

BEFORE THE GROUND WATER COMMISSION, STATE OF COLORADO

CASE NO. 09-GW-____

PETITION FOR DETERMINATION OF DESIGNATED GROUND WATER BASIN

IN THE MATTER OF A PETITION TO DETERMINE THE BOUNDARIES OF THE UPPER
SPRING CREEK DESIGNATED GROUND WATER BASIN

NORTHERN COLORADO WATER ASSOCIATION, PETITIONER

The Northern Colorado Water Association (“Petitioner” or “NCWA”) by and through its attorneys, Fischer, Brown, Bartlett and Gunn, P.C., hereby petitions the Colorado Ground Water Commission to determine the boundaries of a new designated ground water basin to be known as the “Upper Spring Creek Designated Ground Water Basin.” In support of this Petition, Petitioner submits the following:

1. Petitioner. Petitioner Northern Colorado Water Association is a Colorado non-profit corporation, organized and existing to serve potable water to its members. NCWA was originally incorporated in 1962, primarily to provide a source of potable water to rural residents of northern Larimer County. A portion of the potable water supplied to the members of NCWA is diverted from wells owned by NCWA (the “NCWA Wells”) located approximately five miles south of the Colorado-Wyoming State Line.

NCWA utilizes the ground water diverted by the NCWA Wells to provide the potable water supply to about 650 homes or residences in northern Larimer County, where virtually no other dependable potable water sources exist. The ground water from the NCWA Wells is of a quantity and quality making it uniquely suited for this purpose. As such the ground water is an extremely valuable, and indeed, necessary, natural resource for the residents in northern Larimer County.

2. Overview of Petition. This Petition seeks a determination of the boundaries of a new designated ground water basin to be known as the “Upper Spring Creek Designated Ground Water Basin” (hereinafter the “Proposed Basin”). The Proposed Basin is located entirely in Larimer County extending southeast from the Colorado-Wyoming State Line approximately six and a half miles.

Spring Creek is an ephemeral stream with an often unidentifiable or non-existent channel, with its surface drainage, as defined by topographic boundaries, originating in Laramie County, Wyoming and continuing into Colorado. Surface flow in Spring Creek is virtually non-existent except during infrequent extreme rainfall events. The surficial drainage of Spring Creek, as defined by topographic boundaries, is tributary to Lone Tree Creek, a tributary of the South

Platte River. The Proposed Basin is over 40 miles from the South Platte River. Exhibit A hereto shows the boundaries of the Proposed Basin.

The NCWA Wells are located within the Proposed Basin and withdraw ground water from the alluvial aquifer of Spring Creek. Prior to 2003 very little data was gathered or known about the hydrogeology of the Spring Creek drainage. Indeed, very little information was ever required. The NCWA Wells were historically augmented by the Ground Water Appropriators of the South Platte River Basin, Inc. ("GASP"). GASP ultimately collapsed around 2003.

In 2003, the State Engineer required NCWA to file an application for approval of a plan for augmentation with the district court, Water Division 1, to continue operating its wells. As a result, and in support of its water court application, NCWA retained consultants to investigate the hydrogeology of the area. Preliminary investigations by Dr. John Scott of Scott Water Engineers, Inc. revealed that, based on conservative estimates, impacts to surface flow in any appreciable amount from pumping of the NCWA Wells take well over 100 years to occur.

In 2008 NCWA retained HRS Water Consultants, Inc., to complete a detailed hydrogeologic investigation of the Spring Creek basin, and to determine if any portion of the Spring Creek aquifer met the definitions of designated ground water as defined in §37-90-103(6)(a), C.R.S. As they relate to this Petition, the key findings of the HRS Study were that:

- (a) The undisturbed travel time between the Proposed Basin downgradient to the first point at which a surface stream is in hydrologic connection with the aquifer is over 100 years (as analyzed from the furthest downgradient extent of the Proposed Basin).
- (b) Any impacts to the nearest surface water rights will be immeasurably small after 100 years of pumping within the Proposed Basin.
- (c) Ground water in the Proposed Basin is not available to, nor is it required for, fulfillment of decreed surface rights.
- (d) The ground water in the Proposed Basin is not adjacent to a flowing natural stream either in the Proposed Basin, or downgradient a distance of approximately 38.5 miles.
- (e) Ground water has constituted the principal, and indeed virtually the only, use of water for at least the past 15 years.

Based on the findings of the HRS Study, in particular the new previously unavailable factual data about the hydrogeology of the area and the Spring Creek basin, NCWA resolved to file this Petition. A complete copy of the HRS Study is attached hereto as Exhibit B.

3. Jurisdiction. Pursuant to §37-90-106(1)(a), C.R.S. the Colorado Ground Water Commission has the jurisdiction to, from time to time as adequate factual data becomes available, determine the geographic boundaries of designated ground water basins. The

Commission is statutorily required to determine designated ground water basins as adequate factual data becomes available, as future conditions require and factual data justifies. This Petition presents new, previously unavailable factual data about the hydrogeology and ground water resources within the Spring Creek basin. Consistent with §37-90-102(6)(a), C.R.S., Petitioner only seeks the designation of the portions of the alluvial aquifer located within the boundaries of the Proposed Basin. Petitioner does not seek designation of any portions of the Dawson-Arkose, Denver, Arapahoe, or Laramie-Fox Hills formations.

4. Definition of Designated Ground Water. The Ground Water Management Act of 1965 (codified as §37-90-101, C.R.S. et seq., hereinafter the “1965 Act”) defines designated ground water as:

- a. Ground water which in its natural course would not be available to and required for the fulfillment of decreed surface rights (the “First Prong”), or
- b. Ground water in areas not adjacent to a continuously flowing natural stream wherein ground water withdrawals have constituted the principal water usage for at least fifteen years preceding the date of the first hearing on the proposed designation of the basin (the “Second Prong”).

§37-90-103(6)(a), C.R.S. Although the proponent of a ground water basin designation need meet only one of these prongs, the ground water in the Proposed Basin meets both of them.

5. Delineation of the Boundaries of the Proposed Basin. The delineation of the boundaries of the Proposed Basin (shown in Exhibit A) was based among other things on an overall basin-wide study of the hydrogeologic characteristics of the Spring Creek Basin. The HRS Study (Exhibit B) examined the hydrology, geology, water rights and water use within the Spring Creek drainage basin from the Colorado-Wyoming State Line downstream to its confluence with Lone Tree Creek.

After study of the Spring Creek Basin, it was determined that the upper portion of the basin would meet the requirements for designation. Selection of only the upper most portion of the Spring Creek Basin as the Proposed Basin was based principally on discernable differences in the hydrogeologic characteristics of the basin in a downgradient direction from the State Line. Physical characteristics of the Spring Creek alluvial aquifer vary significantly in a downgradient direction. Available well driller logs, consistent with standard geologic principles, indicate a general trend of finer grain size in the alluvial materials progressing in a downgradient direction from the Larimer County-Weld County Line (hereinafter the “County Line”). In general decreasing grain size translates to a decrease in hydraulic conductivity. Other data presented in the HRS Study indicates significant differences in hydrogeologic properties of the aquifer downgradient of the County Line. The data indicates that the upper portion of the Spring Creek alluvial aquifer is more productive for ground water development than in other areas of the basin.

6. The Proposed Basin meets the First Prong of the Definition. The First Prong of the designated ground water definition addresses ground water which, in its natural course, would not be available to and required for the fulfillment of decreed surface rights. The

Proposed Basin meets the First Prong of the definition because there are virtually no decreed surface water rights in or near the Proposed Basin, and because the ground water therein has a *de minimis* effect on surface water flow, as discussed in Paragraph 8 below. Because of its *de minimis* affect on surface flow, the ground water within the Proposed Basin is not available to nor required for the fulfillment of decreed surface rights.

There is little, if any, evidence of decreed surface rights diverting water which may be attributed to ground water within the Proposed Basin. Within the Proposed Basin there is only one surface right currently in use. This right is a spring (the “Windy Acres Spring”) which is fed by discharge from a bedrock formation, water from which is not part of the Proposed Basin. The HRS Study details other surface rights located within the Spring Creek drainage, however, the HRS Study discovered little, if any, evidence of historical use of these rights. The HRS Study concluded that “there do not appear to be any water rights in the Spring Creek drainage either within, or downgradient of, the proposed designated basin, that are active and for which water is available from the Spring Creek alluvial aquifer.” (HRS Study, p.53).

In evaluating whether the Proposed Basin meets the First Prong of the definition, it is appropriate for the Commission to consider whether the ground water within the Proposed Basin would be available to and required for the fulfillment of decreed surface rights by examining the State Engineer’s curtailment authority under §§37-92-501 and -502, C.R.S. Section 37-92-501(1), C.R.S., provides in part:

Ground water diversions shall not be curtailed nor required to replace water withdrawn, for the benefit of surface right priorities, even though such surface right priorities be senior in priority date, when, assuming the absence of ground water withdrawal by junior priorities, *water would not have been available for diversion by such surface right* under the priority system.

(emphasis added)

The State Engineer’s curtailment authority in §37-92-502(2)(a), C.R.S., provides:

In the event that a discontinuance has been ordered pursuant to the provisions of this paragraph (a), and nevertheless such discontinuance does not cause water to become available to such senior priorities at the time and place of their need, then such discontinuance order shall be rescinded.

Thus, whether the ground water within the Proposed Basin would be available to or required for fulfillment of decreed surface rights is dependent upon whether curtailment of diversions thereof would “cause water to become available to such senior priorities at the time and place of their need.” *Id.* This has also been referred to as the “futile call doctrine.” *See Empire Lodge Homeowners’ Ass’n v. Moyer*, 39 P.3d 1139, 1156 (Colo. 2001) (“The futile call doctrine authorizes the State or Division Engineer to lift a curtailment order originally issued for the protection of decreed water rights under priority administration, if the person whose diversion is curtailed proves that discontinuance of that diversion will not cause water to become available to senior priorities under a call for administration.”).

Furthermore, in evaluating whether water would be required for the fulfillment of decreed surface rights, the State Engineer may not order curtailment unless the “diversion is causing or will cause *material injury* to such water rights having senior priorities.” §37-92-502(2)(a), C.R.S. (emphasis added). De minimis effects are not “material.” As discussed below, ground water within the proposed basin has no more than a de minimis impact on surface waters. The ground water within the Proposed Basin is not available to and required for the fulfillment of decreed surface rights, and therefore meets the First Prong of the definition.

7. The Proposed Basin Meets the Second Prong of the Definition. The Second Prong defines designated ground water in areas: (1) not adjacent to a continuously flowing stream, and (2) wherein ground water withdrawals have constituted the principal water usage for at least 15 years. The Proposed Basin meets the Second Prong because no continuously flowing stream exists in or near the Proposed Basin and ground water has constituted the principal, and indeed virtually the only, water usage ever recorded in the area.

According to the HRS Study (Exhibit B) there is virtually no surface flow in the area of the Proposed Basin, except during infrequent extreme storm events. The nearest continuously flowing stream that is in connection with the underground aquifer is Lone Tree Creek, at a point approximately 1.5 miles upstream of its confluence with the South Platte River, about 40 miles downgradient of the Proposed Basin. Thus, there is no “continuously flowing stream” within or even near, let alone “adjacent” to, the Proposed Basin.

As detailed in the HRS Study, any historical surface water use has been extremely limited, no doubt because little or no surface water is available. The HRS Study identified only two spring water rights within the Proposed Basin, neither of which have documented diversions. The HRS Study identified no evidence of direct diversions from Spring Creek. In contrast, the HRS Study identified 32 permitted wells within the Proposed Basin withdrawing an average of about 300 acre-feet per year; and about 97 percent of the 300 acre-feet per year is attributable to pumping of the NCWA Wells.

8. The Proposed Basin meets the de minimis impact standard. The Colorado Supreme Court stated in *Gallegos v. Colo. Ground Water Comm’n*, 147 P.3d 20, 28 (Colo. 2006) that “designated ground water cannot, as a matter of law, impact surface flows by greater than a de minimis amount.” Ground water within the Proposed Basin meets this requirement.

Black’s Law Dictionary defines “de minimis” as something that is “of the least,” “trifling,” “minimal,” and “of a fact or thing so insignificant that a Court may overlook it in deciding an issue or case.” In the context of designated ground water, the *de minimis* test has been held to be a “time-travel test.” See *Order Granting Summary Judgment Motions in Part and Denying Summary Judgment Motions in Part*, July 23, 2007, *Pioneer Irrigation Dist. v. Stulp Investment Co.*, Case No. 06CW31, district court, Yuma County.

The Colorado Supreme Court has held that the tributary character of water taking over a century to reach the stream is *de minimis* and, as a result, “is not part of the surface stream as contemplated by our Constitution,” and may be properly determined as designated ground water

Kuiper v. Lundvall, 529 P.2d 1328, 1331 (Colo. 1975). The 100-year test is a “travel time test,” meaning that the test is the length of time which the water, if left undisturbed, would reach the stream. *Pioneer Irrigation Dist.*, *supra* at 11. The travel time test assists in determining whether the ground water in its natural course would or would not be available to and required for fulfillment of decreed surface rights. *Id.* With respect to designated ground water, however, this is not a bright-line test; whether ground water taking less than 100 years to do so meets the de minimis standard for designated ground water must be evaluated on a case by case basis. *Id.* at 10.

The HRS Study determined that the advective travel time of ground water within the Proposed Basin to the point at which there is connection between the aquifer and the surface flow in Lone Tree Creek ranges from 153 to 177 years. The analysis completed by HRS demonstrates that any impacts to the nearest aquifer-connected surface stream “would be immeasurably small even after 100 years.” (HRS Study, p.47)

Although ground water within the Proposed Basin meets the travel time test, a travel time analysis does not describe the time at which a certain volume of ground water becomes available to the surface stream, as the travel time test does not indicate rate or volume of discharge into the surface stream. In this light, the plaintiffs in *Pioneer Irrigation Dist.*, *supra*, encouraged adoption of an analysis more stringent than the travel time test. This alternative approach was rejected by the court. Petitioner refers to this rejected alternative approach as the “depletion standard test.” The depletion standard test focused on the “length of time in which the use of the wells will affect the surface stream, not necessarily...the length of time which the water upon being undisturbed would reach the stream.” *Pioneer Irrigation Dist.*, *supra* at 11.

Although the court adopted the time travel test and rejected the depletion standard test, HRS also performed a depletion standard test for illustrative purposes. Specifically, HRS Study also performed an analysis of impacts from pumping of ground water within the Proposed Basin, finding that after 100 years of pumping the depletion rate to the nearest affected surface stream would be zero, and that after 103 years the depletion rate would be less than one-thousandth of one percent (0.0000036%), regardless of the volume pumped. Applying this rate of depletion to the entire calculated inflow to the aquifer, being about 900 acre-feet, the rate of depletion to the stream after 100 years of pumping would only be 0.000020 gpm – *less than one-ten thousandth of the outflow of a typical kitchen faucet*. These amounts are so small, and are so temporally remote, as to not be measurable within the accuracy of measurement and prediction methodologies. See *Simpson v. Yale Investments, Inc.*, 886 P.2d 689, 699 (Colo. 1994). Thus, the ground water in the Proposed Basin meets the de minimis standard under both the travel time test and the depletion standard test.

Finally, NCWA’s engineers predict that, based on the new information presented in the HRS Study and assuming the wells are tributary, water required for augmentation resulting from all historical and projected use of the NCWA Wells would not be needed by NCWA until the year 2123. Even after a century and a half of well use impacts to the South Platte River will total less than an acre-foot per year. Taken together, this information definitively demonstrates the de minimis nature of the actual affect of the ground water within the Proposed Basin on the flow of the nearest connected surface stream.

9. Available amounts of withdrawal. The HRS Study included an analysis of the water balance within the Proposed Basin. The water balance included alluvial ground water underflow from Wyoming, percolation of precipitation into the alluvial aquifer, alluvial ground water underflow across the County Line, well pumping, and evapotranspiration of ground water. The HRS Study concluded that the ground water in the proposed basin is essentially in balance: inflows equal outflows, such that no ground water mining or net increase or reduction in storage currently occurs in the aquifer. Total average annual net recharge to the alluvial aquifer within the Proposed Basin is approximately 900 acre-feet, which equates the amount available for withdrawal without creating a ground water mining condition. Accordingly, at least 900 acre-feet is available annually for appropriation within the Proposed Basin. §37-90-107(3),(5), C.R.S.

10. Designation is supported by the Legislative Intent of the 1965 Act. The 1965 Act provides in part that “[w]hile the doctrine of prior appropriation is recognized, such doctrine should be modified to permit the full economic development of *designated ground water resources*.” §37-90-102(1), C.R.S. By enacting the 1965 Act the General Assembly did not seek to modify the appropriation doctrine to permit the “full economic development” of all ground water resources, but rather, to modify the prior appropriation doctrine as to *designated ground water resources* to allow the full economic development thereof. Because the ground water within the Proposed Basin meets the definition of designated ground water, the Commission should permit the full development of the resource in accordance with the intent of the 1965 Act.

11. Findings Required by §37-90-106(1)(b), C.R.S. Section 37-90-106(b), C.R.S. requires the Colorado Ground Water Commission to make the following findings. These findings are supported by the HRS Study, attached hereto as Exhibit B.

- a. *Name of Aquifer within the Proposed Basin.* The name of the aquifer within the proposed designated ground water basin is the “Upper Spring Creek Alluvial Aquifer.”
- b. *Boundaries of each Aquifer Being Considered.* The boundaries of the aquifer being proposed for designation consist of the following, as shown on Exhibit A hereto:
 - i. *Northwest (upgradient) boundary:* the Colorado-Wyoming State Line.
 - ii. *Southeast (downgradient) boundary:* the county line between Larimer County and Weld County.
 - iii. *Southwest boundary:* the natural topographic watershed divide between Spring Creek and Spottlewood Creek or its tributaries.
 - iv. *Northeast boundary:* the natural topographic watershed divide between Spring Creek and Lone Tree Creek or its tributaries.
 - v. *Written description of the boundaries*

Township 12 North, Range 68 West, 6th PM

Section 20: E $\frac{1}{2}$ E $\frac{1}{2}$

Section 21: W $\frac{1}{2}$, W $\frac{1}{2}$ E $\frac{1}{2}$, and SE $\frac{1}{4}$ SE $\frac{1}{4}$

Section 27: W $\frac{1}{2}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$, and SE $\frac{1}{4}$ SE $\frac{1}{4}$

Section 28: E $\frac{1}{2}$, E $\frac{1}{2}$ NW $\frac{1}{4}$, and NW $\frac{1}{4}$ NW $\frac{1}{4}$

Section 33: E $\frac{1}{2}$

Section 34: All

Section 35: SW $\frac{1}{4}$ NW $\frac{1}{4}$, W $\frac{1}{2}$ SW $\frac{1}{4}$, and NE $\frac{1}{4}$ SW $\frac{1}{4}$

Township 11 North, Range 68 West, 6th PM

Section 1: SW $\frac{1}{4}$ SW $\frac{1}{4}$

Section 2: W $\frac{1}{2}$, SW $\frac{1}{4}$ NE $\frac{1}{4}$, and SE $\frac{1}{4}$

Section 3: All

Section 4: N $\frac{1}{2}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NE $\frac{1}{4}$, and NE $\frac{1}{4}$ SE $\frac{1}{4}$

Section 10: E $\frac{1}{2}$, N $\frac{1}{2}$ NW $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{2}$, and NE $\frac{1}{4}$ SW $\frac{1}{4}$

Section 11: All

Section 12: W $\frac{1}{2}$

Section 13: NW $\frac{1}{4}$, SW $\frac{1}{4}$ NE $\frac{1}{4}$, and S $\frac{1}{2}$

Section 14: NE $\frac{1}{4}$, NW $\frac{1}{4}$, SE $\frac{1}{4}$, and NE $\frac{1}{4}$ SW $\frac{1}{4}$, NW $\frac{1}{4}$ SW $\frac{1}{4}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$

Section 15: E $\frac{1}{2}$ NE $\frac{1}{4}$

Section 23: NE $\frac{1}{4}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$, and SE $\frac{1}{4}$ SE $\frac{1}{4}$

Section 24: All

Section 25: NE $\frac{1}{4}$ NE $\frac{1}{4}$

- c. *Estimated Quantity of Water Stored in Aquifer.* The estimated amount of water in storage in the Upper Spring Creek Aquifer within the boundaries specified above is 33,750 acre-feet, of which approximately 22,500 acre-feet is recoverable.
- d. *Estimated Annual Rate of Recharge.* The estimated annual average rate of recharge to the proposed designated basin is 900 acre-feet, of which 750 is percolation of precipitation into the aquifer and 150 acre-feet of which is recharge from underflow from Wyoming.
- e. *Estimated Use of Ground Water in the Area.* The average annual use of ground water from the Upper Spring Creek Alluvial Aquifer, exclusive of natural evapotranspiration, is estimated at approximately 407.5 acre-feet per year.
- f. *List of users withdrawing water during the fifteen-year period.* The list of those users who have been withdrawing water during the fifteen-year period, the use made of the water, the average annual quantity of water withdrawn, and the year in which the user began to withdraw water is shown in Exhibit C.

12. Exhibits. The following exhibits are attached to this Petition, and are incorporated by reference herein:

- a. *Exhibit A* – Map of the Proposed Upper Spring Creek Designated Basin.
- b. *Exhibit B* – Hydrogeologic Study Feasibility of Spring Creek Basin Designation, HRS Water Consultants, June 2009.
- c. *Exhibit C* – List of users, use made of water, average quantity of water withdrawn during the fifteen-year period, and year in which use began.

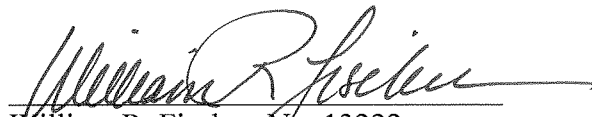
13. Publication and Publication Costs. Pursuant to §37-90-112(1), C.R.S., Petitioner requests that the Commission publish notice of this Petition in each concerned county to include Larimer County and Weld County. Pursuant to §37-90-116(1)(f), C.R.S., publication of the notice in accordance with §37-90-112(1), C.R.S. shall be paid for by Petitioner.

WHEREFORE, Petitioner respectfully requests that the Commission publish notice of this Petition, and, after publication and opportunity for hearing, determine the boundaries of the Upper Spring Creek Designated Ground Water Basin.

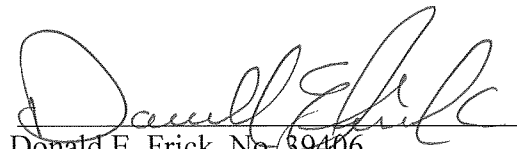
DATED: June 12, 2009.

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