



May 30, 2018

Mr. Jared Dains, P.E.
Applegate Group, Inc.
1490 West 121st Avenue, Suite 100
Denver, CO 80234

**Re: Greeley Pit Substitute Water Supply Plan (WDID 0302545, Plan ID 2965)
Greeley Pit, DRMS Permit No. M-1977-151 (WDID 0303034)
Section 36, T6N, R66W and Section 31, T6N, R65W, 6th P.M.
Water Division 1, Water District 3, Weld County**

Approval Period: April 1, 2018 through March 31, 2019 (March 31, 2020 if extended)
Contact Information for Mr. Dains: 303-452-6611; JaredDains@applegategroup.com

Dear Mr. Dains:

We have received your letter dated March 31, 2018, requesting renewal of the above-referenced substitute water supply plan ("SWSP") on behalf of R.M. Hiner Construction Co., Inc. ("Hiner" or "Applicant"). This SWSP is requested in accordance with § 37-90-137(11), C.R.S., to cover depletions caused by an existing sand and gravel mining operation known as the Greeley Pit. The required fee of \$257.00 for the renewal of this substitute water supply plan has been submitted (receipt no. 3685591). This substitute water supply plan was most recently approved on June 8, 2016 for operations through March 31, 2018.

SWSP Operations

The Greeley Pit (well permit no. 74638-F, WDID 0303034) is located in the NE¼ of Section 36, Township 6 North, Range 66 West and the NW¼ of Section 31, Township 6 North, Range 65 West of the 6th P.M., as shown on the attached Figure 1 (Vicinity Map). Hiner does not have any plans to mine or dewater the pit during this plan period, therefore depletions during this plan period will consist of evaporation and dust control use. Out-of-priority depletions from past and projected use at the Greeley Pit will be replaced with a combination of Hiner's ownership of 6.25 shares in the Greeley Irrigation Company and a lease with the City of Aurora.

Depletions

During this plan period, consumptive use at the Greeley Pit will be limited to evaporation from exposed ground water surface area and water used for dust control.

Net evaporative depletions were calculated using a gross annual evaporation of 45 inches from the exposed water surface, with a credit of 9.81 inches for effective precipitation. The current exposed surface area at the site is 71.8 acres. Pursuant to § 37-90-137(11)(b), C.R.S. and 2009CW49, a gravel pit operator or property owner does not need to replace depletions that occur due to evaporation from ground water exposed prior to January 1, 1981 as a result of open mining of sand and gravel ("pre-81 areas"), regardless of whether mining continued after December 31, 1980. This



office recognizes a total of 40.2 acres at the Greeley Pit as being pre-81 exposure. Accordingly, for the 71.8 acres of ground water currently exposed at the Greeley Pit, replacement of evaporative depletions is only required from the 31.6 acres exposed after December 31, 1980. Per the State Engineer's *General Guidelines for Substitute Supply Plans for Sand and Gravel Pits* as updated April 1, 2011, pre-81 areas are tied to the physical location at which the groundwater was exposed prior to January 1, 1981. The applicant has provided a map showing the specific location of the pre-81 area. The credits for the pre-81 area are tied to the location identified in the 1980 Aerial Photograph shown in the attached Figure 2 (Pre/Post 1981 Exposed Area) and may not be re-allocated to other areas of ground water exposure within the gravel pit boundary. The current exposed surface area is shown on the attached Figure 2 (Exposed Area Map). The net depletion of ground water due to evaporation from the surface area of the Greeley Pit exposed after December 31, 1980 was calculated to be 87.19 acre-feet per year, as shown on the attached Table 1.

Based on monthly average temperatures reported for the Greeley UNC weather station, ice cover was assumed for the months of December and January. The ice covered periods may be used to reduce the amount of evaporative losses that need to be replaced; however, for the purpose of this SWSP, the Applicant shall replace the net evaporation depletions from the exposed ground water surface area that may occur during the assumed ice covered period (December and January) for any time that the pit is not completely covered by ice. Computation of the net evaporation during any time that the pit is not completely covered by ice shall be determined as the pro-rata amount of the monthly gross evaporation rate distribution amount identified in the State Engineer's *General Guidelines for Substitute Supply Plans for Sand and Gravel Pits*, subtracting the pro-rata amount of the effective precipitation for that period.

The Applicant has estimated that a total of 1.00 acre-foot of water will be used for dust control purposes each year from April through September. A monthly breakdown of the estimated dust control use is shown in the attached Table 2.

The total consumptive use of ground water at the Greeley Pit is estimated to be 88.19 acre-feet per year for the approval period of this plan.

The Alluvial Water Accounting System ("AWAS"), which uses the Glover method, was used to determine the lagged depletions to the Cache la Poudre River from past and projected evaporation and operational losses at the site. The infinite aquifer boundary condition was selected because a parallel no-flow boundary could not be identified based on information from the USGS Hydrologic Atlas HA-746A. The following parameters were used in the model: a distance (X) of 1,120 feet from the centroid of the 39.7-acre exposed ground water surface to the river; a transmissivity (T) of 120,000 gallons per day per foot; and a specific yield (S) of 0.2.

The estimated lagged stream depletions due to past and projected operations at the Greeley Pit will total 86.20 acre-feet for the first year of operation of this SWSP and 86.33 acre-feet for the second year of operation, as shown on the attached Table 3.

Replacements

The sources of replacement water to be used for this SWSP are: 1) consumptive use credits associated with the historical irrigation use of 6.25 shares of the Greeley Irrigation Company; and 2) a non-irrigation season lease with the City of Aurora. The attached Table 5 shows the estimated monthly depletions and replacements for this plan period.

Greeley Irrigation Company ("GIC") Shares

Hiner owns a total of 6.25 shares of the Greeley Irrigation Company ("GIC") under the following certificates:

<u>Certificate No.</u>	<u>No. of Shares</u>	<u>Original Property</u>
2835	0.5	John & Barbara Barrett
3044	0.5	David Beckers
3352	0.5	Carmen Duran
3356	0.25	Mary Jane Johnson
3358	0.5	Darrin Morse
3364	0.2	Ray Smith
3365	0.8	Steve & Linda Story
3413	3.0	Henry M. Karre

A portion of the Greeley Canal No. 3 (WDID 0300934) was changed in Division 1 Water Court in case no. 1996CW658 based on a ditch-wide analysis by the Poudre Prairie Mutual Reservoir and Irrigation Company. Each share of GIC water provides the shareholder with both GIC direct flow water and Fossil Creek Reservoir water. The use of the subject ditch shares in this plan shall be in accordance with the terms and conditions decreed in case no. 1996CW658, including monthly and annual volumetric limits on water deliveries and monthly return flow requirements. The decree in case no. 1996CW658 found that 519.7 shares were used to irrigate 3,501 acres with an average historical consumptive use of 5,358 acre-feet per year, which yields an average consumptive use credit of 10.31 acre-feet per share (5,358 acre-feet ÷ 519.7 shares). Based on this pro-rata consumptive use, the 6.25 shares to be used in this plan are expected to yield 64.44 acre-feet of consumptive use annually (10.31 acre-feet per share × 6.25 shares). Paragraph 6.7.4 of the Poudre Prairie Decree limited future farm headgate deliveries of the GIC shares to 1,712 acre-feet per year (25.26 acre-feet per share) and 12,631 acre-feet (186.43 acre-feet per share) in any consecutive 10 year period. Deliveries of the 6.25 shares under this SWSP must comply with these limits.

The ditch-wide analysis decreed in case no. 1996CW658 determined the acreage irrigated with GIC water rights was 3,501 acres, or 6.74 acres per share. Of that, 2,098 acres were determined to have been dried up as a result of development ("dry-up pool"). The total required dry-up associated with the subject 6.25 shares is 42.1 acres. Dry up covenants have been obtained for the following shares:

<u>No. of Shares</u>	<u>Original Property</u>	<u>Farm No.</u>	<u>Dry-up Acreage</u>	<u>Acres per Share</u>
0.5	John & Barbara Barrett	unspecified	1.544	3.088
0.5	David Beckers	"floating"		
0.5	Carmen Duran	unspecified	1.03	2.06
0.25	Mary Jane Johnson (Paul Johnson)	E-104	0.48	1.92
0.5	Darrin Morse (Laurel & Richard Silver)	W-38	1.15	2.30
0.2	Ray Smith (Rueben Derr)	E-29	1.18	5.90
0.8	Steve & Linda Story (Earl & Twyla Wolf)	E-44	4.24	5.30
2.0	Henry M. Karre	E-102b	11.38	5.69
1.0	Henry M. Karre	E-102a	1.695 ^a	1.70
			22.699	

^a One of two (2.0) shares used on farm, 50% of acreage claimed as dry-up

The Becker's one-half (0.5) share was identified as a "floating share" as described in case no. 1996CW658 and may claim existing dried up acreage. In addition, the acreage irrigated by the subject

shares is below the irrigated-acreage-per-share historic average of 6.74. As such, the Applicant may claim the remaining 19.4 acres of required dry-up from the "dry-up pool".

The historical return flows shall be maintained in accordance with the return flow factors identified in case no. 1996CW658. The return flows associated with the delivery of Fossil Creek Reservoir water that is attributable to the 6.25 GIC shares shall also be maintained in accordance with the surface and subsurface factors decreed in case nos. 1996CW658. Pursuant to paragraph 6.7.6 of case no. 1996CW658, the subsurface component of the return flow obligation will be calculated based on the 5-year running average annual farm headgate deliveries of GIC direct flow water and Fossil Creek Reservoir water. The total annual deliveries for the last five years and the 5-year average that will be used for each year of operation are shown in the attached Table 4. For the purposes of this SWSP, you have estimated the 5-year average for the second year of operation based on the average of actual 2014-2017 deliveries and the projected 2018 yield for the 6.25 shares, as more completely described below. The actual subsurface return flow obligations for the second year of operation will be based on the average of actual deliveries for the period of 2014-2018.

As specified in case no. 1996CW658, all deliveries of GIC water incur a return flow obligation to the stream system made up of a surface and subsurface component. The surface component of the return flow obligation of GIC direct flow water will be calculated by multiplying deliveries by 0.237 (23.7%). The surface component of the return flow obligation associated with the Applicant's use of Fossil Creek Reservoir water will be calculated by multiplying those deliveries by 0.201 (20.1%). As noted above, the subsurface component of the return flow obligation will be calculated by multiplying the 5-year average annual delivery of GIC water by the monthly subsurface return flow factors given in Appendix A-2 of the decree entered in case no. 1996CW658 (see Column A of Table 4). As shown in Table 4, the estimated subsurface return flow obligations for GIC direct flow deliveries and Fossil Creek reservoir deliveries total 7.26 acre-feet and 0.01 acre-feet, respectively, for the first year of this plan period and 11.16 acre-feet and 0.31 acre-feet, respectively, for the second year of this plan period. The quantity of GIC water remaining after the Applicant has satisfied its return flow obligations is equivalent to the historical consumptive use attributable to the shares.

For the purposes of this SWSP, you have used a projected yield of 20.31 acre-feet of GIC direct flow water per share and 1.19 acre-feet of Fossil Creek Reservoir deliveries per share. These amounts are consistent with projected deliveries per share for Year One as described in paragraph 28 of the decree entered in case no. 2003CW348. Projected deliveries for Year One were calculated in accordance with paragraph 20.3.3 of the decree entered in case no. 2003CW99, and are based on 2002-2006 recorded deliveries. The use of the Year One projected deliveries is acceptable for this plan period and appears reasonable based on current conditions. As shown in the attached Table 5, total credit for the Applicant's 6.25 GIC shares is projected to be 102.80 acre-feet for the irrigation season (not including subsurface return flow obligations, which are incorporated as part of the augmentation requirement in Table 5). The use of GIC's 60 preferred rights in Fossil Creek Reservoir is currently in dispute between the North Poudre Irrigation Company and GIC. Until this dispute is resolved, the GIC preferred rights are not a reliable source and cannot be relied on as a replacement source. Excluding the Fossil Creek Reservoir component of the GIC deliveries, the projected credit for the 6.25 shares will equal 96.87 acre-feet per year (6.25 shares \times 15.50 acre-feet/share). Should actual GIC deliveries be less than projected deliveries, the Applicant is obligated to obtain additional or alternate replacement supplies to replace all depletions at the Greeley Pit.

Based on the actual annual deliveries reported for 2011-2015, the 10-year farm headgate delivery will not exceed 186.43 acre-feet per share, or 1165.19 acre-feet for all 6.25 shares, so long

as deliveries do not exceed the annual limitation of 25.26 acre-feet per share, or 157.87 acre-feet for all 6.25 shares, decreed in case no. 1996CW658.

The Applicant's GIC shares will be delivered to the Cache la Poudre River at the 23rd Avenue and Fourth Street Return Station (WDID 0302318). Those replacements will be made directly adjacent to the Greeley Pit. Due to the close proximity of the return station to the Greeley Pit, no transit losses will be assessed for the delivery of the GIC shares. The replacement deliveries will be made above the Ogilvy Ditch, which is typically the first calling water right below the Greeley Pit point of depletion during the period of April to October.

City of Aurora Lease

The Applicant has entered into an agreement with the City of Aurora ("Aurora") for 26.2 acre-feet of fully reusable municipal wastewater return flows that will be used to make replacements during the period of November 1, 2018 through March 31, 2019. The lease may be extended for additional one-year periods. It is anticipated that a lease extension will be obtained for 28.3 acre-feet of water for the period of November 1, 2019 through March 31, 2020. **This SWSP will only be extended for the period of April 1, 2019 through March 31, 2020 if a copy of the executed lease is provided to this office on or before March 31, 2019.** The releases will be made from the Metro Waste Water Reclamation Facility (WDID 0200700) located in Denver on the South Platte River approximately 66 miles upstream from the Cache la Poudre confluence. Therefore a 16.5% (0.25% per mile) river transit loss will be assessed on all deliveries, unless otherwise determined by the Water Commissioner for District 2. During the months of November through March, it is possible for a call to be placed at the Evans Number 2 Ditch headgate for Milton Reservoir, or a call at the Western Ditch, or the Union Ditch to fill Lower Latham Reservoir, any of which could potentially sweep the river. It is the Applicant's responsibility to track the daily call and make arrangements as necessary to ensure this water is bypassed or otherwise delivered to the Cache la Poudre and South Platte River confluence. The District 3 Water Commissioner has confirmed there is no call in the winter for the stretch of the Cache la Poudre River between the Greeley Pit and the confluence with the South Platte River. Therefore, as long as a diversion structure is not sweeping the South Platte River, the Aurora lease is able to provide replacement water on behalf of the Greeley Pit.

Additional Sources

Supplemental leases will be obtained in the event that the above-described sources are insufficient to replace all depletions from the Greeley Pit. Such supplemental leases may be obtained from any authorized augmentation source that is capable of making replacements at the most upstream calling right impacted by the Greeley Pit depletions.

Lease of Excess Credits

The Applicant has requested permission to lease out any of its excess replacement credit to other gravel pit SWSPs approved pursuant to § 37-90-137(11), C.R.S., to the extent such excess replacement credit exists. The Applicant must provide written notice to the Division Engineer and Water Commissioner at least 30 days in advance of the desired commencement of use of the excess replacement credits, which must include the specific plan in which the credits will be used, the provision in the plan that allows an unnamed source to be added for credit, the annual and monthly amount of excess replacement credit available, the location at which the water will be delivered to the stream, and a copy of a lease agreement between the Applicant and the purchaser of the excess replacement credits if the additional plan is not owned by the Applicant. **The Applicant cannot**

claim credit for the use of the excess replacement credits in any other plan until they have received written approval from the Division Engineer or Water Commissioner. Any use of any such excess replacement credits must continue to be directly related to the mining of sand and gravel.

Long Term Augmentation

The final reclamation plan for the mining site is to create four unlined lakes with a total surface area of 95 acres. These lakes will expose ground water to evaporation and as such will create a long term augmentation obligation. In accordance with the letter dated April 30, 2010 (copy attached) from the Colorado Division of Reclamation, Mining, and Safety ("DRMS"), all sand and gravel mining operators must comply with the requirements of the Colorado Reclamation Act and the Mineral Rules and Regulations for the protection of water resources. The April 30, 2010 letter from DRMS requires that you provide information to DRMS to demonstrate you can replace long term injurious stream depletions that result from mining related exposure of ground water. The DRMS letter identifies four approaches to satisfy this requirement. In accordance with approach no. 4, you have provided an affidavit dated February 12, 2013 that dedicates 3.0 shares of the Applicant's GIC water as replacement water solely for this SWSP for as long as there are depletions at this gravel pit site or until such time as another replacement source is obtained. A copy of the affidavit is attached to this letter. The Applicant has obtained an additional 3.25 GIC shares since the previous SWSP approval for a total ownership of 6.25 shares.

The 6.25 GIC shares owned by Hiner are **not sufficient** by themselves to provide long term augmentation water for the current 71.8 acres of exposed ground water, nor for the final reclamation plan of 95 acres of exposed ground water. According to previous SWSP requests, the Applicant is in the process of acquiring additional GIC shares for a total of at least 8.5 shares. The proposed 8.5 shares are expected to provide approximately 87.64 acre-feet of consumptive use credit per year (10.31 acre-feet per share × 8.5 shares). Although this amount exceeds the depletions associated with the current 71.8 acres of exposed ground water at the site, **additional replacement water will need to be obtained to replace depletions from the 95 acres of exposed ground water proposed to remain at the site after final reclamation.** According to information in the DRMS files, if the Applicant is not able to purchase the required water shares, the DRMS will calculate the required financial warranty to backfill the exposed ground water areas not covered by the dedicated shares.

SWSP Conditions of Approval

I hereby approve the proposed substitute water supply plan in accordance with § 37-90-137(11), C.R.S., subject to the following conditions:

1. This plan shall be valid for the period of April 1, 2018 through March 31, 2019 (or March 31, 2020, if extended) unless otherwise revoked or superseded by decree. **This SWSP will only be extended for the period of April 1, 2019 through March 31, 2020 if a copy of the executed lease for replacement water described herein are provided to this office on or before March 31, 2019.** If this plan will not be made absolute by a water court action by the plan's expiration date, a renewal request must be submitted to this office with the statutory fee of \$257 prior to the expiration date but no later than February 1, 2019 (February 1, 2020, if extended). If a renewal request is received after the expiration date of this plan, it will be considered a request for a new SWSP and the \$1,593 filing fee will apply.

2. Well permit no. 74638-F has been obtained for the current use and exposed pond surface area of the gravel pit in accordance with § 37-90-137(2) and (11), C.R.S.
3. The total surface area of the ground water exposed at the Greeley Pit after December 31, 1980 must not exceed 31.8 acres, which results in a maximum annual evaporative loss of 92.64 acre-feet (87.19 acre-feet assuming ice cover during the months of December and January).
4. The annual amount of water used at the Greeley Pit for dust control shall not exceed 1.00 acre-feet.
5. Total consumption at the Greeley Pit must not exceed these aforementioned amounts unless an amendment is made to this plan.
6. Approval of this plan is for the purposes as stated herein. Any additional uses of the water will be allowed only if a new SWSP is approved for those additional uses.
7. Applicant shall replace the net evaporative depletions from the exposed ground water surface area that may occur during the assumed ice covered period (December and January) for any time that the exposed ground water in the pit is not completely covered by ice.
8. The replacement water that is the subject of this plan cannot be sold or leased to any other entity, unless prior written approval is granted by the water commissioner and/or the division engineer. As a condition of subsequent renewals of this substitute water supply plan, the replacement water must be appurtenant to this site until a plan for augmentation is obtained.
9. The Applicant has proposed to use for augmentation, water available from any other source legally available for augmentation and which can be provided in the amount, at the time, and at the location required to replace out of priority depletions from the Greeley Pit. Additional sources of replacement water in this SWSP may only be used if the Applicant complies with the attached Division One Administration Protocol "*Use of Replacement Sources Not Specifically Identified in an SWSP or Augmentation Plan*".
10. All releases of replacement water must be sufficient to cover all out-of-priority depletions in time, place, and amount and must be made under the direction and/or the approval of the water commissioner. The release of replacement water may be aggregated to maximize beneficial use. The water commissioner and/or the division engineer shall determine the rate and timing of an aggregated release. The Applicant is required to coordinate the delivery location of replacement water with the water commissioner to ensure out-of-priority depletions are adequately replaced to prevent injury to other water rights.
11. The water attributable to the 6.25 shares of the GIC must continue to be diverted in priority at the ditch and then measured back to the Cache la Poudre River in the vicinity of the Greeley Pit. Adequate measuring devices acceptable to the water commissioner must be installed.
12. All pumping for dust control purposes shall be measured in a manner acceptable to the division engineer.
13. Adequate accounting of depletions and replacements must be provided to the division engineer in Greeley (DNR_Div1Accounting@state.co.us) and the water commissioner (Mark Simpson at Mark.Simpson@state.co.us) on a monthly basis or other interval acceptable to both of them. The accounting form provided with your application is subject to modification and approval by the division engineer. All amounts shall be in acre-feet. Submitted accounting shall conform to the Administration Protocol "*Augmentation Plan Accounting, Division One - South Platte River*" (attached).

14. The name, address, and phone number of the contact person who will be responsible for the operation and accounting of this plan must be provided on the accounting forms submitted to the division engineer and the water commissioner.
15. Conveyance loss for delivery of augmentation water is subject to assessment and modification as determined by the water commissioner or division engineer.
16. If reclamation of the mine site will produce a permanent water surface exposing groundwater to evaporation, an application for a plan for augmentation must be filed with the Division 1 Water Court at least three years prior to the completion of mining to include, but not be limited to, long-term evaporation losses and lagged depletions. If a lined pond results after reclamation, replacement of lagged depletions shall continue until there is no longer an effect on stream flow. Granting of this plan does not imply approval by this office of any such court application(s).
17. For the purposes of this SWSP, the previously submitted affidavit dedicating 3.0 GIC shares as replacement water solely to this SWSP will be accepted for the dedication of the shares; however, if the State Engineer determines that a different affidavit or dedication process is necessary to assure proper dedication of the shares, additional information may be required prior to future SWSP approvals. **A copy of the dedication for the additional 3.25 shares obtained by the Applicant must be provided to this office.**
18. Approval of this SWSP does not relieve the Applicant of their obligation to actively pursue the acquisition of these additional shares of GIC water or develop an alternate plan for achieving compliance with the DRMS's April 30, 2010 letter. Prior to future approvals the Applicant must dedicate additional water to this plan or propose other steps that will be taken to prevent the exposure of additional ground water at the pit and associated long term augmentation requirements.
19. Dewatering is not expected to occur at this site during the SWSP approval period. However, in the event that dewatering will occur at the site during the SWSP approval period, note that as long as the pit is continuously dewatered, the water returned to the stream system should be adequate to offset the depletions. Once dewatering at this site ceases, the delayed depletions must be addressed, including depletions resulting from the gradual refilling of the pit. At least three years prior to completion of dewatering, a plan must be submitted that specifies how the post pumping dewatering depletions (including refilling of the pit) will be replaced in time, place and amount.
20. The State Engineer may revoke this SWSP or add additional restrictions to its operation if at any time the State Engineer determines that injury to other vested water rights has occurred or will occur as a result of the operation of this SWSP. Should this SWSP expire without renewal or be revoked prior to adjudication of a permanent plan for augmentation, all use of water at the pit must cease immediately.
21. In accordance with amendments to § 25-8-202-(7), C.R.S., and "Senate Bill 89-181 Rules and Regulations" adopted on February 4, 1992, the State Engineer shall determine if this substitute water supply plan is of a quality to meet requirements of use to which the senior appropriation receiving the substitute supply has normally been put. As such, water quality data or analyses may be requested at any time to determine if the requirement of use of the senior appropriator is met.
22. The decision of the state engineer shall have no precedential or evidentiary force, shall not create any presumptions, shift the burden of proof, or serve as a defense in any pending water court case or any other legal action that may be initiated concerning this plan. This

decision shall not bind the state engineer to act in a similar manner in any other applications involving other plans, or in any proposed renewal of this plan, and shall not imply concurrence with any findings of fact or conclusions of law contained herein, or with the engineering methodologies used by the Applicant.

If you have any questions concerning this approval, please contact Sarah Brucker in Denver at 303-866-3581 or Michael Hein in Greeley at 970-352-8712.

Sincerely,



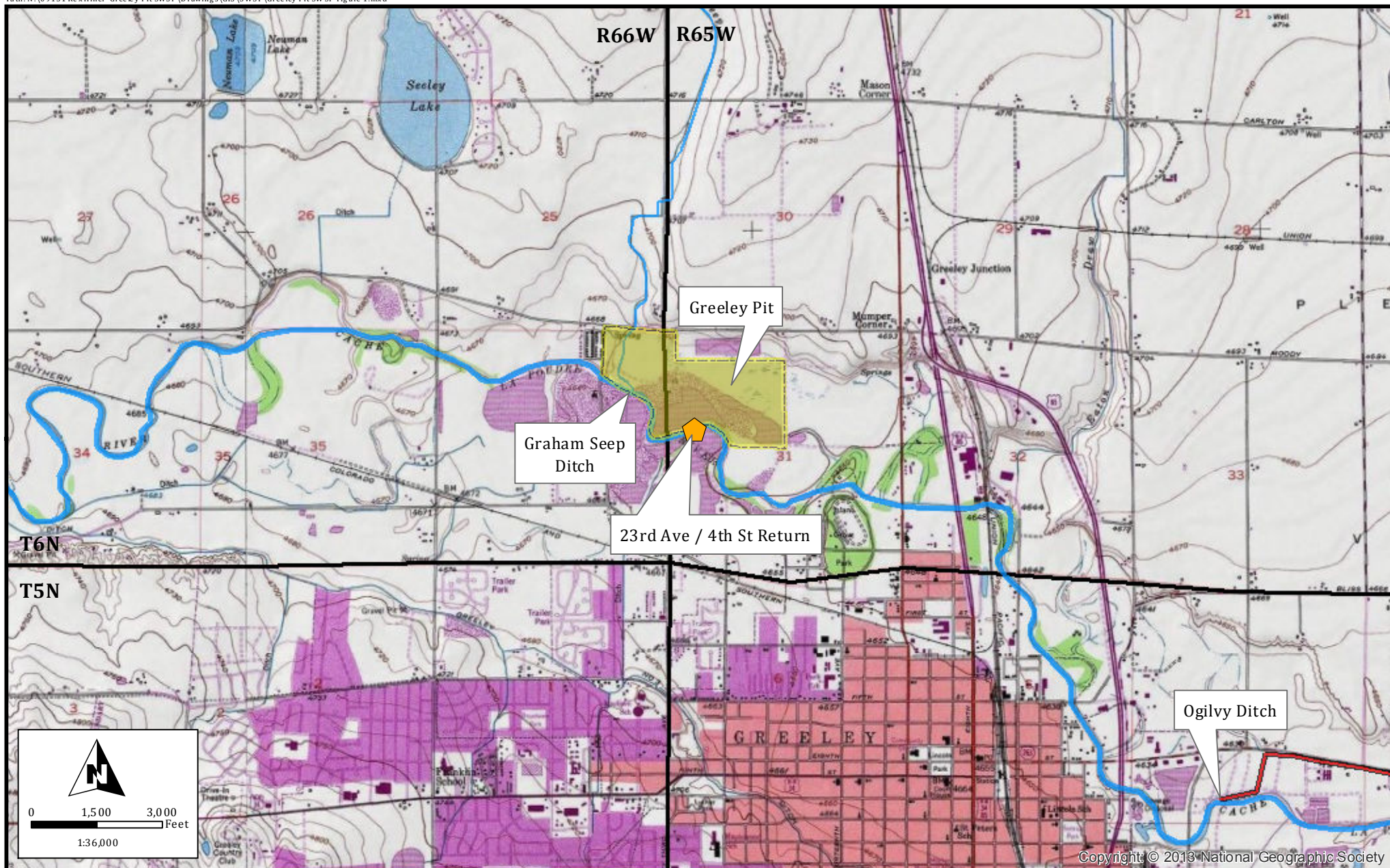
for Jeff Deatherage, P.E.
Chief of Water Supply

Attachments: Figure 1 (Vicinity Map)
Figure 2 (Pre/Post 1981 Exposed Area)
Figure 2 (Exposed Area Map)
Tables 1 - 5
City of Aurora 2018-2019 lease
April 30, 2010 letter from DRMS
Water Right Dedication Affidavit for 3.0 GIC shares
Division One Administration Protocols: *"Use of Replacement Sources Not Specifically Identified in an SWSP or Augmentation Plan"* and *"Augmentation Plan Accounting, Division One - South Platte Basin"*

Cc: Michael Hein, Assistant Division Engineer, Michael.Hein@state.co.us
810 9th Street, Suite 200, Greeley, CO 80631; 970-352-8712

Mark Simpson, Water Commissioner, Water District 3, Mark.Simpson@state.co.us

Division of Reclamation, Mining and Safety, Peter.Hays@state.co.us



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GREELEY PIT (M-1977-151) SWSP

Vicinity Map

Date: 3 Mar 2014

Job #: 09-131

Drawn By: JMD

Figure:




1

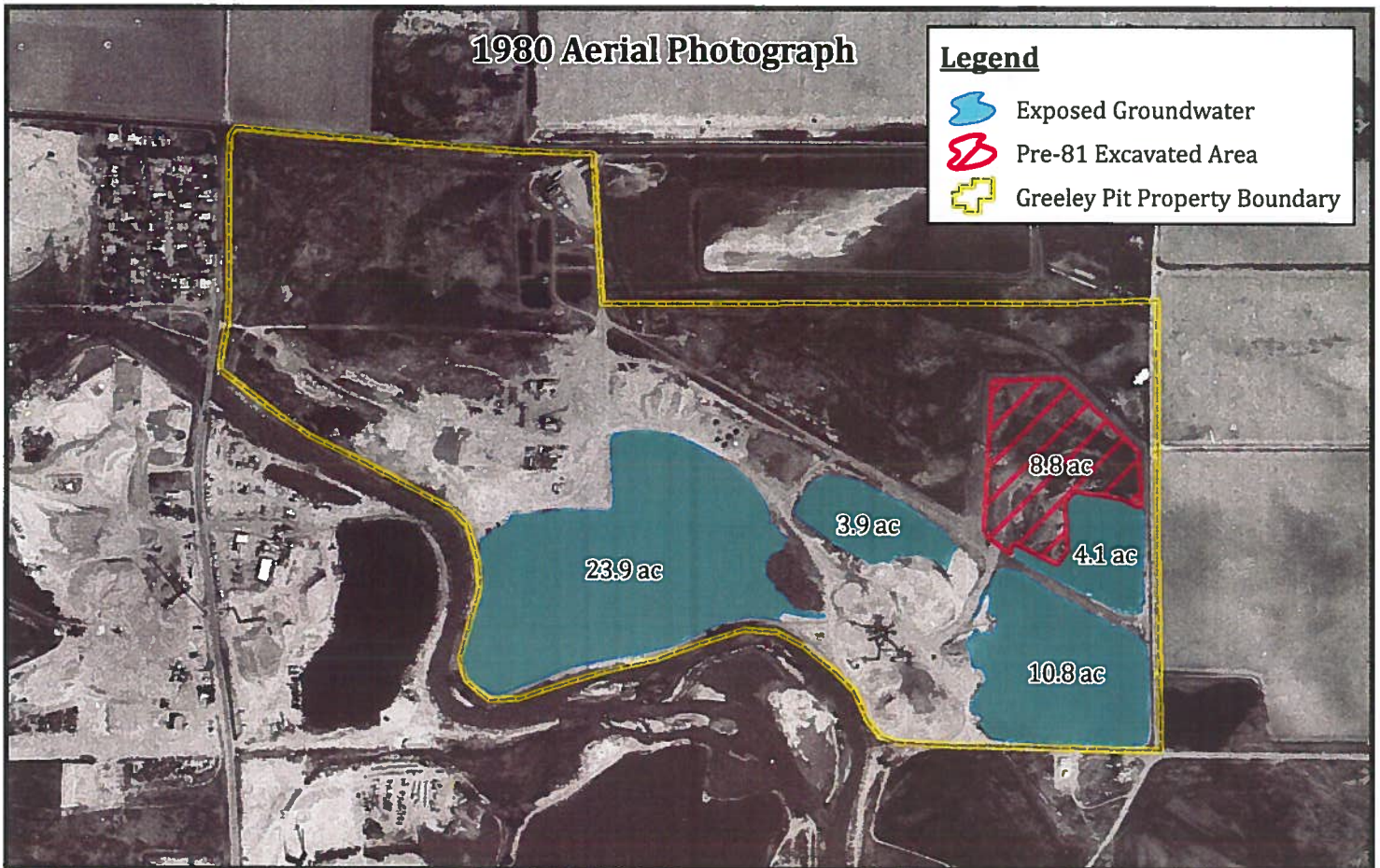
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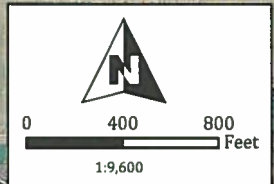
1980 Aerial Photograph

Legend

-  Exposed Groundwater
-  Pre-81 Excavated Area
-  Greeley Pit Property Boundary



2009 Aerial Photograph



Water Resource Advisors for the West
 1499 West 120th Ave., Ste 200 Phone: (303) 452-6611
 Denver, CO 80234-2728 Fax: (303) 452-2759
 www.ApplegateGroup.com e-mail: info@applegategroup.com

GREELEY PIT SWSP
 M-1977-151
 Pre/Post 1981 Exposed Area

Date: 18 May 2010

Job #: 09-131

Drawn By: JMD

Figure:

2

Of:

2

-  Exposed Area
-  Greeley Pit Property Boundary
- World Imagery
- Low Resolution 15m Imagery
- High Resolution 60cm Imagery
- High Resolution 30cm Imagery
- Citations



Table No. 1

R.M. Hiner Construction Co., Inc.
Greeley Pit (M-1977-151)



Gross Annual Evaporation =	45	inches per NOAA Technical Report NWS 33
Historical Consumptive Use Credit =	70%	of monthly precipitation
Freezing Point of Water =	32	°F
Current Net Acreage Exposed =	31.6	acres

Date Revised: 3/31/2018

AG Job #: 09-131

**Evaporative Consumptive Use (aka Evap CU)
From Pond Surface**

Month	Net Exposed Area [ac] (A)	Percent of Annual Evaporation (B)	Gross Monthly Evaporation [in] (C)	Monthly Precip [in] (D)	Monthly CU Credit [in] (E)	Monthly Avg Temp [°F] (F)	Net Evap [in] (G)	Evap CU [ac-ft] (H)
Apr-18	31.6	9.0%	4.05	1.79	1.25	49.4	2.80	7.37
May-18	31.6	12.0%	5.40	2.45	1.72	58.6	3.69	9.70
Jun-18	31.6	14.5%	6.53	1.90	1.33	68.1	5.20	13.68
Jul-18	31.6	15.0%	6.75	1.48	1.04	73.8	5.71	15.05
Aug-18	31.6	13.5%	6.08	1.15	0.81	71.7	5.27	13.88
Sep-18	31.6	10.0%	4.50	1.11	0.78	63.0	3.72	9.80
Oct-18	31.6	7.0%	3.15	1.03	0.72	50.9	2.43	6.40
Nov-18	31.6	4.0%	1.80	0.78	0.55	37.5	1.25	3.30
Dec-18	31.6	3.0%	1.35	0.41	0.29	29.4	ICE	0.00
Jan-19	31.6	3.0%	1.35	0.48	0.34	28.6	ICE	0.00
Feb-19	31.6	3.5%	1.58	0.37	0.26	33.5	1.32	3.47
Mar-19	31.6	5.5%	2.48	1.07	0.75	41.1	1.73	4.55
Year 1 Total	-	100%	45.00	14.02	9.81	-	33.11	87.19
Apr-19	31.6	9.0%	4.05	1.79	1.25	49.4	2.80	7.37
May-19	31.6	12.0%	5.40	2.45	1.72	58.6	3.69	9.70
Jun-19	31.6	14.5%	6.53	1.90	1.33	68.1	5.20	13.68
Jul-19	31.6	15.0%	6.75	1.48	1.04	73.8	5.71	15.05
Aug-19	31.6	13.5%	6.08	1.15	0.81	71.7	5.27	13.88
Sep-19	31.6	10.0%	4.50	1.11	0.78	63.0	3.72	9.80
Oct-19	31.6	7.0%	3.15	1.03	0.72	50.9	2.43	6.40
Nov-19	31.6	4.0%	1.80	0.78	0.55	37.5	1.25	3.30
Dec-19	31.6	3.0%	1.35	0.41	0.29	29.4	ICE	0.00
Jan-20	31.6	3.0%	1.35	0.48	0.34	28.6	ICE	0.00
Feb-20	31.6	3.5%	1.58	0.37	0.26	33.5	1.32	3.47
Mar-20	31.6	5.5%	2.48	1.07	0.75	41.1	1.73	4.55
Year 2 Total	-	100%	45.00	14.02	9.81	-	33.11	87.19

Notes:

(A) Net exposed area requiring augmentation. Increases above the current value to account for additional exposure anticipated over the year

(B) Taken from *General Guidelines for Substitute Water Supply Plans for Sand and Gravel Pits Submitted to the State Engineer* for elevations below 6500 ft MSL

(C) Gross monthly evaporation = (Gross Annual Evaporation) * (B)

(D) Monthly precipitation from GREELEY UNC, COLORADO (053553) weather station. Period of record is 1967 to 2005

(E) Monthly consumptive use credit = (Historical Consumptive Use Credit) * (D)

(F) Monthly average temperature from GREELEY UNC, COLORADO (053553) weather station. Period of record is 1967 to 2005

(G) Net evaporation = (C) - (E) if the monthly average temperature is greater than freezing. Otherwise, the pond is assumed to be frozen

(H) Evap CU = (A) * (G)/12

Table No. 2

R.M. Hiner Construction Co., Inc.
Greeley Pit (M-1977-151)



Moisture Content of Product =	4%	by weight
Water Used for Dust Control =	1.0	acre-foot per year
Sand & Gravel Specific Weight =	125	lb/ft ³ (http://www.reade.com/Particle_Briefings/spec_gra2.html)
Sand & Gravel Porosity =	45%	(estimated by operator)

Date Revised: 3/31/2018

AG Job #: 09-131

**Operational Consumptive Use (aka Operation CU)
From Mining**

Month	Monthly Production [tons] (A)	Water Retained in Product [ac-ft] (B)	Intermittent Fill Volume [ac-ft] (C)	Water Used for Dust Control [ac-ft] (D)	Operation CU [ac-ft] (E)
Apr-18	0	0.00	0.00	0.10	0.10
May-18	0	0.00	0.00	0.15	0.15
Jun-18	0	0.00	0.00	0.20	0.20
Jul-18	0	0.00	0.00	0.25	0.25
Aug-18	0	0.00	0.00	0.20	0.20
Sep-18	0	0.00	0.00	0.10	0.10
Oct-18	0	0.00	0.00	0.00	0.00
Nov-18	0	0.00	0.00	0.00	0.00
Dec-18	0	0.00	0.00	0.00	0.00
Jan-19	0	0.00	0.00	0.00	0.00
Feb-19	0	0.00	0.00	0.00	0.00
Mar-19	0	0.00	0.00	0.00	0.00
Year 1 Total	0	0.00	0.00	1.00	1.00
Apr-19	0	0.00	0.00	0.10	0.10
May-19	0	0.00	0.00	0.15	0.15
Jun-19	0	0.00	0.00	0.20	0.20
Jul-19	0	0.00	0.00	0.25	0.25
Aug-19	0	0.00	0.00	0.20	0.20
Sep-19	0	0.00	0.00	0.10	0.10
Oct-19	0	0.00	0.00	0.00	0.00
Nov-19	0	0.00	0.00	0.00	0.00
Dec-19	0	0.00	0.00	0.00	0.00
Jan-20	0	0.00	0.00	0.00	0.00
Feb-20	0	0.00	0.00	0.00	0.00
Mar-20	0	0.00	0.00	0.00	0.00
Year 2 Total	0	0.00	0.00	1.00	1.00

Notes:

(A) Estimated monthly production volumes provided by operator

(B) Water Retained in Product = [(Moisture Content of Product) * (A) * 2000] / (62.4 * 43560)

(C) Intermittent Fill Volume = (Volume of Mined Material) x (1 - Porosity) - (B). Mine material volume estimated using specific weight of material.

(D) Water Used for Dust Control is estimated to be 1 acre-foot per year and is distributed according to monthly production volumes

(E) Operation CU = (B) + (C) + (D)

Table No. 3

R.M. Hiner Construction Co., Inc.
Greeley Pit (M-1977-151)



Lagging Distance (X) =	1,120	feet
Aquifer Transmissivity (T) =	120,000	gallons per day per foot
Specific Yield =	0.2	
Aquifer Width (W) =	Infinite	

Date Revised: 3/31/2018

AG Job #: 09-131

**Lagged Depletions
From Mining**

Month	Evaporation CU [ac-ft] (A)	Operation CU [ac-ft] (B)	Total CU [ac-ft] (C)	Lagged Depletions [ac-ft] (D)
Apr-18	7.37	0.10	7.47	5.75
May-18	9.70	0.15	9.85	7.74
Jun-18	13.68	0.20	13.88	10.05
Jul-18	15.05	0.25	15.30	12.24
Aug-18	13.88	0.20	14.08	12.47
Sep-18	9.80	0.10	9.90	10.57
Oct-18	6.40	0.00	6.40	8.44
Nov-18	3.30	0.00	3.30	5.86
Dec-18	0.00	0.00	0.00	3.51
Jan-19	0.00	0.00	0.00	2.23
Feb-19	3.47	0.00	3.47	2.98
Mar-19	4.55	0.00	4.55	4.36
Year 1 Total	87.19	1.00	88.19	86.20
Apr-19	7.37	0.10	7.47	5.76
May-19	9.70	0.15	9.85	7.75
Jun-19	13.68	0.20	13.88	10.06
Jul-19	15.05	0.25	15.30	12.25
Aug-19	13.88	0.20	14.08	12.48
Sep-19	9.80	0.10	9.90	10.58
Oct-19	6.40	0.00	6.40	8.45
Nov-19	3.30	0.00	3.30	5.86
Dec-19	0.00	0.00	0.00	3.51
Jan-20	0.00	0.00	0.00	2.23
Feb-20	3.47	0.00	3.47	3.06
Mar-20	4.55	0.00	4.55	4.34
Year 2 Total	87.19	1.00	88.19	86.33

Notes:

(A) Evaporation CU from Table 1

(B) Operation CU from Table 2

(C) Total CU = (A) + (B)

(D) Lagged depletions from total CU. Accounts for evaporation and operational uses prior to April 2011 in the amount of 76.60 ac-ft/yr

Table No. 4

R.M. Hiner Construction Co., Inc.
Greeley Pit (M-1977-151)



Water Year	Total Annual Delivery [ac-ft]		Remarks
	GIC Direct Flow	Fossil Creek Reservoir	
2013	45.50	0.15	Actual deliveries for SWSP
2014	15.99	0.00	Actual deliveries for SWSP
2015	13.25	0.00	Actual deliveries for SWSP
2016	36.76	0.00	Actual deliveries for SWSP
2017	39.65	0.00	Actual deliveries for SWSP
2018	126.94	7.44	Average delivery for three shares
Year 1 Average	30.23	0.03	For estimating return flow obligations in Year 1
Year 2 Average	46.52	1.49	For estimating return flow obligations in Year 2

Date Revised: 3/31/2018

AG Job #: 08-127

Estimated GIC Subsurface Return Flow Obligations

Month	GIC Direct Flow		Fossil Creek Reservoir	
	GIC Direct Subsurface Return Flow Factor	GIC Direct Subsurface RF Obligation [ac-ft]	Fossil Creek Subsurface Return Flow Factor	Fossil Creek Subsurface RF Obligation [ac-ft]
	(A)	(B)	(C)	(D)
Apr-18	1.5%	0.45	1.4%	0.00
May-18	1.8%	0.54	1.3%	0.00
Jun-18	2.1%	0.63	1.2%	0.00
Jul-18	2.3%	0.70	1.5%	0.00
Aug-18	2.4%	0.73	2.4%	0.00
Sep-18	2.4%	0.73	2.5%	0.00
Oct-18	2.3%	0.70	2.1%	0.00
Nov-18	2.1%	0.63	2.0%	0.00
Dec-18	2.0%	0.60	1.8%	0.00
Jan-19	1.8%	0.54	1.7%	0.00
Feb-19	1.7%	0.51	1.6%	0.00
Mar-19	1.6%	0.48	1.5%	0.00
Year 1 Total	24.0%	7.26	21.0%	0.01
Apr-19	1.5%	0.70	1.4%	0.02
May-19	1.8%	0.84	1.3%	0.02
Jun-19	2.1%	0.98	1.2%	0.02
Jul-19	2.3%	1.07	1.5%	0.02
Aug-19	2.4%	1.12	2.4%	0.04
Sep-19	2.4%	1.12	2.5%	0.04
Oct-19	2.3%	1.07	2.1%	0.03
Nov-19	2.1%	0.98	2.0%	0.03
Dec-19	2.0%	0.93	1.8%	0.03
Jan-20	1.8%	0.84	1.7%	0.03
Feb-20	1.7%	0.79	1.6%	0.02
Mar-20	1.6%	0.74	1.5%	0.02
Year 2 Total	24.0%	11.16	21.0%	0.31

Notes:

(A) Monthly subsurface return flow factors per Poudre Prairie Decree

(B) Equals Column (A) multiplied by the average total annual delivery of GIC direct flow water. Annual delivery estimated from WC records

(C) Monthly subsurface return flow factors per Poudre Prairie Decree

(D) Equals Column (C) multiplied by the average total annual delivery of Fossil Creek Reservoir water. Annual delivery estimated from WC records

Table No. 5

R.M. Hiner Construction Co., Inc.
Greeley Pit (M-1977-151)



GIC Direct Surface RF Factor = 23.7% per Poudre Prairie Decree
Fossil Creek Surface RF Factor = 20.1% per Poudre Prairie Decree
Number of GIC Shares in SWSP = 6.25

River Transit Loss = 0.25% per mile
Aurora Lease Transit Distance = 66.0 miles
Aurora Lease Transit Loss = 16.50%

Date Revised: 3/31/2018

AG Job #: 09-131

Water Balance

Month	Augmentation Requirement [ac-ft] (A)	GIC Direct Flow		Fossil Creek Reservoir		Estimated Total GIC Credit for all shares [ac-ft] (F)	Bucklen Pit SWSP Excess Credit Lease [ac-ft] (G)	Aurora Lease Amount [ac-ft] (H)	Aurora Lease Credit [ac-ft] (I)	Net Affect to River [ac-ft] (J)
		Projected GIC Direct Deliveries [ac-ft / share] (B)	Estimated GIC Direct Credit [ac-ft / share] (C)	Projected Fossil Creek Deliveries [ac-ft / share] (D)	Estimated Fossil Creek Credit [ac-ft / share] (E)					
Apr-18	6.20	1.69	1.29	0.03	0.02	8.21			0.00	2.01
May-18	8.28	3.38	2.58	0.00	0.00	16.12			0.00	7.83
Jun-18	10.69	3.29	2.51	0.06	0.05	15.99			0.00	5.30
Jul-18	12.94	3.33	2.54	0.31	0.25	17.43			0.00	4.49
Aug-18	13.20	3.08	2.35	0.61	0.49	17.73			0.00	4.54
Sep-18	11.30	3.09	2.36	0.18	0.14	15.63			0.00	4.34
Oct-18	9.14	2.45	1.87	0.00	0.00	11.68			0.00	2.55
Nov-18	6.50	0.00	0.00	0.00	0.00	0.00		7.8	6.51	0.02
Dec-18	4.12	0.00	0.00	0.00	0.00	0.00		5.0	4.18	0.06
Jan-19	2.77	0.00	0.00	0.00	0.00	0.00		3.4	2.84	0.06
Feb-19	3.49	0.00	0.00	0.00	0.00	0.00		4.2	3.51	0.01
Mar-19	4.84	0.00	0.00	0.00	0.00	0.00		5.8	4.84	0.00
Year 1 Total	93.46	20.31	15.50	1.19	0.95	102.80	0.0	26.2	21.88	31.21
Apr-19	6.48	1.69	1.29	0.03	0.02	8.21			0.00	1.73
May-19	8.61	3.38	2.58	0.00	0.00	16.12			0.00	7.51
Jun-19	11.05	3.29	2.51	0.06	0.05	15.99			0.00	4.93
Jul-19	13.34	3.33	2.54	0.31	0.25	17.43			0.00	4.09
Aug-19	13.63	3.08	2.35	0.61	0.49	17.73			0.00	4.10
Sep-19	11.73	3.09	2.36	0.18	0.14	15.63			0.00	3.90
Oct-19	9.55	2.45	1.87	0.00	0.00	11.68			0.00	2.13
Nov-19	6.87	0.00	0.00	0.00	0.00	0.00		8.3	6.93	0.06
Dec-19	4.47	0.00	0.00	0.00	0.00	0.00		5.4	4.51	0.04
Jan-20	3.09	0.00	0.00	0.00	0.00	0.00		3.7	3.09	0.00
Feb-20	3.87	0.00	0.00	0.00	0.00	0.00		4.7	3.92	0.05
Mar-20	5.11	0.00	0.00	0.00	0.00	0.00		6.2	5.18	0.07
Year 2 Total	97.81	20.31	15.50	1.19	0.95	102.80	0.0	28.3	23.63	28.62

Notes:

- (A) Augmentation requirement equal to lagged depletions from Table 3 plus return flow obligations from Table 4
 (B) GIC projected deliveries for Year One of Projection - Decree Case No. 03CW348
 (C) Estimated GIC direct flow consumptive use credit per share. Calculated by removing surface return flow obligations from deliveries
 (D) Fossil Creek [rp]ected deliveries for Year One of Projection, Decree Case No. 03CW348
 (E) Estimated Fossil Creek consumptive use credit per share. Calculated by removing surface return flow obligations from deliveries
 (F) Total GIC credit for all shares = [(C) + (E)] * (Number of GIC Shares in SWSP)
 (G) Bucklen Pit SWSP excess credit lease during period April through October. Due to location, no transit loss assessed
 (H) Aurora lease during the period November through March. Due to location, transit losses are assessed
 (I) Aurora Lease Credit = (H) * (1 - PRPA Lease Transit Loss)
 (J) Net Affect to River = (F) + (G) + (I) - (A)

**Agreement
For Delivery of Reusable Raw Water**

This Agreement ("Agreement") is entered into on this 23rd day of March, 2018 ("Effective Date"), by and between the City of Aurora, Colorado, a Colorado municipal corporation of the counties of Adams, Arapahoe and Douglas, acting by and through its Utility Enterprise ("Aurora"), whose address is 15151 East Alameda Parkway, Suite 3600, Aurora, Colorado 80012, and R.M. Hiner Construction Company, Inc., whose address is 2220 "O" Street, Greeley, Colorado 80631 ("R.M. Hiner"). Aurora and R.M. Hiner are each referred to herein as a "Party" and together as the "Parties."

WITNESSETH

WHEREAS, Aurora has the right to use, sell, or provide for use of certain of its fully reusable municipal water return flows to the South Platte River ("Reusable Raw Water"); and

WHEREAS, such Reusable Raw Water is derived from trans-mountain or other reusable sources; and

WHEREAS, R.M. Hiner has a use for a certain portion of this Reusable Raw Water; and

WHEREAS, Aurora and R.M. Hiner desire to enter into this Agreement whereby Aurora shall deliver a portion of such Reusable Raw Water to R.M. Hiner; and

WHEREAS, this Agreement will be of mutual benefit and convenience to Aurora and R.M. Hiner; and

WHEREAS, the Aurora Utility Enterprise staff has determined, as a precondition to entering this Agreement, that Aurora is able to fulfill all exchange and operational obligations that require Reusable Raw Water, that it is able to fulfill all existing long-term agreements that require Reusable Raw Water (including this Agreement), and that all other needs of Aurora that may be fulfilled by these sources are met; and

NOW, THEREFORE, for and in consideration of the mutual promises and covenants contained herein, and other good and valuable consideration, the adequacy and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

Agreement

1. **Term.** The Term of this Agreement shall commence on the Effective Date, and continue until the last date for delivery of water as provided for on the water delivery schedule attached hereto as Exhibit A ("Delivery Schedule") such date being March 31, 2019, unless extended for additional one-year periods ("Term"). Aurora will commence supplying Reusable Raw Water on November 1, 2018 and cease supplying the Reusable Raw Water on March 31, 2019. Aurora may agree to extend this Agreement, in its sole discretion, for additional one-year periods at R.M. Hiner's request. Aurora will confirm the extension of this Agreement, including applicable rates, by written notification to R.M. Hiner.

2. **Delivery Schedule.** Delivery of the Reusable Raw Water will be made in accordance with the Delivery Schedule. In no event shall the total amount of Reusable Raw Water delivered exceed the maximum amount set forth in the Delivery Schedule, unless the Delivery Schedule is amended pursuant to Paragraph 16, below. As long as Aurora is capable of delivering the Reusable Raw Water to the Delivery Points (defined in Paragraph 3, below) according to the Delivery Schedule, R.M. Hiner will be obligated to pay the per-acre foot charge set forth in Paragraph 8, below, regardless of whether or not R.M. Hiner requests or uses the Reusable Raw Water.

3. **Delivery Location.**

(a) **Delivery Points.** R.M. Hiner agrees that Aurora shall initially make its delivery of the Reusable Raw Water at the outfall of the Metro Wastewater Reclamation District's Robert W. Hite treatment facility ("Hite"). R.M. Hiner further agrees that Aurora may, in its sole discretion, satisfy its delivery obligations under this Agreement by delivering the Reusable Raw Water at any other delivery point or delivery points on the South Platte River (each of Hite and such other delivery points, hereinafter, a "Delivery Point", and collectively the "Delivery Points"), provided that such alternative Delivery Points are located within a reach of the South Platte River beginning at or below Hite, and continuing downstream to a point at or above the location on the South Platte River that is approximately 80 miles downstream of Hite at the confluence of the Cache la Poudre River and the South Platte River (such location is "Point of Use"). R.M. Hiner acknowledges and agrees that the alternate Delivery Points may include, but are not limited to, other wastewater treatment plants that may be constructed in the future that discharge Reusable Raw Water owned by Aurora, the Brighton Ditch Augmentation Stations, the outfall of Walker Reservoir, and the confluence of Sand Creek and the South Platte River. Aurora will bear the responsibility for delivery of the Reusable Raw Water to these Delivery Points, and in its sole discretion may determine which of the Delivery Points it will use at any given time. Once Aurora has completed its delivery of the Reusable Raw Water hereunder, R.M. Hiner shall assume sole liability for any loss, damage, or injury that may occur to persons or property as the direct or indirect result of the control and/or use of said Reusable Raw Water by R.M. Hiner. The amount of Reusable Raw Water reflected in the Delivery Schedule was calculated by R.M. Hiner to include any transportation losses, or "shrinkage," from Hite to the Point of Use downstream. R.M. Hiner also acknowledges the travel time between the alternate Delivery Points and the Point of Use varies, but that the timing for Aurora's delivery obligations as provided for under the Delivery Schedule shall remain the same regardless of Aurora's use of alternative Delivery Points.

(b) **Credit for Avoided Transit Loss.** Aurora's obligations with respect to the volume of Reusable Raw Water to be delivered under this Agreement are deemed to be satisfied if Aurora makes deliveries in such amounts as if delivered at Hite. Thus, if Aurora elects, in its sole discretion, to make its delivery of any Reusable Raw Water under this Agreement at a Delivery Point other than Hite, and if delivery at such alternative Delivery Point(s) results in reduced transit loss, Aurora shall be entitled to retain such avoided transit loss with no credit to R.M. Hiner in water, money or otherwise. Aurora shall maintain and provide to R.M. Hiner a monthly accounting and report of daily deliveries at the Delivery Point(s). If Aurora elects to deliver some or all of the Reusable Raw Water at alternative Delivery Point(s), then the foregoing reports shall include the calculated amount of avoided transit loss, and the amount of water physically delivered at such alternative Delivery Point(s). For purposes of calculating any such avoided transit loss, the Parties hereby agree that the volume of Reusable Raw Water required to be delivered by Aurora in accordance with the Delivery Schedule shall be discounted by an amount equal to one-half of one percent (0.5%) of such volume during the April through September irrigation season, or one-fourth of one percent (0.25%) of such volume during the October through March non-irrigation season, for each river mile in distance between Hite and such alternative Delivery Point(s) (such distance calculated to the nearest one-tenth of a mile), or by such other amount as determined by the Division Engineer for Water Division 1 (such office or its replacement the "Division Engineer") or as specified in an applicable statute or decree from a court of applicable jurisdiction. The product of this calculation shall represent the amount of avoided transit loss in acre-feet, which Aurora shall be entitled to retain.

4. **Source and Quality of Reusable Raw Water.** The Reusable Raw Water to be provided by Aurora under this Agreement shall, at Aurora's discretion, consist of Aurora's reusable municipal return flows to the South Platte River, any fully consumable portion of changed irrigation water rights owned by, or available to Aurora, fully consumable water diverted pursuant to decrees entered in 03CW414, 03CW415, and 06CW104, Water Division 1, and any other legal source of Reusable Raw Water available to Aurora. Under no circumstances shall this Agreement be interpreted to mean that Aurora must supply potable water should the sources set forth in this paragraph be unavailable. Aurora does not warrant or guaranty any water quality standards with respect to the Reusable Raw Water to be delivered as provided for under this Agreement, and R.M. Hiner hereby waives any such warranty or guaranty.

5. **Use of Reusable Raw Water.** R.M. Hiner shall have the right to use and reuse to extinction the Reusable Raw Water delivered under this Agreement for water supply purposes, including without limitation replacement and exchange purposes in connection with any substitute water supply plan approved by the Colorado State Engineer's Office, augmentation and exchange purposes in accordance with any augmentation plan or appropriative right of exchange decreed by the Colorado Water Court, and any other lawful exchanges; provided that such use is consistent with the terms of this Agreement and all applicable laws, rules and regulations

6. **Water Rights Accounting.** R.M. Hiner will be solely responsible for any and all reporting and accounting required by the Colorado State Engineer, the Division Engineer for Water Division 1, the Water Commissioner for Water Commissioner District 2, or any other lawful authority after Aurora makes its delivery of the Reusable Raw Water as provided for under this Agreement. This responsibility includes, but is not limited to, R.M. Hiner's withdrawal of the Reusable Raw Water

from the South Platte River (if any) and R.M. Hiner's use of the Reusable Raw Water. In addition to the reporting requirements set forth in Paragraph 3(b) above, Aurora will provide any and all reporting and accounting required by the Colorado State Engineer, the Division 1 Engineer, or any other lawful authority concerning proof of the reusability of the Reusable Raw Water, and conveyance of the Reusable Raw Water to the Delivery Point(s).

7. **Subordination Clause.** This Agreement shall be made expressly subordinate to any present or future use of Reusable Raw Water by Aurora for the purposes of augmentation, exchange, or any other use which is or will be of greater direct benefit to Aurora and the users of its water delivery system, as well as to the water supply obligations which Aurora has incurred or will incur through any of the following: (a) its obligations pursuant to Water Division 1, Case Nos. 95CW226 and 227, Case No. 99CW158, Case No. 01CW284 and Case No. 02CW341; (b) the November, 30, 2007, Water Supply Agreement with the Rocky Mountain Energy Center, LLC; (c) the May 20, 2003, Water Rights Purchase and Sale Agreement with the City of Thornton, Colorado; (d) the May 19, 2006, Reusable Water Lease Agreement with the Central Colorado Water Conservancy District; (e) the June 30, 2015, Intergovernmental Agreement ("IGA") for Delivery of Reclaimed Wastewater with E-470 Public Highway Authority; (f) the August 16, 2015, Agreement with Asphalt Specialties Company for Lease of Firm Delivery of Reclaimed Wastewater; (g) the September 17, 2015, Agreement for Lease of Firm Delivery of Reclaimed Groundwater with Bucklen Equipment Company; (h) the December 8, 2015, IGA with Adams County for Delivery of Reclaimed Wastewater, (i) the June 29, 2016 Agreement with Asphalt Specialties Company for Delivery of Reusable Raw Water, (j) the April 4, 2016 Agreement with R.M. Hiner Construction Co for Delivery of Reusable Raw Water, (k) the April 30, 2016 Agreement with Ready Mixed Concrete Company for Delivery of Reusable Raw Water, (l) the October 11, 2016 IGA with Todd Creek Village Metropolitan District for Delivery of Reusable Raw Water, (m) the September 14, 2016 IGA with West Greeley Conservation District for Delivery of Reusable Raw Water, (n) the March 7, 2017 Agreement for Delivery of Reusable Raw Water with Brannan Sand and Gravel Company, LLC, and (o) any and all obligations resulting from any firm delivery annual lease or delivery contract of Reusable Raw Water executed prior to the date of this Agreement. The foregoing subordination does not, in and of itself, create an excuse for Aurora's failure to deliver the Reusable Raw Water under this Agreement. However, the Parties agree that the purpose and obligations under this Agreement and Aurora's other obligations with respect to its Reusable Raw Water in the event of a *force majeure* event may cause delay or interruption in Aurora's delivery of the Reusable Raw Water.

8. **Consideration.** R.M. Hiner agrees to pay to Aurora the amount of [REDACTED] per acre-foot ("Unit Rate") for all Reusable Raw Water delivered under this Agreement. The Unit Rate shall remain constant throughout the Term, unless applicable Unit Rates change as a condition for extension of the Term for an additional year, pursuant to Paragraph 1, above.

9. **Payment.** Aurora shall bill for all Reusable Raw Water it will deliver to R.M. Hiner for the 2018-2019 Term under the Delivery Schedule within thirty (30) business days of the Effective Date. If the Term is extended for additional years, effective upon Aurora's written notice that it agrees to the extension, Aurora shall bill for all Reusable Raw Water to be delivered under the Delivery Schedule for that additional year. All billing shall be done on such forms as designated by Aurora for that purpose. Payment by R.M. Hiner shall be due no later than forty-five (45) days

after such bill has been issued. If R.M. Hiner does not make the required payment by the due date, Aurora may give R.M. Hiner a notice of default. If R.M. Hiner does not cure the default by making full payment within thirty (30) days of receipt of any notice of default, then Aurora, in addition to pursuing any other remedies available to it, may declare this Agreement terminated. Any delay in Aurora's invoicing for payments under this Agreement shall not constitute a breach of Aurora's obligations and shall not relieve R.M. Hiner of its obligations to pay all consideration due hereunder.

10. **Non-Assignability and No Subleases.** Neither Party may assign its rights or delegate its duties hereunder without the prior written consent of the other Party. R.M. Hiner may not sublease or give others the right to use the Reusable Raw Water to which it is entitled pursuant to this Agreement without the written permission of Aurora, which permission Aurora may grant or withhold at its discretion.

11. **Successors and Assigns.** This Agreement and the rights and obligations created hereby shall be binding upon and inure to the benefit of the Parties, respective successors and assigns, if any are allowed. The Parties intend that Aurora shall not incur any liability other than those liabilities directly running directly to Aurora or its assigns permitted under this Agreement, if any. R.M. Hiner therefore covenants and agrees, to the extent permitted by law, to indemnify, save and hold harmless Aurora from all liability, cost or expense of any kind, including Aurora's costs of defense to any other party arising in connection with or relating in any way to the execution, delivery or performance of any allowed assignment or any related document by the parties thereto or to the consummation of any transaction in connection with such documents.

12. **No Rights Conferred.** Except as otherwise provided in this Agreement, the Parties acknowledge that all Reusable Raw Water provided hereunder is intended for the present and future use of Aurora. It is further understood and agreed to by the Parties that this Agreement shall confer no rights in such Reusable Raw Water upon R.M. Hiner, nor shall any future needs of R.M. Hiner for water enable R.M. Hiner to make claim against Aurora for any of Aurora's Reusable Raw Water, other water or water rights. R.M. Hiner further acknowledges the statutory prohibition against vesting of a right for a continued lease expressed in CRS § 31-35-201 applies in these circumstances.

13. **No Opposition to Aurora Water Court Matters.** From the date of execution of this Agreement and for the Term, R.M. Hiner agrees that neither it nor any of its successors, if any are allowed, will oppose Aurora in any Colorado Water Court applications filed by Aurora except to assert injury to a vested or conditional water right.

14. **Aurora Right to Request Reuse.** The Parties hereto acknowledge that hydrologic and other conditions may exist wherein R.M. Hiner may not need all or a portion of the Reusable Raw Water flow available to it under this Agreement. Aurora may contact R.M. Hiner, not more frequently than once per day, to determine if any of the Reusable Raw Water to be provided hereunder will not be needed.

15. **Entire Agreement of the Parties.** This Agreement represents the entire agreement of the Parties, and neither Party has relied upon any fact or representation not expressly set forth herein.

All prior and contemporaneous conversations, negotiations, possible alleged agreements, representations, covenants and warranties concerning the subject matter hereof, are merged in this Agreement.

16. **Amendment.** R.M. Hiner may submit to Aurora a proposed modified Delivery Schedule setting forth revised monthly and total delivery amounts. Any proposed modified Delivery Schedule shall be effective only upon Aurora's written consent, upon which such modified Delivery Schedule will replace the existing Delivery Schedule attached hereto as Exhibit A. Further, the Parties may agree to extend the Term for additional one-year periods effective upon both R.M. Hiner's written request and Aurora's written response agreeing to the extension. Otherwise, this Agreement may be amended, modified, changed, or terminated in whole or in part only by written agreement duly authorized and executed by the Parties hereto.

17. **Enforcement.** The Parties agree that this Agreement may be enforced in law or in equity for specific performance, injunctive, or other appropriate relief, including damages, as may be available according to the laws of the State of Colorado. It is specifically understood that, by executing this Agreement, each Party commits itself to perform pursuant to the terms hereof, and that any breach hereof resulting in any recoverable damages shall not thereby cause the termination of any obligations created by this Agreement unless such termination is requested by the Party not in breach hereof.

18. **Failure to Perform Due to Force Majeure.** Subject to the terms and conditions in this Paragraph, no Party to this Agreement shall be liable for any delay or failure to perform under this Agreement due solely to conditions or events of *force majeure*, as that term is specifically defined herein; provided that: (a) the non-performing Party gives the other Party prompt written notice describing the particulars of the occurrence of the *force majeure*; (b) the suspension of performance is of no greater scope and of no longer duration than is required by the *force majeure* event or condition; and (c) the non-performing Party proceeds with reasonable diligence to remedy its inability to perform and provides weekly progress reports to the other Party describing the actions taken to remedy the consequences of the *force majeure* event or condition. As used herein *force majeure* shall mean any delay or failure of a Party to perform its obligations under this Agreement caused by events beyond the Party's reasonable control, and without the fault or negligence of the Party, including, without limitation A) changes in state or federal law or administrative practice concerning, water rights administration, water quality or stream flow requirements, B) changes in state water rights administrative practice concerning the reuse of reusable raw water through leases or other agreements to others for use at locations other than Aurora, Colorado, including, but not limited to, challenges to retained dominion and control, C) acts of God, D) sudden actions of the elements such as floods, earthquakes, hurricanes, or tornadoes, E) sabotage, F) vandalism beyond that which can be reasonably prevented by the Party, G) terrorism, H) war, I) riots, J) fire, K) explosion, L) severe cold or hot weather, M) snow, N) drought [a condition more severe than that which occurred in 2002 in the South Platte River Basin or any basin from which the Reusable Raw Water originates] O) other extreme weather conditions, P) blockades, Q) insurrection, R) strike, slow down or labor disruptions (even if such difficulties could be resolved by conceding to the demands of a labor group); S) actions by federal, state, municipal, or any other government or agency (including but not limited to, the adoption or change in any rule or regulation or environmental constraint imposed by federal, state or local government bodies) but only if such

requirements, actions, or failures to act prevent or delay performance, T) inability, despite due diligence, to obtain required licenses, permits or approvals, and, U) changes of law relating to financial obligations, revenues and budgetary matters concerning Colorado local governments and their enterprises. In the event a *force majeure* event or condition prevents Aurora from delivering all or part of the agreed upon amounts of Reusable Raw Water to R.M. Hiner, Aurora shall refund all advance payments made for that water not delivered within sixty (60) days of the conclusion of the *force majeure* event or the cancellation of the Agreement pursuant to the remaining provisions of this Paragraph. In no event will any delay or failure of performance caused by any conditions or events of *force majeure* extend this Agreement beyond its stated term. In the event any delay or failure of performance on the part of the Party claiming *force majeure* continues for an uninterrupted period of more than one hundred twenty (120) days from its occurrence or inception as noticed pursuant to this Paragraph, the Party not claiming *force majeure* may, at any time following the end of such one hundred twenty (120) day period, may terminate this Agreement upon written notice to the Party claiming *force majeure*, without further obligation except as to costs and balances incurred prior to the effective date of such termination.

19. **Sole Obligation of Utility Enterprise.**

(a) This Agreement shall never constitute a general obligation or other indebtedness of the City of Aurora ("City"), or a multiple fiscal year direct or indirect debt or other financial obligation whatsoever of the City within the meaning of the Constitution and laws of the State of Colorado or of the Charter and ordinances of the City.

(b) In the event of a default by Aurora's Utility Enterprise of any of its obligations under this Agreement, R.M. Hiner shall have no recourse for any amounts owed to it against any funds or revenues of the City except for those revenues derived from rates, fees or charges for the services furnished by, or the direct or indirect use of, the Water System and deposited in the Water Enterprise Fund, as the terms "Water System" and "Water Enterprise Fund" as defined in Aurora's City Ordinance No. 2003-18, and then only after the payment of all operation and maintenance expenses of the Water System and all debt service and reserve requirements of any bonds, notes, or other financial obligations of the Utility Enterprise secured by a pledge of the net revenues of the Water Enterprise Fund. Notwithstanding any language herein to the contrary, nothing in this Agreement shall be construed as creating a lien upon any revenues of the Utility Enterprise or the City.

20. **Miscellaneous.**

(a) **Intent of Agreement.** This Agreement is intended to describe the rights and responsibilities of and between the named Parties, and is not intended to, and shall not be deemed to confer rights upon any persons or entities not named as Parties, nor to limit in any way the powers and responsibilities of Aurora, R.M. Hiner, or any other entity not a party hereto.

(b) **Effect of Invalidity.** If any portion of this Agreement is held invalid or unenforceable for any reason by a court of competent jurisdiction as to either Party or as to both Parties, the entire Agreement will terminate.

(c) **Waiver of Breach.** Waiver of breach of any of the provisions of this Agreement by either Party shall not constitute a continuing waiver of any subsequent breach by said Party of either the same or any other provision of this Agreement.

(d) **Multiple Originals.** This Agreement may be simultaneously executed in any number of counterparts, each one of which shall be deemed an original, but all of which constitute one and the same Agreement.

(e) **Headings for Convenience.** Headings and titles contained herein are intended for the convenience and reference of the Parties only, and are not intended to confine, limit, or describe the scope of intent of any provision of this Agreement.

(f) **Recordation.** Following the execution of this Agreement, the Parties may cause this Agreement to be recorded with the Clerk and Recorder's Office of such county or counties in Colorado as they may desire.

(g) **Notice.**

(1) All notices, requests, demands, or other communications ("Notice", and collectively, "Notices") hereunder shall be in writing and given by (i) established express delivery service which maintains delivery records requiring a signed receipt, (ii) hand delivery, or (iii) certified or registered mail, postage prepaid, return receipt requested to the Parties at the following address, or at such other address as the Parties may designate by Notice in the above manner.

To Aurora: City of Aurora
15151 East Alameda Parkway, Suite 3600
Aurora, CO 80012-1555
Attn: Director, Aurora Water

with copy to City of Aurora
15151 East Alameda Parkway, Suite 5300
Aurora, CO 80012-1555
Attn: City Attorney

To R.M. Hiner: R.M. Hiner Construction Co, Inc.
2220 "O" Street
Greeley, Colorado 80631
Attn: Rex Hiner

Notices shall be effective (iv) the next day following the date sent by an established express delivery service which maintains delivery records requiring a signed receipt, (v) upon receipt by the addressee of a hand delivery, or (vi) three (3) days following the date of mailing via certified or registered mail, postage prepaid, return receipt requested.

(2) Notwithstanding the foregoing, the Parties may communicate with respect to extension to the Term pursuant to Paragraph 1 and adjustments of the Delivery Schedule pursuant to Paragraph 2 by e-mail as follows: (i) to Aurora to John Murphy at jmurphy@auroragov.org; and (ii) to R.M. Hiner at such e-mail address as may be designated by Notice in the manner provided for under this Paragraph 20.g.

(h) **Non-Business Days.** If any date for any action under this Agreement falls on a Saturday, Sunday or a day that is a "holiday" as such term is defined in Rule 6 of the Colorado Rules of Civil Procedure, then the relevant date shall be extended automatically until the next business day.

(i) **Commissions and Fees.** Each Party shall be solely responsible for the payment of any and all real estate commissions or other commissions or fees that it incurs with respect to this Agreement.

(j) **Governing Law and Venue.** This Agreement and its application shall be construed in accordance with the law of the State of Colorado. Should it be necessary to initiate court proceedings concerning this Agreement, the Parties agree that venue shall be in the District Court for Arapahoe County, Colorado.

(k) **No Attorneys' Fees.** In the event of any litigation, mediation, arbitration or other dispute resolution process arising out of or related to this Agreement each Party agrees to be responsible for its own attorneys' and other professional fees, costs and expenses associated with any such proceedings.

(l) **No Construction Against Drafter.** This Agreement was drafted by Aurora with review and comment from the attorney for R.M. Hiner. Accordingly, the Parties agree the legal doctrine of construction against the drafter will not be applied should any dispute arise concerning this Agreement.

IN WITNESS WHEREOF, the Parties hereto have duly executed this Agreement as of the Effective Date.

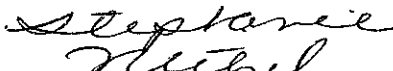
(signatures on following pages)

CITY OF AURORA, COLORADO,
ACTING BY AND THROUGH ITS
UTILITY ENTERPRISE (AURORA)


Marshall P. Brown, Director

3/29/18
Date

APPROVED AS TO FORM FOR AURORA:



Stephanie Neitzel, Assistant City Attorney

3/27/18
Date

18001157
ACS #

STATE OF COLORADO)
) ss
COUNTY OF ARAPAHOE)

The foregoing instrument was acknowledged before me this 29 day of March, 2018,
by Marshall P. Brown, Director, acting on behalf of the Utility Enterprise of the City of Aurora,
Colorado.

Witness my hand and official seal. 
Notary Public

My commission expires: 12-12-2020

(SEAL)

LINDA WHITED
Notary Public
State of Colorado
Notary ID # 20064021648
My Commission Expires 12-12-2020

LINDA WHITED
Notary Public
State of Colorado
Notary ID # 20064021648
My Commission Expires 12-12-2020

R.M. HINER CONSTRUCTION COMPANY, INC (R.M. HINER)

By: Sharon A Hiner March 23-2018
Date
Title: Secretary/Treasurer/and
CO/Owner

STATE OF COLORADO)
COUNTY OF Weld) ss.

The foregoing Agreement was acknowledged before me this 23rd day of March, 2018, by Sharon A Hiner, Secretary/Treasurer/CO by NA, of R.M. Hiner Construction Company, Inc.

Witness my hand and official seal.

[Signature]
Notary Public

My commission expires: April 17, 2019

SEAL

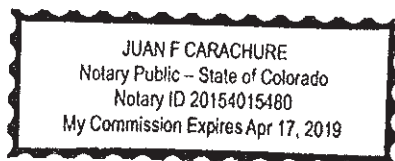


Exhibit A
Agreement for Delivery of Reusable Raw Water

Delivery Schedule
Acre-feet

Month	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Total
Volume	7.8	5.0	3.4	4.2	5.8	26.2

DIVISION OF RECLAMATION, MINING AND SAFETY

Department of Natural Resources

1313 Sherman St., Room 215
Denver, Colorado 80203
Phone: (303) 866-3567
FAX: (303) 832-8106



Bill Ritter, Jr.
Governor

James B. Martin
Executive Director

Loretta E. Piñeda
Director

April 30, 2010

R M Hiner Construction Co., Inc.
11 Austin Rd
Lamar, CO 810524301

RE: Mining Operations with Exposed Ground water

To Whom It May Concern:

The Division of Reclamation Mining and Safety is responsible for ensuring that Sand and Gravel mining operators comply with the requirements of the Colorado Land Reclamation Act for the Extraction of Construction Materials (Act) and the Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Materials (Rules). Among these requirements are provisions for the protection of water resources. The Act requires that reclamation plans must ensure minimization of disturbances to the prevailing hydrologic balance, including disturbances to the quantity of water in the area affected by mining and in the surrounding areas. § 34-32.5-116(4)(h). Rule 3.1.6(1)(a) requires compliance with Colorado water laws and regulations governing injury to existing water rights both during and after mining. Permits must specify how the permittee will comply with applicable Colorado water laws and regulations governing injury to existing water right rights. Rule 6.3.3(j); Rule 6.4.5(2)(c). After an extensive review, the Division determined that several operators may not have appropriate permit conditions to address certain reclamation liabilities arising from impacts to water resources.

In September 2009 the Division of Water Resources (DWR) updated its Guidelines for Sand and Gravel Pits. These guidelines provide guidance on achieving compliance with state law regarding replacement of depletions from sand and gravel mining, thus the guidelines provide a benchmark for the protection of hydrologic balance required under the Act and Rules. As noted in the Guidelines, sand and gravel operations which expose groundwater without complying with state law create a reclamation liability by impacting available groundwater.

State law requires that any person exposing ground water must obtain a well permit from the SEO pursuant to § 37-90-137(11). Because exposed groundwater results in out-of-priority water depletions, operations which expose ground water must also eventually obtain a water-court approved augmentation plan. Currently, several operators do not have either an augmentation plan or bonding to provide an alternative method to mitigate injurious stream depletions that result from mining-related exposure of ground water. The Division has a statutory duty to ensure that lands affected by mining are reclaimed in a manner that complies with state law and to ensure that operators have sufficient bonding to achieve reclamation. In order to assist operators in achieving compliance with these requirements, the Division proposes that, by April 30, 2011, operators should contact the Division and agree upon a plan for achieving compliance.

The Division has identified four approaches for operators:

1. File a financial warranty that will ensure backfilling of the pit to cover the exposed ground water to a depth of two feet above the static ground water level or,
2. Obtain a court approved augmentation plan prior to exposing ground water or,
3. File a financial warranty to cover the cost of installing a clay liner or slurry wall that meets the Division of Water Resources requirements for preventing ground water exposure or,
4. Obtain approval from the Division of Water Resources that acknowledges compliance with the SEO's requirements pursuant to § 37-90-137(11).

The Division will work with operators on an individual basis as they move to implement one of these plans. It is likely that options 1 and 3 will require the submittal of a technical revision or an amendment to the existing permit depending on the nature of the current mining and reclamation plan and the proposed changes. Increased financial warranties, as a result of these modifications, may be posted in a phased manner not to exceed three years. Amendments or revisions currently under review will be required to be approved by April 30, 2011 and may use the phased financial warranty approach described above. New applications going forward or presently under review by the Division will be required to meet the requirements of one of the options 1-4 at the time of application approval. Failure of affected operators to initiate contact with the Division and gain compliance as described above could result in an enforcement action being issued by the Division.

If you have any questions, please contact Tony Waldron at 303-866-3567, extension 8150.

cc: M1977151 Greeley Pit

I, Rex M. Hiner, as the owner of three shares of the Greeley Irrigation Company evidenced by Certificate Nos. 2835, 3044, 3352, 3358, 3364, and 3365, hereby affirm that said shares will be dedicated solely to the Greeley Pit Substitute Water Supply Plan for as long as there are depletions at this gravel pit, until such time as another replacement source is obtained, or until the associated depletions are reduced requiring less water to be dedicated. The three shares will not be sold, leased, or traded to others during the term of this dedication. This dedication supersedes the previous dedication dated March 17, 2011.

Signature: Rex M. Hines

Date: February 12, 2013

COUNTY OF Weld)

The foregoing instrument was acknowledged before me this 12th day of February, 2013, by Sharon A. Hiner _____ and _____
Sharon A. Hiner, Notary

My commission expires: May 9, 2016

Witness my hand and official seal.

Steven A. Harris

Notary Public

ADMINISTRATION PROTOCOL
Use Of Replacement Sources Not Specifically Identified
In An SWSP Or Augmentation Plan
Division One – South Platte River

This protocol addresses the minimum standards required for use of a source of replacement water not specifically described in an SWSP or augmentation plan.

- Request to the Division Engineer and Water Commissioner must be in writing and must include:
 - the augmentation plan or SWSP provision in the purchasers plan that allows an unnamed source to be added to the plan for credit
 - the decree provision or SWSP provision in the sellers plan that allows water to be sold for use in the purchasers plan
 - the annual and monthly amount of water available from the water right to be used for replacement
 - the location at which the water will be delivered to the stream
 - a lease agreement between the seller and purchaser of the replacement water
- Applicant shall have written approval from the Division Engineer or Water Commissioner before an unnamed source is added to an augmentation plan or SWSP.
- Applicant must comply with the Augmentation Plan Accounting Protocol and, if appropriate, the Delivery of Water Protocol.

This protocol is subordinate to any decreed language addressing specific situations.

ADMINISTRATION PROTOCOL

Augmentation Plan Accounting

Division One – South Platte River

This protocol establishes the accounting and reporting process required to enable the division engineer's office to confirm that depletions from all out-of-priority diversions are being replaced so as to prevent injury to vested water rights. The accounting must comport with established "cradle to grave" accounting standards, which allow an audit of the information to track exactly how the data is manipulated as it is translated from raw input data to the resultant impact on the river. While this protocol is subordinate to any decreed language addressing specific accounting requirements, it generally addresses the minimum requirements of such accounting.

The accounting must use the standard convention where a depletion is "negative" and an accretion or other replacement source is "positive". The sum of the impacts will then result in either a "negative" or "positive" impact on the stream.

Wells in plans that have a negative stream impact must provide additional replacement water, curtail pumping or both until the impact is no longer negative. Plans with a negative stream impact that fail to curtail pumping will be ordered to stop pumping until such time as the projected impact of the wells is no longer negative.

1. Accounting must be submitted electronically to the water commissioner ([call 970-352-8712 to obtain email address](tel:970-352-8712)) and division engineer at Div1Accounting@state.co.us within 30 days of the end of the month for which the accounting is being submitted.
2. The accounting must provide the **contact information** including name and address for:
 - a. the owner(s) of each well
 - b. the person responsible for submitting the accounting
 - c. the plan administrator and/or the plan attorney.
3. All **input data** must be in one location, such as an "Input" worksheet, etc. The accounting must show all pumping. Input data includes the information listed below.
 - a. The required input data for each **well** is:
 - i. the monthly meter reading for wells that use a **presumptive depletion factor** (PDF) to determine the associated consumptive use (CU); or
 - ii. the monthly CU in acre-feet (AF) for wells that have a decree or approved SWSP that allows the wells to use a **water balance methodology** to determine the CU of the well. The analysis used to determine the CU must be included with the accounting.
 - iii. Wells that are decreed as an **alternate point of diversion** (APOD) to a surface water right must report pumping on a daily basis if any of the diversion during the month is claimed as being "in priority". (See *Administration Protocol – APOD Wells* for more details.)

- iv. The well meter serial readings for each meter shall be included if there is more than one meter on a well.
- b. Each **recharge site** must comply with the *Administration Protocol - Recharge* and must report the:
 - i. daily volume in AF diverted into the site;
 - ii. monthly volume in AF released from the site;
 - iii. monthly net evaporative loss in AF;
 - iv. volume of water in AF remaining at the end of the month.
- c. The accounting must identify each source of **fully consumable replacement water** actually delivered to the location impacted by the depletions. To demonstrate the water was actually delivered to the required location will require the following information:
 - i. the originating source of the water, date released and volume of water released;
 - ii. transportation losses to point of diversion or use, if any, using stream loss factors approved by the water commissioner;
 - iii. the volume of water actually delivered on a daily basis past any surface water diversion that was sweeping the river as corroborated by the water commissioner.

(See *Administration Protocol – Delivery of Water* for more details on delivering water.)
- d. For each source of **replacement water that has been “changed”** for use as a source of augmentation, such as changed reservoir shares, ditch bypass credits or credits from dry-up, etc., the following input information must be reported:
 - i. the basis and volume of the return flow obligation;
 - ii. the location the changed water was historically used; this will be the location used to determine the timing of the return flow impact on the river.
- 4. The accounting must include a monthly **projection** of the plan’s operation at least through March 31 of the next calendar year.
- 5. The accounting must include all input and output files associated with **modeling the delayed impact** of diversions. The output from the modeling must report to a summary table that shows, by month, the ongoing depletions associated with pumping, return flow obligations, etc. and accretions from recharge operations.
- 6. A **net impact** summary must show the out-of-priority depletions, accretions from each recharge site, volume of replacement water actually delivered to the location of the depletions and the resultant net impact on **a daily basis**. If necessary, the net impact must be done by river reach.

While **modeling** may use a **monthly step function** to determine the depletions from pumping and accretions from recharge, the monthly result must then be **divided by the number of days in the month** in order to **simulate a daily impact**, as water rights are administered on a daily and not monthly basis.

Replacement water must be provided such that the **daily net impact** (using the simulated daily numbers from the modeling) **is not negative**. If a well is out-of-priority for 15 days during a month, replacement must be made only for the 15 days the well is out-of-priority. The replacement must be made, however, on a daily basis as opposed to, for instance, making an aggregated release equal to the volume of the out-of-priority depletions. Likewise, the simulated daily accretion will only count toward replacing the depletion on the days the well is out-of-priority. The accretions that report to the river when the well is in priority cannot be used to replace the out-of-priority depletions.

The **accretions that impact the river when the well is in priority** are not considered “excess” unless the cumulative net impact of the well is not negative for the entire irrigation year to date. (The irrigation year for this purpose is April 1 thru the following March 31.) Until such time as the cumulative net impact is not negative, the accretions must simply be released to the river and cannot be leased to other plans or recaptured. Plans that show a positive cumulative net impact are still required to make replacements on a daily basis; the cumulative analysis only effects whether or not accretions reporting to the river when the well is in priority are considered “excess” and are, therefore, able to be recaptured.

7. The basis for determining that the depletions are **out-of-priority** must be clearly established and all steps in the calculation included in the accounting. The analysis may be done, unless otherwise limited by decree, for each well or groups of wells, provided the most junior water right associated with the group of wells is used as the reference water right for the group’s out-of-priority status.
8. Accounting must include **actual information** for the irrigation year through the month for which the accounting is being submitted **AND projections** of the plan operation through March 31 of the next calendar year.
9. The following **naming convention** must be used for all files submitted pursuant to item 1:

“Plan**WDID**_YYMMDD”

where: PlanWDID is the WDID assigned by the division engineer’s office
YYMMDD corresponds to the date the accounting is submitted.

As an example, the assigned WDID for the former GASP plan was 0103333. If accounting using Excel® was submitted for that plan on May 15, 2004, the file name would be:

“0103333_040515.xls”

The name of the file must be in the subject line of the email.

10. All accounting must be reported using the **WDID** for the structure, at a minimum. Other information such as well name, permit number, etc. may also be included as desired. All wells must be decreed by the water court, permitted by the state engineer or included in a decreed plan for augmentation. Unregistered and undeclared wells cannot, in the opinion of the division engineer, be effectively administered because of the need to know the location, allowable diversion rate and use of the well - information that is only available from the decree or permitting process.

11. If a well is covered in multiple SWSP's or augmentation plans, the monthly meter readings must be the same in the accounting for each plan covering the subject well. The accounting for every plan covering the well shall state the proportionate pumping amount covered by each plan to assure all out-of-priority depletions are replaced.
12. The following additional accounting is required for sources of replacement water used for more than one plan. The water right owner of the replacement water is responsible for accounting for the total replacement amount and how much each plan is using of that total amount. The accounting for portions of the replacement water by other users must match the accounting of the water right owner. The amount of replacement water used by the water right owner and other users together shall not exceed the total replacement amount available.

(See *Administration Protocol – Use Of Unnamed Sources For Replacement* for additional requirements concerning required notice and approval of sources of replacement not specifically described in a SWSP or augmentation plan)