



July 12, 2019

Sent via ePermit system

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Rosebud Mine Area B
PO Box 99
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Permit ID: C1984003B
Revision Type: Permit
Permitting Action: Deficiency
Subject: C1984003B; Round 4 Acceptability Deficiency

Dear Dicki:

The Department of Environmental Quality (DEQ) has completed its fourth-round acceptability review regarding Western Energy Company's application for SMP C1984003B. The following deficiencies must be adequately addressed before DEQ can determine the application acceptable:

ARM 17.24.302(1): Please submit CAD .dwg files of Exhibit A, B, D, J, L, T1, and T2, and V1-V4 to match updated pdf files previously submitted.

ARM 17.24.303(1)(o): Please identify where the Surface Lease information for Section 36, T1N, R30E is located or upload the information under Status of Private Mineral/Surface Estate.

ARM 17.24.303(1)(s): Numerous discrepancies remain in Table 303-3. Pursuant to ARM 17.24.302(1), WECO must change BXS 84 from year 10 to 18, BXS 76 from year 10 to 15, BXS 65 from year 19 to 11, BXS 89 from year 11 to 19 and add mine cuts BXS 69-2, 70-2, 71-2, 10-1 and 92-2 to the table.

ARM 17.24.304(1)(e): The following issue needs to be addressed with the baseline information presented in "Appendix B – Baseline Hydrology Data.pdf":

The March 2017 surface water field sheets are included twice, on pages 2,819-2,862 (between the February and April field sheets) and 2,896-2,939 (between the April and May field sheets) of the pdf. Please remove the second set of March field sheets which is out of chronological order.

ARM 17.24.305(1)(r): "Area B AM5 Exhibit C Postmine Vegetation 2017-09 SP.pdf" does

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not use the most recent version of the postmine topography. The locations of the proposed postmine revegetation communities must be revised for the respective landscape positions. DEQ acknowledges that updates of this exhibit are on hold pending PMT resolution.

ARM 17.24.308(1)(a): The size of stockpile SS-6 is depicted to be 22 acres on Exhibit A and listed as 13 acres on Table 308-1. Please update Table 308-1 to reflect the increase in size depicted on Exhibit A.

Exhibit A depicts a haul road configuration that does not correlate with the mine sequence. The main haul road to the BXS pits conflicts with the timing and mining of the BX 6 through BX 19. Please correct the inaccurate information depicted on Exhibit A or, pursuant to ARM 17.24.308(1), WECO must describe the engineering techniques used to mine at the same time as the main haul road is proposed to be used.

Exhibit A depicts a ramp configuration that does not correlate with the mine sequence. The ramp to BXS 70-1 through 77-1 conflicts with the timing and mining of the BXS 89-1 through 92-1. The inaccurate information depicted on Exhibit A must be changed or, pursuant to ARM 17.24.308(1), WECO must describe the engineering techniques used to mine at the same time as the ramp is proposed to be used.

Exhibit A depicts a configuration of "SS" stockpiles 14, 15, and 16 that does not correlate with the mine sequence. Current stockpile locations conflict with timing and mining of BSX 89 through 91 for SS 14 and 15 and BXS 89-1 through 91-1 for SS 16. Pursuant to ARM 17.24.308, WECO must describe techniques used to maintain stockpiles and mine at the same time or relocate proposed stockpiles to cuts that would not delay mining sequence.

ARM 17.24.313(1)(c): DEQ acknowledges Western Energy's commitment to submit a revised bond after the PMT plan is acceptable.

ARM 17.24.313(1)(f)(i): In "Exhibit V1-V14 0485327 Western Energy Area B Conceptual Drainage Plan Set 26-FEB-2019.pdf" on Exhibits V-6 through V-11, please include the boundaries of highwall reduction and the pit on the cross sections.

The drainage design in Exhibit V-10 shows a drainage profile for the Richard Coulee South Fork which is likely to be unstable through the highwall reduction area (subdrainage Rich 24 on Exhibit B). Please revise the PMT in this area to provide a concave longitudinal profile from native into reclamation by raising the elevation of the valley bottom near the stream confluence at E 2,662,753; N 580,875.

Additionally, a nick point was identified in the PMT where the Richard Coulee North Fork crosses the pit boundary (E 2,664,341; N 585,943), although it is not visible in Exhibit V-9. Please adjust the 3,560 and 3,570 contour lines to accommodate a more even transition in the channel profile.

ARM 17.24.314(2)(a): The CAD file was not submitted for "Area B AM5 EXHIBIT D Hydro Control 2019-01 SP.pdf." DEQ cannot complete its review without this information.

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The hydro control plan shown in the pdf does not match haul road configuration in T1N, R40E, S16. Please correct this discrepancy.

Approximately 75 acres of undisturbed drainage southwest of culvert Rich-5 is impounded by the haul road embankment. Please include a drainage control structure (culvert or diversion) to convey runoff from this area downstream towards PO-129A. Additionally, approximately 50 acres of undisturbed drainage (Rich 69) north of culvert Rich-7 is impounded by the Richard 2.0 haul road embankment. Please include a drainage control structure to convey runoff from this drainage downstream into drainage Rich 64.

Culverts Lee-1, Lee-4, Rich-3, Rich-5, Rich-7, and Rich-9 are not aligned with the bottom of the drainage. Please change the alignment of these culverts to match the drainageway.

ARM 17.24.314(3): The following deficiencies were identified in "Appendix O B AM5 PHC R3 3-4-2019.pdf":

Section 3.2.9 and Section 3.3.8 should be updated when DEQ finalizes the AVF determination for Richard Coulee.

Section 3.3.4.5 states wetland G300 and G602 will "likely" be disturbed by the haul road. The haul road design shows wetland G300 and the eastern portion of G602 being buried by 30 to 40 feet of fill. Please describe this impact as a certainty instead of a probability.

Table 36 does not include analysis of impacts to water rights located near exiting permitted portions of Area B. As this PHC will supersede the existing ABC PHC in the Area B permit if approved, this PHC must include analysis of all impacts from Area B. If impacts from existing mining are not altered by AM5, the PHC should state this.

Table 36

- In general, "adequate supply for livestock use" or "adjacent to mine passes" does not sufficiently describe the anticipated impacts to a water user. Please describe the actual probable impact in terms of quality and quantity, or reason for lack of impact in the rationale column.
- WR 42A 145442 00 – Listed as impacted with rationale "adjacent to mine passes." This stock dam is located in Rape Coulee with minimal disturbance by soil stockpiles upgradient, thus is unlikely to be impacted.
- WR 42A 8206 00 – Listed as impacted with rationale "adjacent to mine passes." This spring is located in an upland area away from any mine passes and is not likely to be impacted.
- WR 42A 8207 – Listed as not impacted, however a portion of this stock pond lies within the disturbance area around a topsoil stockpile. Please revise this water right to state it is impacted by surface disturbance or change the disturbance boundary to exclude this pond

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from the disturbance area.

- WR 42KJ 183306 00 – Listed as not impacted, however a sediment pond is planned for this location, existing Area B highwall reduction disturbance impacts the location of the dam, and the Richard Haul Road is immediately adjacent to this stock pond.
- Several water rights are listed as not impacted, but are within the disturbed area of an existing permit. All water rights impacted by coal mining should be listed as impacted. The source of the impacts (i.e. Rosebud Area B, AM5, Big Sky Area B) can be described in comments or rationale. Impacts from AM5 should be called out separately from other coal mining related impacts. For example, WR 42A 27319 00 is listed as “drainage not impacted by mining”. This is incorrect as this drainage was mined by Big Sky Area B.

Table 50 and Table 51 contain some of the same wells with conflicting impact assessments. Please combine these two tables and present the analysis of impacts including AM5. Impacts from existing and previous mining should be identified, but called out separately from AM5 impacts. In some cases, impacts which have likely already occurred are not described, or are described in the future tense. Please accurately describe the existing impacts.

Table 50

- The “Potentially Impacted” column is listed as unknown for many wells with a total depth recorded. Please assess the probable impacts at these wells using the assumption that these wells are completed to their total depth. Additionally, for many wells with unknown impacts listed, the impacts or lack thereof can be reasonably inferred solely from location even in the absence of well construction information. Please assess impacts at all locations where it is reasonable using professional judgement.
- In the comment column, please describe the actual probable impact in terms of water quality and quantity, or reason for lack of impact.
- 14252 – This well is located inside the Area A permit and is visible on aerial photos, but is listed as unknown under Potentially Impacted. Mining near this well occurred from 1987 to 1995, thus any impacts should already have been observed.
- 192519 – Well log indicates well is located in T2S, not T2N as recorded in GWIC.
- 212086 – This well will be mined through by AM5.
- 12019 – This well is located in the Big Sky Area B mine footprint and has likely been mined through.
- 42A 52220 00 – This well will be mined through by AM5.
- 42A 56520 – This well is completed in Big Sky Area A mine spoil and has been converted

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to stock water use (ASPW1).

- 42A 5968 – This Big Sky Mine production well was abandoned during reclamation.

Table 51

- In the rationale column, please describe the actual probable impact in terms of water quality and quantity, or reason for lack of impact.
- Wells 231 and BUN9100 (and water rights numbers which may be associated with these wells) are listed as impacted with the rationale “within disturbance area” but are located such that disturbance of these well could possibly be avoided. Please consider if it is feasible to avoid disturbance of these wells, and if so, please commit to avoiding disturbance of these wells.
- 212086 – Well is located at GPS coordinates on well log, TRS-quarters information is incorrect. Well location is still within AM5 mining footprint.

The analysis in Attachment R still needs additional explanation and corrections:

- While similar in many respects, the two types of analyses performed use distinct methods and assumptions. On page 2, assumption 1) under Analysis Conducted states recharge was ignored, but the analysis in Figure R-3 included recharge. Please describe the mass loading projection method and concentration change projection method separately.
- There is no explanation of the origin and justification for the selected Transmissivity value of 13. Please include a discussion of the source of this value.
- There are values contained in the tables on Figure R-1 and R-2 which are not used in the calculations (Flow mil/day). Please remove unused values.
- In Figures R-1 and R-2 the units for “Init C” are listed as gm/L. Please correct this typo.
- While a technical audience can follow the calculations presented in the Attachment R figures, the explanation of the analysis in the text should be summarized in such a way that a layperson can reach a reasonable level of understanding of the analysis and conclusions.
- In Attachment R, Figure R-1, footnote * states that the “Init C” variable is based on alluvial groundwater quality. However, the flow tubes represent flow through the Rosebud Coal and overburden, not alluvium. Please change “Init C” to a TDS value representative of baseline water quality in the Rosebud Coal and overburden.

ARM 17.24.314(5): DEQ will evaluate if there are cumulative impacts of the Rosebud and Big Sky mines on the Rosebud Creek drainage. To support this evaluation please provide an estimate of the postmine equilibrium spoil water quality and the postmine steady state groundwater flux out of spoil in the Rosebud Creek drainage for Area B, Area D, Area E, and

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Pit 6. WECO may also provide the same estimates for Big Sky Mine Area A and Area B.

ARM 17.24.315(1): Please include the design plan for proposed sedimentation pond LCT-1.

ARM 17.24.325(2)(b): DEQ has not yet made written findings concerning this rule. Further evaluation of the subsequent rules will be completed after DEQ's determination is complete.

ARM 17.24.501(4)(c): Changes made to the PMT in the northeast quarter of Section 28 increased slope diversity, but the changes do not result in a concave slope profile as requested. DEQ evaluated potential changes to this slope and creating a concave profile would require removal of spoil from this area. This material could potentially be used to address changes necessary to correct the drainage profile of the Richard Coulee South Fork [See ARM 17.24.313(1)(f)(i)].

DEQ also evaluated moving the drainage divide between Rich-7 and the main stem of Richard Coulee in Section 29 to closer to its premine location, and determined this change could likely be accomplished while balancing spoil volumes within an area of an approximately 1,500 feet radius to the north and east. As significant changes to the PMT will be necessary immediately to the southeast of this divide to correct the drainage profile of Richard Coulee South Fork, adjusting the location of this drainage divide could be incorporated into the revision of the PMT in this general area.

ARM 17.24.605(3): Please remove the reference to Exhibit 01 from "Typical Culvert Cross Section" on page 605-4 and include details on riprap apron under ARM 17.24.605.

ARM 17.24.638(2)(a): The life of mine disturbance limits in portions of Sections 13 and 24 are located a substantial distance from the mine passes and haul road. There appears to be no reason for disturbance to occur in much of this area. Please revise the limits of disturbance in this area to more accurately reflect the actual expected area of disturbance, or provide a description of the activities which are expected to disturb these areas.

ARM 17.24.751(2)(f): The updated Appendix N-1 referenced in the response letter was not uploaded to the e-Permit system. As a result, this deficiency could not be evaluated during this round.

Sites proposed for wetlands mitigation (Appendix N-1) are exclusively in the Armells Creek drainage, whereas the majority of wetland likely to be disturbed are in the Rosebud Creek drainage. While wetlands in adjacent drainages can be used for mitigation there should be some mitigation alternatives in the Rosebud Creek drainage.

Appendix N-1 Section 3.3, p. 3-5, states one of the waters (G700) will be impacted by "development of the high wall." This term is unclear as to the extent of the impact, and no mention is made of water 4-4/8 which will also be impacted by mining. Please state that waters 4-4/8 and G700 will both be mined out.

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Based on the proposed mine plan, the descriptions in Appendix N-1, Table 3-3, are not accurate for several sites. These wetlands sites are expected to be impacted as follows:

G011: Disturbed – buried under soil stockpile

G012: Within disturbance limits – likely to be disturbed for access road to soil stockpile

G300: Buried under haul road fill

G602: Partially buried by haul road fill

G400: Partially disturbed by highwall reduction, haul road fill, and excavation for pond Rich-4

G500: Partially disturbed by highwall reduction and excavation for pond Rich-6

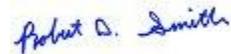
Please verify that this table is consistent with the expected impacts of the proposed mine plan.

ARM 17.24.801, 802, 804, 805, and 806: Appendix Q has now been included. Subsequent material is contingent on DEQ's determination pursuant to ARM 17.24.325(2)(b).

Upon receipt of satisfactory responses to these deficiencies, DEQ will determine the application to be acceptable.

Please feel free to contact Robert D. Smith at 406-444-7444 with questions regarding this letter.

Sincerely,



Robert D. Smith, Permit Coordinator

Coal Section

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