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September 30, 2016

Sent by U.S. Mail and Facsimile
Ms. Jeanne Goodman, Chief Engineer
Department of Environment and National Resources
Water Rights Program
Foss Building
523 East Capitol
Pierre, SD 57501-3182

Re: *In the Matter of the Application of Croell Redi-Mix*
Application No. 2745-2

Dear Ms. Goodman:

Please find enclosed the original *Petitioners' Proposed Findings of Fact, Conclusions of Law, and Final Decision* in the above-referenced matter. By copy of this letter, service is intended on the individuals listed on the Certificate of Service by U.S. Mail and Electronic Mail.

If you have any questions or comments, please advise. Thank you.

Sincerely,

BANG, McCULLEN, BUTLER,
FOYE & SIMMONS, L.L.P.

Michael M. Hickey

MMH:bah
Enclosures
CC: w/enc. Individuals listed on the Certificate of Service

STATE OF SOUTH DAKOTA
BEFORE THE WATER MANAGEMENT BOARD

IN THE MATTER OF THE APPLICATION OF CROELL REDI- MIX, APPLICATION NO. 2745-2

Petitioners' Proposed Findings of Fact, Conclusions of Law, and Final Decision

The above-entitled matter came on for hearing before the South Dakota Department of Environment & Natural Resources, Water Management Board, on July 7, 2016, in Pierre, South Dakota. The Applicant, Croell Redi-Mix, appeared through its counsel, Thomas Brady and Steven Iverson. Ann Mines-Bailey appeared on behalf of the Department of Environment & Natural Resources. Michael Hickey and Kelsey Parker appeared on behalf of Petitioners Duane Abata, Don Burger, Pat Hall, and Barrett Wendt.

The Water Management Board having heard the testimony of the witnesses and the evidence introduced and having considered the arguments of the parties, and having hereinbefore made and announced its oral Decision which is incorporated herein by this reference, now hereby makes and enters the following:

FINDINGS OF FACT

1. The Decision is incorporated herein by reference. In the event of conflict between the Decision and these findings, the Decision controls.

2. Croell Redi-Mix ("Applicant") filed a Water Permit Application No. 2745-2 to appropriate 19.6 acre-feet of water annually from the Deadwood Aquifer. The location of the site is approximately three miles outside of Rapid City

on US Highway 16 (NE1/4SW1/4, Section 9, T1S, R7E, Pennington County, South Dakota.)

3. Croell proposes using a well that would be approximately 1,150 feet deep, with a maximum diversion rate of .33 cubic feet per second (150 gallons per minute).

4. According to Croell, the primary purpose of the Water Permit is for dust control on a proposed quarry. However, Applicant has not obtained a construction permit or mining permit to operate a quarry on the proposed site from Pennington County.

5. Ken Buhler, a staff engineer with the Water Rights Program at DENR, reviewed the characteristics of the aquifer, and determined that water was available for appropriation and that there would be no potential unlawful impairment to the existing rights in the area. Mr. Buhler summarized his findings in a report submitted to the Chief Engineer.

6. Based on Mr. Buhler's report, the Chief Engineer filed a recommendation approving the application with certain qualifications.

7. The recommendation was opposed by Duane Abata, Don Burger, Pat Hall and Barrett Wendt ("Petitioners"). Petitioners filed a petition opposing the Application on April 8, 2016.

8. Petitioners opposed the permit because there is not a sufficient amount of unappropriated water available in the Deadwood Aquifer to satisfy Applicant's proposed use, there would be an unlawful impairment of existing water rights, and the proposed use is not in the public interest.

9. On July 7, 2016, a hearing was held before the South Dakota Water Management Board.

10. At the hearing, Mr. Buhler testified that the annual recharge to the Deadwood Aquifer in the Black Hills is approximately 14,500 acre-feet a year. The estimated well withdrawal is approximately 2,160 acre-feet a year.

11. However, Mr. Buhler testified that it would be highly unlikely that water that is being recharged north of Deadwood would have any affect on the site proposed in the application.

12. When making his recommendation, Mr. Buhler looked at the impact of the permit on the entire Deadwood Aquifer and did not isolate the impact on the local area.

13. Mr. Buhler did not discuss or analyze the public interest.

14. Applicant called Kyle Frisinger ("Mr. Frisinger"), an aggregate manager in South Dakota and northern Wyoming. Mr. Frisinger manages sand and gravel pits and rock quarries in South Dakota and in northern Wyoming.

15. Mr. Frisinger testified that the water would be used for rock crushers, dust control on haul roads, and for reclamation purposes.

16. Mr. Frisinger alleged the water would also be used to water cows on the property. However, Mr. Frisinger informed the Board that Applicant did not currently have any cattle, nor did they have any idea of how many cattle they may have or how much land was available for cattle to run.

17. Mr. Frisinger guessed the amount of water Applicant would need for the site by reviewing the DENR website and by contacting the owner of Bear County USA, who has an existing well on their property.

18. Mr. Frisinger guessed that he would need 5.5 million gallons of water for industrial use and .9 million gallons of water for agricultural purposes per year.

19. Applicant did not indicate how many hours a day the quarry would operate, or how much water they would need each day.

20. After reviewing the application and analyzing relevant data, Arden Davis, Ph.D. ("Dr. Davis"), prepared and submitted a report opposing the Water Permit Application. Dr. Davis appeared at the hearing and testified about his findings and recommendations.

21. Dr. Davis has a bachelor's degree in geology from the University of Minnesota and a Master's and Ph.D. in geological engineering from the South Dakota School of Mines. Dr. Davis taught for thirty years at the South Dakota School of Mines and Technology, teaching ground water, geological engineering, and engineering design.

22. In his experience, Dr. Davis has extensively studied the hydrological properties of aquifers in the Black Hills area.

23. Specifically, Dr. Davis has analyzed water supply, water quality, well drilling, and log wells. Dr. Davis has published various papers and journals on the same subjects.

24. Dr. Davis' analysis and recommendation focused on the locality of the proposed well, compared to Mr. Buhler who focused primarily on the Deadwood Aquifer as a whole.

25. In Dr. Davis' testimony, he explained that the Deadwood Aquifer is the least productive of aquifers in the area (compared to the Madison or the Minnelusa). The median production is about 15 gallons per minute, one-tenth of the production requested by the Applicant.

26. The Deadwood Aquifer spans from North of Deadwood, South Dakota, to Nebraska. It covers areas in North Dakota, Montana and most of western South Dakota (except in the central Black Hills where it has been eroded away). Just in Pennington County, the aquifer underlies approximately 1.4 million acres.

27. Importantly, Dr. Davis explained that the permeability and the transmissivity of the Deadwood Aquifer vary greatly from location to location. Therefore, the productivity of a well can vary greatly from location to location. One well may produce 150 gallons of water per minute, but a nearby well may only produce 10 gallons of water per minute.

28. The variability of the permeability and the transmissivity of the aquifer should be considered when predicting the long-term effects of pumping water over an extended period of time.

29. Dr. Davis disputed Mr. Buhler's conclusion that the estimated recharge rate of the Deadwood Aquifer would indicate that there is unappropriated water available.

30. Mr. Buhler analyzed the entire Black Hills recharge rate compared to Dr. Davis who focused on the recharge rate which would actually affect the proposed well site. Dr. Davis explained that the Deadwood Aquifer's recharge area near the quarry is very narrow. Conservatively, the recharge rate in the locality of the quarry would only be 17 acre-feet per year.

31. Applicant's request for 19.6 acre-feet per year would exceed the recharge rate in the locality (17 acre-feet per year). Therefore, there would not be enough unappropriated water sufficient to supply Applicant's proposed usage.

32. Further, there are approximately 30 existing wells in the nearby vicinity of the proposed well site. Applicant's proposed use would unlawfully impair the existing rights of other neighboring wells.

33. Dr. Davis applied the Theis Equation, a mathematical model to determine transient flow of water, and concluded that the proposed water permit would have a detrimental effect on nearby wells.

34. Finally, Dr. Davis had serious concerns about excessive amounts of radon and radium in the water. Neighborhoods in southwest Rapid City have to blend their water to get the concentration down on radium to a level that meets drinking water standards. This testimony establishes an adverse impact on surrounding users of water and would not be in the public interest.

35. The US Geological Survey's information from the Black Hills Hydrology Study shows a mean concentration of about 1,970 picocuries per liter for the Deadwood Aquifer, but the US EPA recommends 4 picocuries per liter

as the action level for radon gas in homes. Nearby, in a Deadwood Aquifer well, there was 222 radon concentration of 6,600 picocuries per liter.

36. There is a high likelihood that Deadwood Aquifer wells in the proposed site contain radon and radium. Dr. Davis recommended that a plan should be implemented to prevent accidental releases from the site.

37. Given the recharge rate, the potential effects to existing wells, and the radon and radium concerns, Dr. Davis recommended that a pumping test be done to define the Deadwood Aquifer's properties at the proposed site.

Based upon the forgoing Findings of Fact, the Water Board hereby makes and enters the following:

CONCLUSIONS OF LAW

1. That the Department of Environment and Natural Resources Water Board has jurisdiction over the subject matter and parties to this matter.
2. To the extent that any Finding of Fact is improperly designated as such, then the same should be considered as a Conclusion of Law. Likewise, to the extent any Conclusion of Law is improperly designated as such, then it should be considered as a Finding of Fact.
3. An applicant may apply for a permit to appropriate water.

   SDCL § 46-2A-1.
4. Within 60 days of receipt of a completed application, the chief engineer must recommend approving, denying, or deferring the application. "The

recommendation shall include any terms, conditions, restrictions, qualifications, quantifications, or limitations on perpetuity which are consistent with this chapter, necessary to protect the public interest and related to matters within the jurisdiction of the chief engineer or the board." SDCL § 46-2A-2.

5. Any person who opposes the recommendation must file a petition with the chief engineer and the applicant. SDCL § 46-2A-23.

6. The Board conducted a hearing on this application for appropriation of water under the authority of SDCL Ch. 46-2 and Ch. 46-2A.

7. The Applicant had the burden of proof to establish all of the requirements necessary to obtain a permit under the provisions of SDCL § 46-2A-9.

8. SDCL § 46-2A-9 provides,

> A permit to appropriate water may be issued only if there is reasonable probability that there is unappropriated water available for the applicant's proposed use, that the proposed diversion can be developed without unlawful impairment of existing rights and that the proposed use is a beneficial use and in the public interest.

9. The Applicant did not meet its burden.

10. The Applicant has not established that there is a reasonable probability that there is unappropriated water available for the Applicant's use.

11. The Applicant has not established that the proposed diversion can be developed without unlawful impairment of existing rights.

12. The Applicant has not established that the water use would be beneficial, or in the public interest.

13. There is not enough unappropriated water available for Applicant's proposed use in Application No. 2745-2. The proposed use would unlawfully impair existing rights of other permit holders and is not in the public interest.

14. Application No. 2745-2 (Croell Redi Mix, Inc.) is **DENIED**.

LET A FINAL DECISION BE ENTERED ACCORDINGLY.

FINAL DECISION

Application No. 2745-2 is hereby **DENIED** as the Applicant has failed to establish that there is a reasonable probability that unappropriated water is available, the proposed use can be developed without unlawful impairment of existing rights, and the proposed use is in the public interest.

Dated this ____ day of _____, 2016.

SOUTH DAKOTA DEPARTMENT OF
ENVIRONMENT & NATURAL RESOURCES,
THE WATER MANAGEMENT BOARD

BY: _____
Jim Hutmacher, Chairman