policy.

EC/SAR Ratio Limitation Presents Several Unanswered Questions

Finally, the EQC's Proposed Findings impose the EC and SAR relationship requirement without clarifying how this never-before-implemented discharge permit condition should be administered by DEQ. For example, is the condition an end-of-pipe requirement or does it apply only to discharge as applied to irrigable soils? Is the condition to be applied outside the irrigation season? What type of monitoring is required? Should a compliance schedule be developed? On November 3, 2006, BBC

moved that the Council include a remand to the DEQ in its order on the Palm Tree Project Permit to give DEQ an opportunity to fill in the details on how the condition should be implemented, consistent with the soon-to-be-released Policy. DEQ filed a motion in support of the BBC's remand request. The Council's Proposed Findings do not address BBC's and DEQ's request for remand, unopposed by Petitioners, filed to seek deliberative clarity on the application of the Council's EC/SAR ratio limitation. The Proposed Findings as drafted would impose a condition without needed guidance from DEQ as to how it should be implemented and enforced. This need is particularly acute since DEQ itself is still in the process of studying its Policy and how and when an EC/SAR ratio should be applied to permits. Although the EQC could provide the answers to these critical questions, it is proper and appropriate to remand the matter to DEQ for its expertise to fill in those details, consistent with its charge. The Proposed Findings should provide for this remand to intelligently implement the Council's order.

SPECIFIC OBJECTIONS

While some of the Council's proposed findings of fact are accurate, others are not supported by the record or are incomplete.

Finding of Fact No. 5. The decision to impose the ratio requirement on the Palm Tree Project Permit was apparently premised on the finding that water discharged under the permit is utilized for irrigation. Tr., Vol. II, at 242-43 (Mr. Moore: "So if we want to have a condition that protects the existing agricultural use *when the water is used for irrigation*, we should probably have that equation in a permit; is that a fair

statement?"). Given its critical importance, the testimony of the Mr. Jerry Moore, the rancher who stated he had used the water for irrigation, must be accurately characterized. Mr. Moore testified that while he was able to irrigate in 2005, there are no longer sufficient flows for irrigation. Tr., Vol. II, at 349-50. Nor will the current flows under the Palm Tree Project Permit increase. Mr. McElvery testified that discharge from the permitted CBM wells has peaked and is now on the decline. Tr., Vol. II, at 269-72. Short of shutting in the wells for several years and rebuilding the pressure in the coal seam, there is no other known physical mechanism by which current discharges under this permit could increase, as the reservoir has already been depleted.

Finding of Fact No. 6. This finding of fact should include the fact that the 4W Ranch is 69 miles downstream from the Palm Tree Project. Tr., Vol. II, at 276.

Finding of Fact No. 8. To clarify this finding, it should be revised to read as follows: "The permit does not require containment or restrict natural flows from reaching the Cheyenne River." Further, the finding should acknowledge that while there is no containment requirement in the permit, the limited and declining discharge, arid conditions in the area, and distance to the Cheyenne River indicate that water discharged under the permit will not reach the Cheyenne River. Tr., Vol. I, at 59, 90-93 & Vol. II, at 271-72, 276.

Finding of Fact No. 9. The flow data and testimony of Mr. Paul McElvery do not support this finding. Mr. McElvery indicated that at its peak, the Palm Tree Project produced 3 or 4 gallons per minute per well. Tr., Vol. II, at 269. In June of 2006,

flows had declined substantially and the entire Palm Tree Project produced only 100 gallons per minute. Tr., Vol. II, at 272. Comparable quantities of water have been discharged in the Cheyenne River watershed over the past 15 years and there is no evidence of any noticeable decrease in agricultural productivity, while forage and livestock production has noticeably increased. Tr., Vol. II, at 339.

Finding of Fact No. 10. Though there is no regulatory limitation in the permit assuring that discharged water will not reach the Cheyenne River, the record demonstrates that it is extremely unlikely that water discharged under the permit will reach the Cheyenne River, 51 miles downstream, except in very large storm events. In those cases, the water will be substantially diluted by natural flows. Further, given the limited and declining flows, the arid condition of the landscape, and the distance to the Cheyenne River, if flows have not reached the Cheyenne River to date, there is no recognizable mechanism by which they ever will. Tr., Vol. I, at 59, 90-93 & Vol. II, at 271-72, 276, 288-90.

Finding of Fact No. 16, 17, and 18. The proposed findings of fact do not accurately reflect the testimony regarding the Hanson Diagram. While the equation does represent the line on the Hanson Diagram between “no reduction in infiltration” and a “slight to moderate reduction in infiltration,” a variety of site-specific factors must be considered in determining whether the ratio should be applied. Tr., Vol. II, at 206. DEQ considers site specific factors, such as background water quality, soil type,

soil condition, irrigation practices, and other background conditions in setting permit limits. Tr., Vol. II, at 206; Draft Ag Use Protection Policy, III.C.2.

Finding of Fact No. 21. The finding referencing DEQ's "monitoring program" should be clarified. It implies that DEQ has a system for monitoring cumulative increases in *soil* EC and SAR. The DEQ witness was clear that there is no system for monitoring soil EC and SAR in place, though DEQ does monitor water quality in water bodies around the state. Tr., Vol. II, at 248-50.

Finding of Fact No. 22. The finding states that a permit can be re-opened if there is a measurable decrease in crop or livestock production. In fact, the re-opener provision allows modification if there is both "downstream impairment observed" and "the permitted facility is contributing to the impairment." The "impairment" must be linked to discharge under the permit before the permit can be re-opened and modified.

Finding of Fact No. 28. An additional finding should be included to recognize that the Petitioners did not present evidence of a measurable decrease in crop or livestock production at the 4W Ranch attributable to discharge under the Palm Tree Permit. Tr., Vol. I, at 111-12. Further, no evidence was presented of a measurable decrease in crop or livestock production on any other property. To the contrary, Mr. Moore provided evidence of a noticeable increase in agricultural production due to application of the discharge water. Tr., Vol. II, at 339.

Conclusion of Law 3. As written, the final conclusion of law is not supported by the findings of fact. Evidence was presented that the equation represents the line on the Hanson Diagram between “no” and a “slight to moderate” reduction in infiltration. But, no evidence was presented that would indicate that a slight to moderate reduction in infiltration translates to a “measurable decrease in crop or livestock production.” Indeed, whether a slight reduction in infiltration will cause a “measurable” decrease in crop or livestock production depends entirely on a comparison of production before application of the water and production after application. Site-specific conditions, including whether the soil can tolerate higher SAR levels, whether the soil has limited infiltration capacity under existing or natural conditions, whether the water is applied directly and continuously through irrigation, and whether the marked increase in soil moisture through soil irrigation more than offsets a slight decrease in infiltration, are key to such a finding. The conclusion does not acknowledge these factors.

Further, there was no evidence presented—and no finding of fact supports—the conclusion that water discharged under the Palm Tree Project permit has caused anything other than an increase in crop or livestock production, let alone a “measurable” decrease. Thus, BBC has proposed revisions that acknowledge that the effect of discharging water in the slight to moderate range on the Hanson Diagram—i.e., whether such discharge translates to a measurable decrease in crop or livestock production—is dependent on site-specific conditions.

CONCLUSION

BBC respectfully asks the Council to consider the attached revisions to the Proposed Findings. In particular, BBC asks the Council to explicitly remand the permit to DEQ to implement the new condition. DEQ has the expertise to determine how the limitation should be enforced, and has already been contemplating the relationship between EC and SAR in its draft Ag Use Protection Policy. The Council has the discretion and administrative authority to include a remand without further hearing. A remand order would not change the EQC's decision to impose the condition, but would allow DEQ to fill in the much-needed details on how the EC/SAR ratio should be implemented.

DATED this 6th day of December, 2006.



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CERTIFICATE OF SERVICE

I certify that on December 6th, 2006, a copy of the foregoing document was filed with the Environmental Quality Council, and served on the following by:

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