

EL PASO COUNTY



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MS-17-003 SBR Racing Minor Subdivision

Reviewed by: M. Cole Emmons, Senior Assistant County Attorney
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FINDINGS AND CONCLUSIONS:

1. This is a minor subdivision proposal by Kerry Burt ("Applicant") to subdivide a 40 acre parcel with the address known as 21430 Spencer Road, Calhan, Colorado ("subject property") into 2 lots. Lot 1 will consist of 35.01 +/- acres which contains a current commercial go-kart racing business; and Lot 2 will consist of 4.144 acres which contains a current existing residence and existing well to be retained by the property owner. There is a concurrent rezoning action pending and the Applicant proposes that Lot 2 (the 4.144 acre parcel) will be rezoned to an A-5 ("Agricultural") zoning district. Lot 1 will remain zoned A-35 ("Agricultural") and there is a concurrent special use application pending for Lot 1 to bring the current property use into conformance with the El Paso County Land Development Code.

2. As noted in the *Water Resources and Water Quality Report for Seigel Boys Racing, LLC Minor Subdivision* dated August 6, 2019, prepared by Monson, Cummins & Shohet, LLC ("Water Resources Report"), the Applicant is proposing to retain the current dry lot status for Lot 1 (the 35.01 acre commercial lot). The Applicant has provided for the source of water for Lot 2 (the 4.144 acre residential parcel) to derive from an individual on-lot well existing on the subject property, withdrawing from the not nontributary Denver aquifer, identified as Well Permit No. 115609, subsequently re-permitted as Well Permit No. 83709-F, as required by the Replacement Plan—Determination of Water Right No. 3718-BD by the Colorado Ground Water Commission ("Replacement Plan"). The Applicant provided a Water Supply Information Summary setting forth their water demand for Lot 2 at 0.3 acre-feet per year for a period of 300 years. Applicant must be able to provide a supply of 90 acre-feet of water (0.3 acre-feet/year x 300 years) to meet the County's 300 year water supply requirement.



The following table is derived from tables and information in both the Water Resources Report and the State Engineer's letter, and summarizes the Denver Basin water supply available underlying the Applicant's property as follows:

Aquifer	Determination of Water Right	Total Water Adjudicated (Acre-Feet)	Total amount of acre-feet per year (100 years)	Total amount of acre-feet per year (300 years)
Denver (NNT)	3718-BD	1,360	13.21 ¹	4.40
Arapahoe (NT)	3717-BD	1,430	14.3	4.76
Laramie-Fox Hills (NT)	3716-BD	1,530	15.3	5.1

3. In a letter dated September 16, 2019, the State Engineer reviewed the submittal to subdivide approximately 40 acres into 2 lots, 1 lot of 35.01 acres and a second lot of 4.144 acres. The State Engineer notes that the estimated water requirement for Lot 2 is "0.3 acre-feet per year for in-house residential purposes, but may increase to 1.0 acre-foot for additional domestic uses." The source of water for Lot 2 is Determination of Water Right and Replacement Plan No. 3718-BD. The engineer states that the "replacement plan allows withdrawal of 0.3 acre-feet annually from the Denver Aquifer for in-house use only in one single family dwelling until such time as the Applicant demonstrates replacement water is being delivered from Arapahoe or Laramie-Fox Hills aquifer sources so as to allow the well to pump a total of 1 acre-foot annually. The Denver aquifer water will be withdrawn through an existing well, currently operated under well permit no. 115609, for a period of 300 years. Once withdrawal from the Denver aquifer well increases to 1 acre-foot annually the use of the well will be limited to domestic use (in-house use in 1 single family dwelling, landscape and gardens, domestic animal watering)." The State Engineer referenced communication with Applicant's attorney, and as also cited in the Water Resources Report, that the "Applicant currently intends to continue to operate his business on Lot 1 as a 'dry lot' (i.e. without a demand for water supplied by the lot owner), which could continue indefinitely." The State Engineer further states that the "Applicant may, if economically feasible and sensible at some point in the future, construct a well(s) to the underlying nontributary Arapahoe and/or Laramie-Fox Hills aquifer to provide water to Lot 1."

The State Engineer's Office previously issued Well Permit No. 115609 to the Applicant. The Engineer states that pursuant to Water Right No. 3718-BD and the Replacement Plan, the existing well permit "no. 115609 must be re-permitted to operate

¹ Determination of Water Right No. 3718-BD adjudicates a total of 1,360 acre-feet to the Subject Property (or 13.6 acre-feet per year for a total of 100 years); however, the amount of withdrawal is reduced to 1,321 acre-feet (or 13.21 acre feet per year for 100 years) to account for the water historically withdrawn by the existing exempt well from beneath the overlying land. See Determination of Water Right No. 3718-BD, page 2, paragraph 8. Therefore, the annual withdrawal from the Denver aquifer for 300 years is 4.4 acre-feet. The amount of 1,321 acre-feet will be referenced in the remainder of this review.

pursuant to the determination and replacement plan.” The Applicant recently submitted an application to re-permit the well which was approved by the State Engineer’s Office on October 10, 2019. The new Well Permit No. is 83709-F.

Finally, the State Engineer stated that “pursuant to Sections 30-28-136(1)(h)(I), C.R.S., it is our opinion that the proposed water supply for Lot 2 is adequate and can be provided without causing injury to water rights and the proposed water supply for Lot 1 that relies on Arapahoe aquifer and/or Laramie-Fox Hills aquifer wells is adequate and can be provided without causing injury to water rights. To the extent that Lot 1 is proposed to permanently be a ‘dry lot’ with no proposed water source our office has no comments on the adequacy of the water supply for Lot 1 since none is proposed.” (Emphasis added).

4. Determination 3718-BD. This Determination adjudicates water in the not nontributary Denver aquifer underlying the 40 acres of this subdivision located within the Upper Black Squirrel Creek Designated Ground Water Basin. The Determination noted an existing small-capacity well, Permit No. 115609, located on the property and is permitted to withdraw 0.3 acre-feet per year. Well Permit No. 115609 was required to be cancelled and a new well permit issued, and that has been completed pursuant to the Replacement Plan. Determination 3718-BD adjudicates an allowed average annual amount of withdrawal of 13.21 acre-feet based on a 100 year aquifer life (4.40 acre-feet per year for 300 years). The Determination limits beneficial uses to the following: domestic (in home, irrigation of lawns and gardens, domestic animals), commercial, irrigation, replacement, and fire protection.

5. Replacement Plan-- Determination 3718-BD. The Replacement Plan states the Denver aquifer water will be withdrawn through the existing well on Lot 2 utilizing Well Permit No. 115609 which has been re-permitted to Well Permit No. 83709-F. The use of the well will be limited to “in-house use in one single family dwelling.” The allowed annual amount of ground water to be withdrawn from the aquifer by the well operating under the plan shall “not exceed 0.3 acre-feet until the Applicant has demonstrated in accordance with the terms of this replacement plan that adequate return flows and/or recharge exists to replace depletions from the withdrawal of the additional 0.7 acre-foot annually, for a total withdrawal of 1 acre-foot annually.” The Replacement Plan requires that replacement of depletions must be provided as described in Exhibits A-1 and A-2 as referenced in the Replacement Plan, which is attached hereto at Exhibit 1. Exhibit A-1 shall be utilized while the pumping of the well is 0.3 acre-feet annually. At such time as the pumping rate is increased to a total of 1.0 acre-feet annually, the depletions described in Exhibit A-2 shall be used. Further, in the event the withdrawal is increased to 1 acre-foot annually, “the use of the well will be limited to domestic use (in-house use, irrigation, landscape and gardens, domestic animal watering).” The Replacement Plan indicates that return flows from in-house use shall come through individual on-lot non-evaporative septic systems located on the property, and specifically states: “[t]o assure adequate return flows from the Denver aquifer well for replacement of the depletions resulting from

in-house use, the well must be serving an occupied single-family dwelling that is generating return flows via a non-evaporative septic system.” The Property is located within the Upper Black Squirrel Creek Ground Water Management District, and the District did not submit either recommendations or objections to the Ground Water Commission for any of the Determinations. The Ground Water Commission found that the Replacement Plan “would not cause unreasonable impairment of water quality of the alluvial aquifer.” Finally, the Plan includes typical metering, monitoring, and reporting requirements.

6. Determinations 3716-BD & 3717-BD. Applicant also adjudicated water rights under the subject property in the nontributary Arapahoe aquifer in Determination No. 3717-BD and in the nontributary Laramie-Fox Hills aquifer in Determination No. 3716-BD. 3717-BD adjudicated 1,430 acre-feet of Arapahoe aquifer water or 14.3 acre-feet per year based on 100 years, which would be reduced to 4.77 acre-feet per year for 300 years. 3716-BD adjudicated 1,530 acre-feet of Laramie-Fox Hills aquifer water or 15.3 acre-feet per year based on 100 years, which would be reduced to 5.1 acre-feet per year for 300 years.

7. NOTES: It is important to clarify what is and is not covered in this water review, to emphasize and distinguish some aspects of the Replacement Plan, and to provide information that can be used to guide future changes of use and withdrawals. This water review only covers the proposed water supply for Lot 2 based on the proposed use and the Well Permit No. 83709-F, which allows for an annual withdrawal of 0.3 acre-feet from the not nontributary Denver aquifer. While this review provides information regarding potential future changes of use and withdrawal of water which would affect both Lots 1 and 2, it does not make any findings or recommendations as to sufficiency of water for Lot 1, which is proposed as a “dry lot” with no requirement for water or sewer service other than as historically been provided, i.e., bottled water and portable toilets. This review also does not make any findings or recommendations as to the speculative future increase in withdrawal from the Denver aquifer for up to 1.0 acre-feet per year, which is addressed in the Replacement Plan.

Applicant’s water attorney, Chris Cummins, by e-mail dated October 30, 2019, confirmed Applicant’s intent that Lot 1 is a dry lot and Lot 2 is “limited to only 0.3 annual acre-feet of pumping for in-house use, consistent with the approved replacement plan assuming no nontributary wells are drilled.” He also clarified that any future nontributary wells in the Arapahoe or Laramie-Fox Hills aquifers would be on Lot 1. Finally, he indicated the Applicant understands the need to return to the County in the future if there is a desire to use this nontributary water on Lot 1, which would allow for increased withdrawal and additional uses for the Denver aquifer well on Lot 2.

As indicated above, the use of 0.3 acre-feet per year of not nontributary Denver aquifer water on Lot 2 is limited to only in-house use. No irrigation or stock watering is allowed as indicated in both the Replacement Plan and Well Permit No. 83709-F. Pursuant to the

Replacement Plan, in the future, in order to increase withdrawal of this Denver aquifer water up to 1.0 acre-feet per year, a well or wells would have to be drilled into the Arapahoe and/or Laramie-Fox Hills aquifer(s) on Lot 1 in order to generate return flows from indoor commercial drinking and sanitary uses, irrigation, and domestic animal watering uses. This then would allow the uses of the water on Lot 2 to change to domestic use, which would continue to be in-house use, but would also include irrigation, landscape and gardens, and domestic animal watering. In order to drill the Arapahoe and/or Laramie-Fox Hills aquifer well(s) on Lot 1 and thereby be able to increase both the use and amount of withdrawal of the Denver aquifer well on Lot 2, Applicant, its successors and assigns, will have to apply for a change in water supply from El Paso County Planning and Community Development Department and have that proposed water supply reviewed by the State Engineer's Office, the Health Department (as to quality for commercial uses on Lot 1), and the County Attorney's Office, and approved by the Board of County Commissioners (or other approval as may otherwise be allowed at that time). Applicant, its successors and assigns, likely also will have to submit additional evidence to the Colorado Ground Water Commission staff and the State Engineer's Office, and Well Permit No. 83709-F likely will have to be amended.

8. Section 8.4.7.B.10.g. of the El Paso County Land Development Code allows for the presumption of acceptable water quality for minor subdivision projects such as this proposal.

9. Waiver. Applicant has requested a waiver of the requirement of a finding of water sufficiency as to Lot 1, specifically, to approve Lot 1 as a "dry lot" pursuant to Section 8.4.7(A)(3), LDC. That provision allows exceptions to the requirements of Section 8.4.7, LDC, Water Supply Standards, for the following:

"A proposed subdivision which, by reason of the nature, type and extent of the proposed development, will not require a water supply as prescribed herein. Subdivisions meeting this requirement are not designed or developed for permanent occupation or habitation."

The determination of the waiver is made on a case-by case basis by the BoCC upon recommendations by the County Attorney's Office, PCD Director, and Planning Commission, based on a specific request by Applicant with supporting evidence.

Applicant asserts that the go-kart operation on Lot 1 has operated historically as a "dry lot" with bottled drinking water sold to patrons and sewer services provided by portable restrooms. The County Attorney's Office believes the Applicant's historic use and stated intent is to continue to use the Lot 1 as a "dry lot" without a requirement for running water and sewer service, and therefore recommends approval of the waiver request.

10. Analysis. As described above, pursuant to Determination Nos. 3718-BD, 3717-BD, and 3716-BD, the Applicant has 3 sources of water to serve the subject

property. Determination No. 3718-BD adjudicated a total of 1,321 acre-feet of water from the Denver aquifer water supply underlying the subject property, which equates to 4.40 acre-feet/year based on El Paso County's 300 year water supply requirement. The Replacement Plan allows withdrawal of 0.3 acre-foot/year of Denver aquifer water for 300 years. Based on an annual withdrawal of 0.3 acre-foot/year, the water demand for the subdivision requires a total of 90 acre-feet for 300 years. Pursuant to the Replacement Plan, the Applicant may withdraw 90 acre-feet from the Denver aquifer adjudicated by Determination No. 3718-BD. As described in the Water Resources Report, the SBR Racing Minor Subdivision "will require an average of 0.30 annual acre-feet of water supply." Therefore, **if the waiver request as to Lot 1 is approved by the Planning Commission and the Board of County Commissioners**, then based upon the following: a) the withdrawal demand of 0.3 acre-feet per year and an annual available supply of 4.40 acre-feet per year for 300 years; b) the finding of sufficiency and no injury by the State Engineer and the Colorado Ground Water Commission Determination of Water Right and Replacement Plan No. 3718-BD; c) the State Engineer's requirement that Well Permit No. 115609 be re-permitted, which has already been completed; d) the assurances by Applicant's water attorney that Lot 1 will be a "dry lot" and Lot 2 will limit use to in-house use and will limit withdrawals to 0.3 acre-feet per year pursuant to the Replacement Plan; and, e) based on the Requirements below, the County Attorney's Office recommends a finding that the proposed water supply is **sufficient** in terms of quantity and dependability. There is a presumption of sufficient water quality as to the residential use of water on Lot 2.

REQUIREMENTS:

A. Applicant, its successors and assigns, shall comply with all requirements of Determination of Water Right No. 3718-BD and the Replacement Plan, and as and when applicable, Determination of Water Right No. 3717-BD, and Determination of Water Right No. 3716-BD.

B. Applicant shall comply with the requirements of the State Engineer's Office Well Permit No. 83709-F, specifically, that the use allowed for Lot 2 is only for in-house use and the amount of withdrawal is limited to 0.3 acre-feet per year.

C. If Applicants, their successors and assigns, convey Lot 2, then at the time of lot sale, they shall convey by warranty deed to successor lot owner(s) sufficient water rights in the Denver aquifer as follows:

90 acre-feet of not nontributary Denver aquifer water pursuant to Determination No. 3718-BD and the Replacement Plan underlying the subject property to satisfy El Paso County's 300 year water supply requirement. Denver aquifer requirements for the single-family lot are a total of 90 acre-feet based on annual

withdrawal of 0.3 acre-foot/year x 300 years).² Said conveyance instrument shall recite that the annual withdrawal is limited to 0.3 acre-feet per year, from which the lot owner is responsible for meeting the annual replacement required by the Replacement Plan from return flows through a non-evaporative septic system.

Any and all conveyance instruments shall recite as follows:

For the water rights conveyed for the primary supply (Denver aquifer): "These water rights conveyed are intended to provide a 300-year supply for Lot 2 of the SBR Racing Minor Subdivision and the water rights so conveyed shall be appurtenant to the lot with which they are conveyed, shall not be separated from the transfer of title to the land, and shall not be separately conveyed, sold, traded, bartered, assigned or encumbered in whole or in part for any other purpose. Such conveyance shall be by special warranty deed, but there shall be no warranty as to the quantity or quality of water conveyed, only as to the title."

Address return flows required from use of Denver aquifer water. Covenants shall ensure that return flows by the use of non-evaporative septic systems are made to address the replacement requirements. The Covenants shall also include the following or similar language to ensure that such return flows shall only be used for replacement purposes: "Return flows shall only be used for replacement purposes, shall not be separated from the transfer of title to the land, and shall not be separately conveyed, sold, traded, bartered, assigned or encumbered in whole or in part for any other purpose."

Applicant shall provide a form warranty deed(s) as to Lot 2 for review and approval to the Planning and Community Development Department and the County Attorney's Office prior to recording the final plat. In order to ensure that the water supply is appropriately retained and provided for Lot 2, Applicant shall provide a draft deed for the conveyance of Lot 1 for review and approval by the Planning and Community Development Department and the County Attorney's Office prior to recording the final plat.

D. Because the water supply for this 2-lot subdivision is complex, including the future uses of water addressed in the Replacement Plan whereby future increased withdrawals for Denver aquifer water on Lot 2 will depend on return flows generated from nontributary Arapahoe and/or Laramie-Fox Hills wells drilled and used on Lot 1, which Lot 1 likely will be owned by a different person than the owner of Lot 2, thus a water supply potentially deriving from three sources over the 300 year period, Applicant, their successors and assigns, shall create restrictive covenants (Declaration of Covenants, Conditions, and Restrictions), upon and running with the property which shall advise and obligate future lot owner(s) of this subdivision, their successors and assigns, regarding

² Determination of Water Right Nos. 3718-BD, 3717-BD, and 3716-BD base the water commitments on a 100-year aquifer life. Due to El Paso County's 300-year rule, the acre-feet of water per year to be supplied to the single-family lot is computed to reflect El Paso County's 300-year requirement.

all applicable requirements of Colorado Ground Water Commission Determination of Water Right No. 3718-BD and Replacement Plan, and Determination of Water Right Nos. 3717-BD and 3716-BD, as and when applicable, and Well Permit No. 83709-F. The covenants shall address the following:

1) Identify the water rights associated with the property. Regarding Lot 2, the Covenants shall reserve 90 acre-feet of not nontributary Denver aquifer water pursuant to Determination No. 3718-BD and the Replacement Plan to satisfy El Paso County's 300 year water supply requirement. To the extent Applicant intends to increase withdrawal and use of Denver aquifer in the future to 1.0 acre-feet per year for domestic uses, which will require return flows from future commercial use of water from nontributary Arapahoe and/or Laramie-Fox Hills wells drilled on Lot 1, Applicant may need to consider specifically reserving the right to those necessary return flows in any deeds conveying Lot 1 and water associated with Lot 1, but shall also address this contingency in the covenants. In the event Applicant intends to use that replacement water derived from the Arapahoe and/or Laramie-Fox Hills aquifer on Lot 1, any such amounts should be identified and reserved in the covenants, with appropriate restrictions, pursuant to the Replacement Plan. The following or similar language shall be included as to the applicable future return flows from Lot 1: "Return flows shall only be used for replacement purposes, shall not be separated from the transfer of title to the land, and shall not be separately conveyed, sold, traded, bartered, assigned or encumbered in whole or in part for any other purpose."

2) The following or similar language shall be included to address conveyances of Lot 2 subsequent to the initial conveyance made by Applicant/Declarant: "The water rights referenced herein shall be explicitly conveyed; however, if a successor lot owner fails to so explicitly convey the water rights, such water rights shall be intended to be conveyed pursuant to the appurtenance clause in any deed conveying said lot, whether or not the Determination and the water rights are specifically referenced in such deed. The water rights so conveyed shall be appurtenant to the lot with which they are conveyed, shall not be separated from the transfer of title to the land, and shall not be separately conveyed, sold, traded, bartered, assigned or encumbered in whole or in part for any other purpose. Such conveyance shall be by special warranty deed, but there shall be no warranty as to the quantity or quality of water conveyed, only as to the title."

3) The Covenants shall advise future lot owners of this subdivision, their successors and assigns, of their responsibility for any metering and data collecting that may be required regarding water withdrawals from the existing Denver aquifer well and future wells which may be constructed in the Arapahoe and/or Laramie-Fox Hills aquifers.

- 4) The Covenants shall address amendments using the following or similar language:

“Notwithstanding any provisions herein to the contrary, no changes, amendments, alterations, or deletions to these Covenants may be made which would alter, impair, or in any manner compromise the water supply for Lot 2 of SBR Racing Minor Subdivision, provided by the Colorado Ground Water Commission Determination of Water Right No. 3718-BD and Replacement Plan, and if and when applicable, Determination of Water Right Nos. 3717-BD and 3716-BD, and Well Permit No. 83709-F. Further, written approval of the proposed amendments must first be obtained from the El Paso County Planning and Community Development Department, and as may be appropriate, by the Board of County Commissioners, after review by the County Attorney’s Office. Any amendments must be pursuant to a Determination from the Colorado Ground Water Commission approving such amendment, with notice to El Paso County Planning and Community Development for an opportunity for the County to participate in any such adjudication.”

- 5) The Covenants shall address termination using the following or similar language:

“These Covenants shall not terminate unless the requirements of the Colorado Ground Water Commission Determination of Water Right No. 3718-BD and Replacement Plan, and if and when applicable, Determination of Water Right Nos. 3717-BD and 3716-BD, and Well Permit No. 83709-F, are also terminated by order of the Colorado Ground Water Commission, and a change of water supply is approved in advance of termination by the Board of County Commissioners of El Paso County.”

E. Because Lot 1 will be a dry lot, there shall be a plat note specifically stating that Lot 1 shall be used only as a “dry lot” without running water or sewer service, and that if Applicant, its successors and assigns, desire to use water in the future, this shall constitute a substantial change in the water use, which will require an application to be submitted to the El Paso County Planning and Community Development Department and appropriately reviewed and approved by the County. This shall also be addressed in the Covenants.

F. Because the Replacement Plan provides for potential future increased uses and withdrawal of not nontributary Denver aquifer water on Lot 2, there shall be a plat note specifically stating that should Applicant, its successors and assigns, desire to increase the use and withdrawal of water in the future, this shall constitute a substantial

change in the water use, which will require an application to be submitted to the El Paso County Planning and Community Development Department and appropriately reviewed and approved by the County. This shall also be addressed in the Covenants.

G. Applicant shall submit the Declaration of Covenants, Conditions, and Restrictions and any plat notes and deeds required herein to the Planning and Community Development Department and the County Attorney's Office for review, and the same must be approved by the Planning and Community Development Department and the County Attorney's Office prior to recording the final plat. Said Covenants shall cross-reference the Determinations and shall recite the obligations of the individual lot owners under the same.

H. Applicant, its successors and assigns, shall record all applicable documents, including, but not limited to Determination of Water Right No. 3718-BD and Replacement Plan, Determination of Water Right Nos. 3717-BD and 3716-BD, Well Permit No. 83709-F, agreements, assignments, and warranty deeds regarding the water rights, and Declaration of Covenants in the land records of the Office of the Clerk and Recorder of El Paso County, Colorado.

I. The following plat note shall be added to advise landowners of potential limited water supplies in the Denver Basin:

"Water in the Denver Basin Aquifers is allocated based on a 100 year aquifer life; however, for El Paso County planning purposes, water in the Denver Basin Aquifers is evaluated based on a 300 year aquifer life. Applicants, the Home Owners Association, and all future owners in the subdivision should be aware that the economic life of a water supply based on wells in a given Denver Basin aquifer may be less than either the 100 years or 300 years used for allocation indicated due to anticipated water level declines. Furthermore, the water supply plan should not rely solely upon non-renewable aquifers. Alternative renewable water resources should be acquired and incorporated in a permanent water supply plan that provides future generations with a water supply."

cc: Nina Ruiz, Planner III

Attachments: Exhibit1, Replacement Plan—Determination of Water Right No. 3718-BD

**COLORADO GROUND WATER COMMISSION
FINDINGS AND ORDER**

IN THE MATTER OF AN APPLICATION FOR REPLACEMENT PLAN TO ALLOW THE WITHDRAWAL OF GROUND WATER FROM THE DENVER AQUIFER IN THE UPPER BLACK SQUIRREL CREEK DESIGNATED GROUND WATER BASIN.

REPLACEMENT PLAN - DETERMINATION OF WATER RIGHT NO. 3718-BD

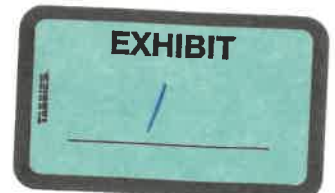
AQUIFER: DENVER

APPLICANT: KERRY E. BURT

In compliance with Section 37-90-107.5, CRS, and the Designated Basin Rules, 2 CCR 410-1 ("Rules" or "Rule"), Kerry E. Burt ("Applicant") submitted an application for a replacement plan to allow the withdrawal of ground water from the Denver Aquifer in accordance with Determination of Water Right No. 3718-BD.

FINDINGS

1. Pursuant to Section 37-90-107(7), CRS, in a Findings and Order dated July 12, 2019, the Ground Water Commission ("Commission") approved a Determination of Water Right, no. 3718-BD, for the Denver Aquifer ("Aquifer"), summarized as follows.
 - a. The determination quantified an amount of water from beneath 40 acres of overlying land described as the SW1/4 of the SE1/4 of Section 22, Township 12 South, Range 63 West of the 6th P.M., in El Paso County ("Overlying Land").
 - b. The total volume of underlying ground water that may be withdrawn from the Aquifer shall not exceed 1,321 acre-feet and the allowed average annual amount of ground water that may be withdrawn from the Aquifer shall not exceed 13.21 acre-feet.
 - c. The use of the allowed amount of underlying ground water shall be limited to the following beneficial uses: domestic (in home, irrigation of lawn and gardens, domestic animals), commercial, irrigation, replacement, and fire protection.
 - d. In accordance with Rule 5.3.6 the withdrawal of the subject ground water will, within one hundred years, deplete the flow of a natural stream or its alluvial aquifer at an annual rate greater than one-tenth of one percent of the annual rate of withdrawal, the ground water is considered to be not-nontributary, and Commission approval of a replacement plan providing for actual depletion of affected alluvial aquifers and adequate to prevent any material injury to existing water rights in such alluvial aquifers is required prior to approval of well permits for wells to withdraw the subject ground water.
2. The subject water is Designated Ground water located within the boundaries of the Upper Black Squirrel Creek Designated Ground Water Basin and within the Upper Black Squirrel Creek Ground Water Management District. The Commission has jurisdiction.
3. Withdrawal of the subject ground water would deplete the alluvial aquifer of the Upper Big Sandy Designated Ground Water Basin and the alluvial aquifer of the Upper Black Squirrel Creek Designated Ground Water Basin, both of which, according to Rules 5.2.7.2 and 5.2.6.2, respectively, have been determined to be over appropriated. Such depletion would unreasonably impair existing alluvial rights withdrawing water from those alluvial aquifers.



4. Pursuant to Rule 5.6.1 this plan must be adequate to prevent any material injury to water rights of other appropriators, which for purposes of this plan means large capacity wells withdrawing water from the alluvial aquifer of the Upper Big Sandy Designated Ground Water Basin and the alluvial aquifer of the Upper Black Squirrel Creek Designated Ground Water Basin.
5. Pursuant to Rule 5.3.6.2(C) the amount of replacement water shall provide for the depletion of alluvial water for the first 100 years due to all previous pumping and if pumping continues beyond 100 years, shall replace actual impact until pumping ceases.
6. The subject application for the replacement plan was received by the Commission on August 9, 2018.
7. The Applicant proposes to divert 0.3 acre-feet annually from the Denver Aquifer for in-house use only in one single family dwelling until such time as the Applicant demonstrates replacement water is being delivered from Arapahoe or Laramie-Fox Hills aquifer sources as described in paragraph 11 so as to allow the well to pump a total of 1 acre-foot annually. The Denver aquifer water will be withdrawn through an existing well ("Denver aquifer well"), currently operated under well permit no. 115609, which will be re-permitted to operate under this replacement plan for a period of 300 years. Once withdrawal from the well increases to 1 acre-foot annually the use of the well will be limited to domestic use (in-house use, landscape and gardens, domestic animal watering).
8. At a continuous withdrawal of 0.3 acre-feet annually for 300 years, total depletions to the alluvial aquifer systems of the Upper Big Sandy Designated Ground Water Basin and Upper Black Squirrel Creek Designated Ground Water Basin would steadily increase to 0.27 acre-feet per year in the 300th year, as shown in Exhibit A-1.
9. At a continuous withdrawal of 0.7 acre-feet annually for 300 years, total depletions to the alluvial aquifer systems of the Upper Big Sandy Designated Ground Water Basin and Upper Black Squirrel Creek Designated Ground Water Basin would steadily increase to 0.63 acre-feet per year in the 300th year, as shown in Exhibit A-2.
10. While the well is diverting 0.3 acre-feet annually from the Denver Aquifer for in-house use only the Applicant proposes to provide 0.27 acre-feet per year of replacement water to the alluvial aquifer system of the Upper Black Squirrel Creek Designated Ground Water Basin to replace depletions resulting from such pumping. The proposed source of replacement water is septic and leaching field return flows from the in-house use of the ground water to be pumped under the plan. The Applicant estimates that return flows will consist of 90% of the water used for in-house purposes. Assuming a total annual withdrawal amount for in-house use of 0.30 acre-feet, the return flow from the well would be 0.27 acre-feet annually.
11. The additional proposed sources of replacement water that would allow the well to increase its diversions from 0.3 acre-foot annually to 1 acre-foot annually from the Denver Aquifer are return flows from in-door commercial drinking and sanitary use and irrigation use of the nontributary Laramie-Fox Hills and/or Arapahoe aquifer ground water pumped pursuant to Determination of Water Rights Nos. 3716-BD and 3717-BD ("Laramie-Fox Hills and Arapahoe ground water"), respectively; and/or direct delivery of said Laramie-Fox Hills and Arapahoe ground water recharged through a below ground infiltration structure, like a leach field, approved by the Commission, as further described below.

- a. A new Arapahoe aquifer well may be constructed pursuant to Determination of Water Rights No. 3717-BD. Pursuant to Section 37-90-107(7), CRS, in a Findings and Order dated July 1, 2019, the Ground Water Commission ("Commission") approved a Determination of Water Right, no. 3717-BD, for the Arapahoe Aquifer, summarized as follows.
 - i. The determination quantified an amount of water underlying the Overlying Land.
 - ii. The total volume of underlying ground water that may be withdrawn from the Aquifer shall not exceed 1,430 acre-feet and the allowed average annual amount of ground water that may be withdrawn from the Aquifer shall not exceed 14.3 acre-feet.
 - iii. The use of the allowed amount of underlying ground water shall be limited to the following beneficial uses: domestic (in home, irrigation of lawn and gardens, domestic animals), commercial, irrigation, replacement, and fire protection.
 - iv. In accordance with Rule 5.3.6 of the Designated Basin Rules, it has been determined that withdrawal of ground water from the Aquifer underlying the land claimed by the Applicant will not, within one hundred years, deplete the flow of a natural stream or its alluvial aquifer at an annual rate greater than one-tenth of one percent of the annual rate of withdrawal and, therefore, the Underlying Ground Water is nontributary ground water as defined in Rule 4.2.19 of the Designated Basin Rules. Pursuant to the Rules, no more than 98% of the amount of the Underlying Ground Water withdrawn annually shall be consumed.

The 1,430 acre-feet of water that may be withdrawn under Determination of Water Right no. 3717-BD may be withdrawn at a rate of up to 4.77 acre-feet annually for 300 years, or at a higher withdrawal rate over a shorter period of time as long as the water is withdrawn in accordance with Determination of Water Right no. 3717-BD.

- b. In addition to, or as an alternative to the Arapahoe aquifer well, the Applicant may construct a new Laramie-Fox Hills aquifer well pursuant to Determination of Water Rights No. 3716-BD. Pursuant to Section 37-90-107(7), CRS, in a Findings and Order dated July 1, 2019, the Ground Water Commission ("Commission") approved a Determination of Water Right, no. 3716-BD, for the Laramie-Fox Hills Aquifer, summarized as follows.
 - i. The determination quantified an amount of water underlying the Overlying Land.
 - ii. The total volume of underlying ground water that may be withdrawn from the Aquifer shall not exceed 1,530 acre-feet and the allowed average annual amount of ground water that may be withdrawn from the Aquifer shall not exceed 15.3 acre-feet.
 - iii. The use of the allowed amount of underlying ground water shall be limited to the following beneficial uses: domestic (in home, irrigation of lawn and gardens, domestic animals), commercial, irrigation, replacement, and fire protection.
 - iv. In accordance with Rule 5.3.6 of the Designated Basin Rules, it has been determined that withdrawal of ground water from the Aquifer underlying the land claimed by the Applicant will not, within one hundred years, deplete the

flow of a natural stream or its alluvial aquifer at an annual rate greater than one-tenth of one percent of the annual rate of withdrawal and, therefore, the Underlying Ground Water is nontributary ground water as defined in Rule 4.2.19 of the Designated Basin Rules. Pursuant to the Rules, no more than 98% of the amount of the Underlying Ground Water withdrawn annually shall be consumed.

The 1,530 acre-feet of water that may be withdrawn under Determination of Water Right no. 3716-BD may be withdrawn at a rate of up to 5.10 acre-feet annually for 300 years, or at a higher withdrawal rate over a shorter period of time as long as the water is withdrawn in accordance with Determination of Water Right no. 3716-BD.

- c. The Applicant proposes to use the Laramie-Fox Hills and Arapahoe ground water for the irrigation of 4 to 6 acres of irrigated grasses; the irrigation of grass and shrubs; fire protection; and for use in a services building that will provide a cooking/food service area, restrooms and showers ("commercial drinking and sanitary use"). The Applicant claims that irrigation water will be applied by sprinkler or similar non-drip irrigation system. The Applicant estimates that return flows will consist of 90% of the water used for in-building commercial drinking and sanitary purposes as will 15% of the water used for irrigation. Assuming a total annual withdrawal amount for in-building commercial drinking and sanitary use of 0.50 acre-feet (resulting in return flows of 0.45 acre-feet annually) and a total annual withdrawal amount of 9.2 acre-feet for irrigation (resulting in return flows of 1.38 acre-feet annually), the return flow from the well(s) would be 1.83 acre-feet annually. In the alternative, assuming a total annual withdrawal amount of 4.7 acre-feet for irrigation, with no other uses, the return flow from the well(s) would be 0.71 acre-feet annually.
12. The subject property is located within the drainage of Black Squirrel Creek, and the return flows will flow to the alluvial aquifer of the Upper Black Squirrel Creek Designated Ground Water Basin. The Applicant proposes to aggregate all replacements to the drainage in which the well or wells will operate, in accordance with Guideline 2007-1.
13. So long as the septic and leaching treatment systems for the in-house use and in-building commercial drinking and sanitary use of the water are constructed and operated in compliance with state and county health department standards the plan would not cause unreasonable impairment of water quality of the alluvial aquifer.
14. Records in this office indicate that the Applicant controls the water rights to be used as the source of replacement water, consisting of Determination of Water Right Nos. 3716-BD, 3717-BD and 3718-BD.
15. In accordance with Rule 5.6.2 the application was referred to the Upper Black Squirrel Creek Ground Water Management District on April 30, 2019. No written recommendations from the district were received.
16. In accordance with Sections 37-90-107.5 and 37-90-112, CRS, the application was published in the Ranchland News newspaper on May 2, 2019 and May 9, 2019. No objections to the application were received within the time limit set by statute.
17. The Commission Staff has evaluated the application pursuant to Section 37-90-107.5, CRS, and the requirements of Rule 5.3.6.2(C) and Rule 5.6.

18. According to Rule 5.6.2 of the Designated Basin Rules:
 - a. The Applicant has the burden of proving the adequacy of the plan in all respects.
 - b. The Commission Staff shall propose any additional terms and conditions or limitations which are necessary to prevent material injury and to ensure that the plan is administrable and enforceable.
19. Based on the above, no material injury will occur to the water rights of large capacity wells producing from the alluvial aquifer of the Upper Big Sandy Designated Ground Water Basin and the alluvial aquifer of the Upper Black Squirrel Creek Designated Ground Water Basin, due to diversions from the Denver Aquifer, if operated under this replacement plan, subject to the conditions given below.

ORDER

In accordance with Section 37-90-107.5, CRS, and the Designated Basin Rules, the Colorado Ground Water Commission orders that the application for a replacement plan to allow the withdrawal of ground water from the Denver Aquifer underlying 40 acres that are the subject of Determination of Water Right no. 3718-BD is approved subject to the following conditions:

20. The Denver aquifer water will be withdrawn through the existing well, currently operated under well permit no. 115609, which will be re-permitted to operate pursuant to this replacement plan. The use of the well will be limited to in-house use in one single family dwelling until the Applicant has demonstrated in accordance with the terms of this replacement plan that adequate return flows exist to replace depletions from the withdrawal of 1 acre-foot annually from the Denver Aquifer. Once the withdrawal from the well increases to 1 acre-foot annually the use of the well will be limited to domestic use (in-house use, irrigation of landscape and gardens, domestic animal watering).
21. The allowed annual amount of ground water to be withdrawn from the aquifer by the well operating under this plan shall not exceed 0.3 acre-feet until the Applicant has demonstrated in accordance with the terms of this replacement plan that adequate return flows and/or recharge exists to replace depletions from the withdrawal of the additional 0.7 acre-foot of water annually, for a total withdrawal of 1 acre-foot annually.
22. Prior to increasing pumping from the existing well to 1 acre-foot annually the Applicant must demonstrate to the satisfaction of the Commission that adequate return flows exist to replace depletions that result from all withdrawals through the Denver aquifer well. At a minimum the following information must be provided to the Commission:
 - a. Confirmation that the Denver aquifer well is serving an occupied single family dwelling and return flows from the dwelling are being returned through a non-evaporative septic system.
 - b. Evidence that a well has been constructed, and a pump has been installed in, a Laramie-Fox Hills aquifer well that was permitted pursuant to Determination of Water Right, no. 3716-BD; or an Arapahoe aquifer well that was permitted pursuant to Determination of Water Right, no. 3717-BD.

- c. If the Applicant will be claiming return flows from the use of the Laramie-Fox Hills aquifer and/or Arapahoe aquifer water described above as a replacement source the following must be provided to the Commission staff:
 - i. Evidence that a meter has been installed to separately measure the amount of water that will be delivered to in-door commercial drinking and sanitary uses, if such return flows are being claimed.
 - ii. Evidence that the water used for in-door commercial drinking and sanitary use is being returned through a non-evaporative septic system, if such return flows are being claimed.
 - iii. Evidence that a meter has been installed to separately measure the amount of water that will be delivered to irrigation, if such return flows are being claimed.
 - iv. Evidence that the irrigation system is a sprinkler irrigation system, or some other non-drip irrigation system, that will return at least 15% of the amount of water diverted for irrigation use to the alluvial aquifer.
 - v. Evidence that adequate water is being pumped for in-door commercial drinking and sanitary uses and/or irrigation use to replace the depletions that result from the additional 0.7 acre-feet of pumping, based on the assumed return flows of 90% for in-door commercial drinking and sanitary use and 15% for irrigation use.
- d. If the Applicant will be claiming recharge credits for direct delivery into the alluvial aquifer of water pumped from the Laramie-Fox Hills aquifer and/or Arapahoe aquifers described above as a replacement source the following must be provided to the Commission staff:
 - i. Evidence that a below ground infiltration structure has been constructed, and is operational, that is adequate to recharge the amount of water that the Applicant claims will be delivered to the structure on an annual basis.
 - ii. Evidence that a meter has been installed that separately measures the amount of water that will be delivered to recharge.
 - iii. The total quantity of water that the Applicant claims will be delivered to the recharge structure on an annual basis.
 - iv. The location on the Overlying Land where the recharge structure was constructed.
 - v. Evidence that the recharge project will prevent the unreasonable impairment of water quality.
 - vi. Evidence that the recharge structure is constructed in a manner to prevent evapotranspiration losses from occurring as a result of operation of the infiltration gallery.
- e. Proposed accounting in a spreadsheet, or other approved digital format.

23. A totalizing flow meter shall be installed on the wells. The well owners shall maintain the meters in good working order.
24. Permanent records of all withdrawals of ground water from the wells shall be recorded at least annually by the well owners, permanently maintained, and provided to the Commission and the Upper Black Squirrel Creek Ground Water Management District upon request.
25. Existing well permit no. 115609 must be re-permitted to operate pursuant to this plan.
26. Pumping under this plan is limited to a period of 300 years. The year of first use of this replacement plan shall be the year 2019.
27. Return flows from in-house use and in-door commercial use of ground water shall occur through individual on-lot non-evaporative septic systems located within the 40 acres of overlying land that are the subject of Determination of Water Right Nos. 3716-BD, 3717-BD and 3718-BD.
28. The septic systems must be constructed and operated to state and county health department standards.
29. Replacement of depletions must be provided annually in the acre-feet amounts shown in Exhibits A-1 and A-2. Exhibit A-1 only shall be used until such time as the allowed pumping of the well is increased to 1 acre-foot annually. Once the allowed pumping rate of the well is increased to 1 acre-foot annually the depletions shall be determined as the replacement requirement for the withdrawal of the 0.3 acre-feet for in-house use, based on the number of years since the year of first use of this replacement plan (2019), plus the replacement requirement as shown in Exhibit A-2 for the withdrawal of the additional 0.7 acre-feet annually, based on the number of years since the allowed pumping was increased. Annual replacement requirements may be computed by pro-rating between the values given on Exhibits A-1 and A-2, or for simplicity may be taken as the amount shown in the next succeeding 5 year increment.
30. The Applicant or their successor(s) are responsible for ensuring that replacement water is provided to the alluvial aquifer as required by this plan, and that the replacement prevents any material injury to the water rights of other appropriators. The annual replacement requirement and the annual amount of replacement water provided shall be calculated and reported on a form acceptable to the Commission. The annual amount of replacement water provided must be no less than the annual replacement requirement on a yearly basis. No credit shall be claimed by the Applicant for an oversupply of replacement water provided to the alluvium during previous years.
31. The Applicant must provide the required annual amount of replacement water for the first 100 years, or for as long as a Denver aquifer well is operated pursuant to this plan, whichever is longer.
32. To assure adequate return flows from the Denver aquifer well for replacement of the depletions resulting from in-house use, the well must be serving an occupied single-family dwelling that is generating return flows via a non-evaporative septic system.

33. So long as the Denver aquifer well continues to pump and supply an occupied dwelling while the well is used for in-house use only, the plan's required replacement obligations, shown in Exhibit A-1 will be met.
34. Should the Denver aquifer well cease pumping within the first 100 years an amended or alternate replacement plan must be obtained that will make the required replacement deliveries, unless return flows or recharge from the use of the Laramie-Fox Hills aquifer and Arapahoe aquifer ground water, as described above, are adequate to replace all depletions from the Denver well.
35. At any time while the Denver aquifer well is pumping should it be determined that return flows or credits from direct delivery are not providing all replacements required under this replacement plan an amended or alternate replacement plan must be obtained that will make the required replacement deliveries.
36. The Applicant or their successor(s) must gather, record and maintain permanent records of all information pertaining to operation of this plan, which shall include, but is not be limited to, those items identified below. The Applicant must submit records to the Commission and the Upper Black Squirrel Creek Ground Water Management District on forms acceptable to the Commission, on an annual basis for the previous calendar year, by February 15th of the following year.
 - a. Accounting that must be provided if the Denver aquifer well is used for in-house use only:
 - i. Identification of the Denver aquifer well permit issued pursuant to this plan.
 - ii. The amount of water diverted by the Denver aquifer well, both annually and cumulatively since operation of the plan began.
 - iii. The number of occupied single family dwellings served by the Denver aquifer well.
 - iv. The return flows occurring from use of the Denver aquifer well operating under the plan, assuming 0.27 acre-feet per year occupied single family dwelling (90% of the water used for in-house purposes) enters the alluvial aquifer as replacement water.
 - v. Any other information the Commission deems relevant and necessary to operation, monitoring, accounting, or administration of the plan.
 - b. Accounting that must be provided if the Denver aquifer well is expanded to allow for domestic use (in-house use, irrigation of landscape and gardens, domestic animal watering) and the withdrawal of 1 acre-foot annually:
 - i. Identification of the Denver aquifer well permit issued pursuant to this plan.
 - ii. Identification of the Laramie-Fox Hills and Arapahoe aquifer well permits used as part of this replacement plan, either through return flow or recharge.
 - iii. The amount of water diverted by each well, both annually and cumulatively since operation of the plan began.
 - iv. The number of occupied single family dwellings served by the Denver aquifer well.
 - v. Metered quantity of water pumped from the Laramie-Fox Hills and/or Arapahoe aquifer for in-door commercial drinking and sanitary use.

- vi. The return flows occurring from in-door commercial drinking and sanitary use assuming 90% of the water used for in-door commercial drinking and sanitary use enters the alluvial aquifer as replacement water.
 - vii. Metered quantity of water pumped from the Laramie-Fox Hills and/or Arapahoe aquifer for irrigation use.
 - viii. The type of irrigations system(s) used to irrigate with the Laramie-Fox Hills and/or Arapahoe aquifer water, and the return flows occurring from irrigation use assuming 15% of the water used for irrigation use enters the alluvial aquifer as replacement water.
 - ix. Metered quantity of water pumped from the Laramie-Fox Hills and/or Arapahoe aquifer that is delivered to direct recharge into the alluvial aquifer.
37. The Applicant or their successor(s) are fully responsible for the operation, monitoring, and accounting of the replacement plan. In the event a lot with a well permitted or operating pursuant to this plan is sold, evidence of the sale and notification to the new owner of their responsibility under the replacement plan shall accompany that year's accounting.
38. Any covenants adopted for a subdivision should contain a description of the replacement plan, including the limitations on water use on the lot, metering of well pumping, and how the plan is to be administered.
39. In the event the permitted well is not operated in accordance with the conditions of this replacement plan, it shall be subject to administration, including orders to cease diverting ground water.
40. All terms and conditions of Determination of Water Right No. 3716-BD, 3717-BD and 3718-BD must be met.
41. A copy of this Findings and Order shall be recorded by the Applicant in the real property records of El Paso County, so that a title examination of the above described property, or any part thereof, shall reveal to all future purchasers the existence of this replacement plan. The terms and conditions of this replacement plan shall be considered to be a covenant on and running with the subject property.

Dated this Dated this 12th day of July, 2019.



Kevin G. Rein, P.E.
Executive Director
Colorado Ground Water Commission

By: 

Keith Vander Horst, P.E.
Chief of Water Supply, Basins

Exhibit A-1
 Replacement Plan - Determination No.: 3718-BD
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Designated Basin Summary Table for Kerry E. Burt
 Pumping Rate of 0.3 acre-feet per year for 300 Years from the Denver aquifer
 Section(s): Section 22, Township 12 South, Range 63 West, 6th P.M.

Year	Pumping (Q) (AF/YR)	Annual Depletion (q) (AF/YR)	Depletion as a % of Pumping (q/Q)	Year	Pumping (Q) (AF/YR)	Annual Depletion (q) (AF/YR)	Depletion as a % of Pumping (q/Q)
5	0.3	0.038	12.6	155	0.3	0.259	86.2
10	0.3	0.070	23.3	160	0.3	0.259	86.5
15	0.3	0.097	32.3	165	0.3	0.260	86.7
20	0.3	0.120	40.0	170	0.3	0.261	86.9
25	0.3	0.139	46.4	175	0.3	0.261	87.2
30	0.3	0.156	51.9	180	0.3	0.262	87.3
35	0.3	0.170	56.5	185	0.3	0.263	87.5
40	0.3	0.182	60.5	190	0.3	0.263	87.7
45	0.3	0.192	63.9	195	0.3	0.264	87.9
50	0.3	0.200	66.8	200	0.3	0.264	88.0
55	0.3	0.208	69.3	205	0.3	0.264	88.2
60	0.3	0.214	71.5	210	0.3	0.265	88.3
65	0.3	0.220	73.4	215	0.3	0.265	88.5
70	0.3	0.225	75.0	220	0.3	0.266	88.6
75	0.3	0.229	76.4	225	0.3	0.266	88.7
80	0.3	0.233	77.7	230	0.3	0.266	88.8
85	0.3	0.236	78.7	235	0.3	0.267	88.9
90	0.3	0.239	79.7	240	0.3	0.267	89.1
95	0.3	0.242	80.6	245	0.3	0.267	89.2
100	0.3	0.244	81.3	250	0.3	0.268	89.3
105	0.3	0.246	82.0	255	0.3	0.268	89.3
110	0.3	0.248	82.6	260	0.3	0.268	89.4
115	0.3	0.250	83.2	265	0.3	0.269	89.5
120	0.3	0.251	83.7	270	0.3	0.269	89.6
125	0.3	0.252	84.2	275	0.3	0.269	89.7
130	0.3	0.254	84.6	280	0.3	0.269	89.8
135	0.3	0.255	85.0	285	0.3	0.269	89.9
140	0.3	0.256	85.3	290	0.3	0.270	89.9
145	0.3	0.257	85.6	295	0.3	0.270	90.0
150	0.3	0.258	85.9	300	0.3	0.270	90.1

Created by Ground Water Commission Staff: jmw on March 28, 2019

Values for 'Depletion as a % of Pumping' (q/Q) are not calculated when the pumping rate (Q) is changed to anything but zero

Exhibit A-2
Replacement Plan - Determination No.: 3718-BD
Page 1 of 1

Designated Basin Summary Table for Kerry E. Burt Pumping Rate of 0.7 acre-feet per year for 300 Years from the Denver aquifer Section(s): Section 22, Township 12 South, Range 63 West, 6th P.M.							
Year	Pumping (Q) (AF/YR)	Annual Depletion (q) (AF/YR)	Depletion as a % of Pumping (q/Q)	Year	Pumping (Q) (AF/YR)	Annual Depletion (q) (AF/YR)	Depletion as a % of Pumping (q/Q)
5	0.7	0.088	12.6	155	0.7	0.603	86.2
10	0.7	0.163	23.3	160	0.7	0.605	86.5
15	0.7	0.226	32.3	165	0.7	0.607	86.7
20	0.7	0.280	39.9	170	0.7	0.608	86.9
25	0.7	0.325	46.4	175	0.7	0.610	87.1
30	0.7	0.363	51.9	180	0.7	0.611	87.3
35	0.7	0.396	56.6	185	0.7	0.613	87.5
40	0.7	0.424	60.5	190	0.7	0.614	87.7
45	0.7	0.447	63.9	195	0.7	0.615	87.9
50	0.7	0.468	66.8	200	0.7	0.616	88.0
55	0.7	0.485	69.3	205	0.7	0.617	88.2
60	0.7	0.500	71.5	210	0.7	0.618	88.3
65	0.7	0.513	73.4	215	0.7	0.619	88.5
70	0.7	0.525	75.0	220	0.7	0.620	88.6
75	0.7	0.535	76.4	225	0.7	0.621	88.7
80	0.7	0.543	77.7	230	0.7	0.622	88.8
85	0.7	0.551	78.7	235	0.7	0.622	88.9
90	0.7	0.558	79.7	240	0.7	0.623	89.0
95	0.7	0.564	80.6	245	0.7	0.624	89.2
100	0.7	0.569	81.3	250	0.7	0.625	89.3
105	0.7	0.574	82.0	255	0.7	0.625	89.4
110	0.7	0.578	82.6	260	0.7	0.626	89.4
115	0.7	0.582	83.2	265	0.7	0.627	89.5
120	0.7	0.586	83.7	270	0.7	0.627	89.6
125	0.7	0.589	84.2	275	0.7	0.628	89.7
130	0.7	0.592	84.6	280	0.7	0.628	89.8
135	0.7	0.595	85.0	285	0.7	0.629	89.9
140	0.7	0.597	85.3	290	0.7	0.629	89.9
145	0.7	0.599	85.6	295	0.7	0.630	90.0
150	0.7	0.601	85.9	300	0.7	0.630	90.1

Created by Ground Water Commission Staff: jmw on March 28, 2019

Values for 'Depletion as a % of Pumping' (q/Q) are not calculated when the pumping rate (Q) is changed to anything but zero