May 14, 2020

Peter Wayland
Weiland, Inc.
PO Box 18087
Boulder, CO 80308

Re: Amen Aggregate Resource Substitute Water Supply Plan (WDID 0402558, Plan ID 6167)
Amen Aggregate Resource, DRMS Permit No. M-2019-025 (WDID 0405781)
S½ Section 19, T5N, R67W, 6th P.M.
Water Division 1, Water District 4, Weld County

Approval Period: May 14, 2020 through October 31, 2020
or March 31, 2021 (subject to condition of approval #1)

Contact information for Mr. Wayland: 303-518-2182; pwayland@weilandinc.com

Dear Mr. Wayland:

We have reviewed your letter dated February 14, 2020, requesting approval of the above referenced substitute water supply plan ("SWSP") in accordance with section 37-90-137(11), C.R.S. to replace depletions associated with the Amen Aggregate Resource sand and gravel mining operation, operated by Coulson Excavating Co., Inc. ("Coulson" or "Applicant"). The required filing fee of $1,593.00 has been received (receipt no. 10000036).

SWSP Operation

The Amen Aggregate Resource is located just north of Johnstown, generally situated in the south half of Section 19, Township 5 North, Range 67 West of the 6th P.M., as shown on the attached Figure 1. Mining of the site is anticipated to begin in late spring/early summer 2020, with Coulson beginning dewatering operations to allow the site to be dry mined. Consumptive use at the Amen Aggregate Resource during this plan period will consist of evaporation from exposed groundwater surface area, water removed in the mined product, and water used for dust control purposes. Replacement water will be provided by the City of Loveland pursuant to a temporary lease agreement.

Depletions

Coulson has estimated that initially a total of 0.65 acres of groundwater will be exposed at the site, consisting of a 0.2-acre sump area, a 0.3-acre settling pond, and 0.015 acres of dewatering trenches, based on a width of 4 feet and a length of 1630 feet. The sump area and sediment pond are expected to remain constant, however as additional trenching is completed, the amount of exposed groundwater in the dewatering trenches will increase. The following table lists the

anticipated schedule of exposed groundwater surface area:

Table A - Exposed Groundwater Area Calculation

Period	Trench Length (ft.)	Trench Area (acres)	Total Area (acres)
April 2020 - June 2020	1630	0.15	0.65
July 2020 - September 2020	2559	0.23	0.88
October 2020 - December 2020	3762	0.35	1.23
January 2021 - March 2021	5533	0.51	1.74

The Applicant proposed to replace evaporation from exposed groundwater at the site based upon evaporation atlases in NOAA Technical Report NWS 33 and the SEO monthly distribution factors for sites below 6,500 feet. Gross annual evaporation at the gravel pit location is estimated to be 40.4 inches per year. Net evaporation is defined as gross evaporation less the consumptive use of water by vegetation that naturally occurred at the site prior to construction of the pit. The historical consumptive use was assumed to be equal to the effective precipitation, which was estimated based on the data from the Loveland NCWCD weather station (1989-2017). The net evaporation from the exposed water surface is estimated at 2.10 acre-feet for this SWSP period, as shown in Table AI.1 (attached).

Based on monthly average temperatures reported for the Loveland NCWCD weather station, ice cover may occur during 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 groundwater surface area that may occur during the 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 anticipates mining up to a total of 400,000 tons of aggregate during this plan period. The material will be mined below the groundwater table in a dewatered state. For the purposes of this SWSP you have assumed that all mined material will be washed; therefore the water retained in the mined product is considered to be 4.0% of the mined material by weight. This results in a groundwater loss of 11.77 acre-feet.

The Applicant anticipates using 6.73 acre-feet of water from the pit for dust control purposes per year. All water used for dust control purposes is assumed to be 100% consumed.

The total consumptive use of groundwater at the Amen Aggregate Resource during this plan period, including evaporative and operational losses, is estimated to be 20.6 acre-feet.

Consumptive uses from the Amen Aggregate Resource will result in lagged depletions to the stream system. The IDS Alluvial Water Accounting System (AWAS) analytical stream depletion model, which uses the Glover method, was used to calculate the lagged depletions to the Big

Thompson River. The following parameters were used in the model: transmissivity (T) = 40,000 gallons per day per foot, specific yield (SY) = 0.2, the aquifer width (W) = 2,180 feet, and the distance from the centroid of the exposed surface water areas to the river (X) = 395 feet. The total lagged depletions and estimated transit losses were determined to be 19.98 acre-feet for this plan period.

The attached Table AI.3 shows the monthly breakdown of evaporative, operational, and lagged depletions for the plan period.

Dewatering

Once dewatering of the site commences, it will be continuously dewatered throughout this SWSP period, with all such water discharged to the Big Thompson River. As long as the pit is continuously dewatered at approximately the same rate, and all water is discharged to the Big Thompson River without consumptive use, the water returned to the stream system from dewatering of the pit should be sufficient to offset the depletions attributable to dewatering operations. Totalizing flow meters must be installed at each discharge location and meter readings must be reported on the submitted accounting. The meter readings will be used in calculating the post-pumping depletions that must be replaced if dewatering rates are reduced or if dewatering ceases altogether at the site.

Replacements

The Applicant has obtained a lease for up to 400 acre-feet of fully consumable water from the City of Loveland ("Loveland") for direct delivery out of the Big Thompson River that will be used to make replacements during the period of May 14, 2020 through October 31, 2020. This water was intended to be used for the filling of the Flying W Reservoir; however the reservoir was able to fill under free river conditions and the leased water is no longer required for this purpose. It is anticipated that a new lease with the City of Loveland will be obtained for the period of November 1, 2020 through March 31, 2021. The lease must be for at least 5.53 acre-feet and able to be used during the non-irrigation season. **This SWSP will only be extended through March 31, 2021 if a copy of the executed lease is provided to this office on or before October 31, 2020.** Loveland will deliver the replacement water to the Big Thompson River at the outfall of Loveland's municipal wastewater treatment plant (WDID 0402300). The point of delivery is approximately 8.5 miles upstream of the Amen Aggregate Resource, therefore a total transit loss of 2.125 percent (0.25% per mile) will be assessed. During the irrigation season, it is possible for a call to be placed at the Hillsborough Ditch, 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 point of depletion. **At the beginning of each month, the Applicant must inform the water commissioner of the upcoming monthly volume of water required to be bypassed to replace depletions.** Any releases by Loveland at a location other than its municipal wastewater treatment plant must be coordinated with the water commissioner to insure the proper transit losses are applied and that no intervening water rights are injured.

Long Term Augmentation

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

Division of Reclamation, Mining and Safety ("DRMS") requires that you provide information to demonstrate you can replace long term injurious stream depletions that result from mining-related exposure of groundwater.

The final reclamation plan for the Amen Aggregate Resource is a combination of backfilling and creating lined reservoirs. The Applicant has chosen to take a phased approach to surety bonding of reclamation costs. The Applicant has posted a surety bond of $375,904.00 to cover the reclamation of Phase I activities, including backfilling of impacted areas and the construction of a compacted clay liner around Cell 2. Before any disturbances occur outside of Phase I, additional surety will be posted.

Conditions of Approval

I hereby approve this SWSP, in accordance with section 37-90-137(11), C.R.S., subject to the following conditions:

1. This SWSP shall be valid for the period of May 14 through October 31, 2020 (or March 31, 2021, if extended), unless otherwise revoked or superseded by decree. **This SWSP will only be extended for the period of November 1, 2020 through March 31, 2021 if a copy of the executed lease for replacement water described herein is provided to this office on or before October 31, 2020.** If groundwater depletions associated with this sand and gravel mining operation will extend beyond the expiration date of this SWSP, a renewal request must be submitted to this office with the statutory fee (currently $257) prior to the expiration date but no later than **September 1, 2020 (or February 1, 2021, if extended)**. If a renewal request is received after the expiration date of this plan, it may be considered a request for a new SWSP, in which case a $1,593 filing fee will apply.
2. Well permit no. 84303-F has been obtained for the proposed use and exposed area of the gravel pit in accordance with section 37-90-137(2) and (11), C.R.S., in conjunction with this plan.
3. The total surface area of the groundwater exposed at the Amen Aggregate Resource must not exceed 0.65 acres for the period of April through June 2020, 0.88 acres for the period of July through September 2020, 1.23 acres for the period of October through December 2020, and 1.74 acres for the period of January through March 2021, which results in an annual net evaporative loss of 2.58 acre-feet.
4. The amount of water used for operational purposes at the Amen Aggregate Resource during this plan period must not exceed 18.5 acre-feet, estimated as 6.73 acre-feet for dust control purposes and 11.77 acre-feet lost with the production of 400,000 tons of mined aggregate.
5. Total consumption at the Amen Aggregate Resource must not exceed these aforementioned amounts unless a new SWSP is approved for the new amounts.
6. Approval of this plan is for the purposes as stated herein. Additional uses will be allowed only if a new SWSP is approved for those additional uses.
7. The Applicant shall replace the net evaporative depletions from the exposed groundwater surface area that may occur during the ice covered period (December and January) for any time that the exposed groundwater 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 SWSP, the replacement water must be appurtenant to this site until a plan for augmentation is obtained.

9. All pumping for dust control purposes shall be measured in a manner acceptable to the division engineer.

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. Notice must be provided and approval made by the water commissioner at least 48 hours prior to the release of replacement water, or as required by the water commissioner.

11. The Division Engineer, or his designated representative, will administer all such water transported in the Big Thompson River or its tributaries under this SWSP, including water for replacement of depletions, past intervening headgates to ensure that such water is not intercepted or otherwise diminished in quantity by diversion, use or other interference by intervening water rights and to assure that such water remains available and suitable for the Applicant's uses under this SWSP, except when any intervening headgate is diverting the entire flow of ("sweeping") the river. In the event that delivery past headgates which sweep the river requires the installation of a bypass structure or the use of an existing bypass structure by agreement with a third-party, Applicant is responsible for either installing a new bypass structure with a continuous recording measuring device(s) as approved by the Water Commissioner or securing an agreement with a third-party to use an existing bypass structure and providing such information and agreement to the Division Engineer.

12. The Division of Water Resources will not be responsible for any enforcement or administration of third party agreements that are not included in a decree of the water court.

13. If approved by the division engineer, 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 any aggregated release.

14. Conveyance loss for delivery of augmentation water is subject to assessment and modification as determined by the water commissioner or division engineer.

15. Adequate accounting of depletions and replacements must be provided to the division engineer in Greeley (DNR_Div1Accounting@state.co.us) and the water commissioner (Jean Lever at Jean.Lever@state.co.us) on a monthly basis or other interval acceptable to both of them. Submitted accounting shall conform to the Administration Protocol *"Augmentation Plan Accounting, Division One – South Platte Basin"* (attached).

    In addition, it is the Applicant's responsibility to verify that the entities making replacements are identifying this use on their accounting submitted to our office. For the period of this plan, that entity is the City of Loveland.

16. The name, mailing address, and phone number of the contact person who will be responsible for operation and accounting of this plan must be provided on the accounting forms to the division engineer and water commissioner.

17. The approval of this SWSP does not relieve the Applicant and/or landowner of the requirement to obtain a Water Court decree approving a permanent plan for augmentation

or mitigation to ensure the permanent replacement of all depletions, including long-term evaporation losses and lagged depletions after gravel mining operations have ceased. 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 (3) 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.

18. Dewatering at this site will produce delayed depletions to the stream system. As long as the pit is continuously dewatered, the water returned to the stream system should be adequate to offset the depletions attributable to the dewatering operation, thus dewatering is required to continue during the term of this plan. The operator shall equip the dewatering operations with a totalizing flow meter and report monthly meter readings which will be used to determine the post-pumping depletions when dewatering ceases. Once dewatering at the 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.

19. If dewatering of the Amen Aggregate Resource site is discontinued, the pit would fill, creating additional depletions to the stream system due to increased evaporation. To assure that additional depletions to the river do not occur, a bond for $375,904.00 through the DRMS for reclamation of Phase 1 activities has been obtained. Therefore, if the dewatering is discontinued the bond can finance the construction of a compacted clay liner around Cell 2, thus preventing depletions to the stream system.

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 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 excavation of product from below the water table, and all other use of water at the pit, must cease immediately.

21. In accordance with amendments to section 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 the substitute supply is of a quality to meet the 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 water court case or any other legal action that may be initiated concerning the SWSP. This decision shall not bind the state engineer to act in a similar manner in any other applications involving other SWSPs or in any proposed renewal of this SWSP, 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.

Should there be any further comments or questions, please contact Michael Hein in Greeley at 970-352-8712 or Javier Vargas-Johnson of this office.

Sincerely,

Jeff Deatherage, P.E.
Chief of Water Supply

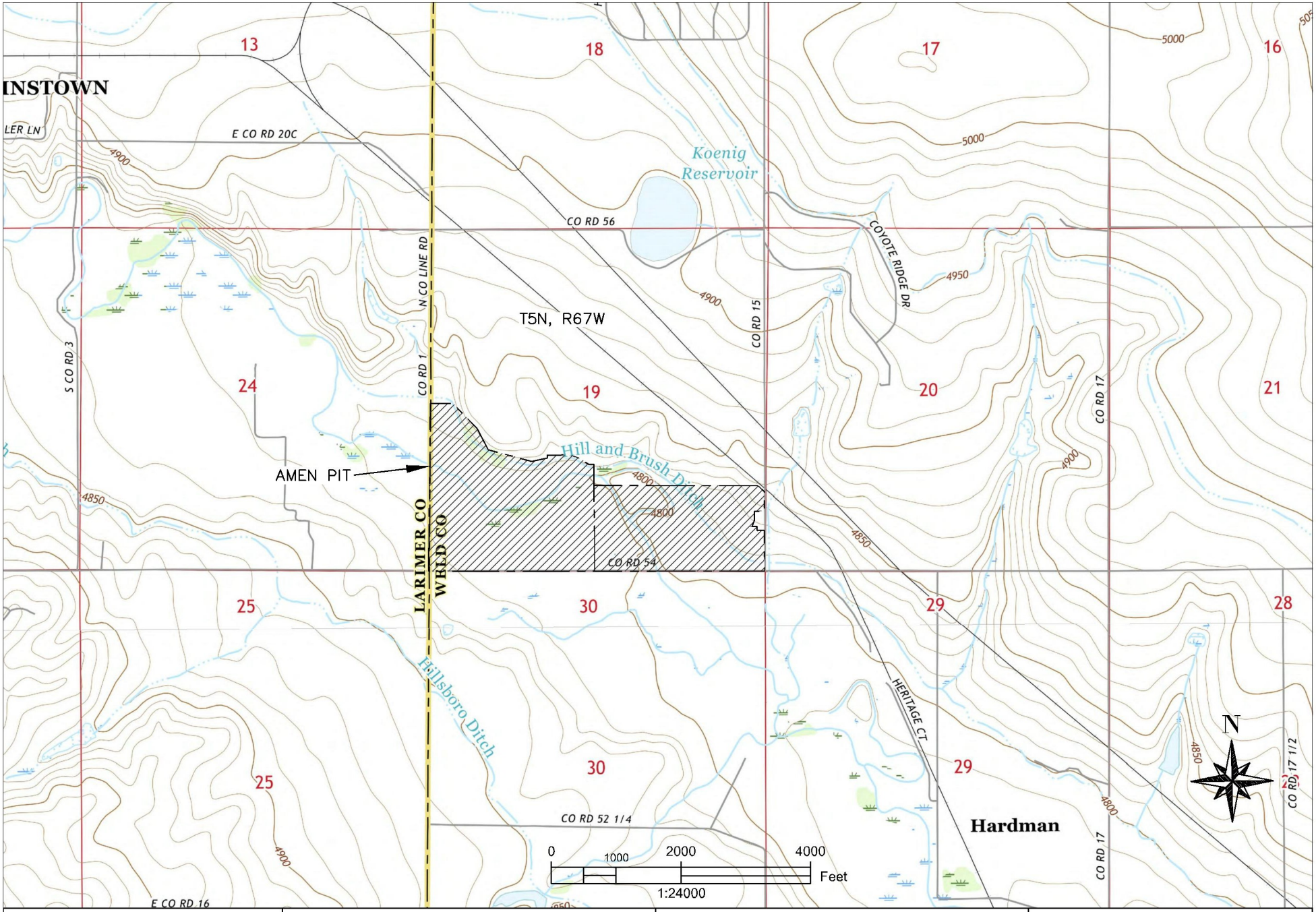
Attachments: Figure 1
Table AI.1
Table AI.3
Water Lease
Administration Protocol *"Augmentation Plan Accounting, Division One – South Platte River"*

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

Jean Lever, Water Commissioner, Water District 4, Jean.Lever@state.co.us

Louis Flink, Tabulation/Diversion Records Coordinator, Louis.Flink@state.co.us

Division of Reclamation Mining and Safety, Eric.Scott@state.co.us



REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED

Weiland, Inc.
Environmental & Engineering
PO BOX 18087
BOULDER, CO 80308
ph 303-443-9521

AMEN AGGREGATE RESOURCES

TEMPORARY SUBSTITUTE WATER SUPPLY PLAN

WELD COUNTY,CO

PREPARED FOR: COULSON EXCAVATING CO., INC.

FIGURE 1

SITE LOCATION MAP

SCALE	DWG NO.	REV
1"=2,000'	FIGURE 1.DWG	REV

DRAWN BY:	CHECKED BY:	DATE	SHEET
CTW	PFW	05/02/2016	1 OF 1

AI.1 Evaporative Loss Worksheet

Month	(1) Monthly Distribution	(2) Free Water Surface Evaporation [ft./yr.]	(3) Gross Evaporation Rate [ft./mo.]	(4) Surface Area [acres]	(5) Gross Evaporation [acre-ft.]	(6) Average Monthly Precip. [ft.]	(7) Effective Precip. Credit [acre-ft.]	(8) Net Evaporative Loss (unlagged) [acre-ft.]
Apr-20	0.090	3.367	0.303	0.65	0.20	0.17	0.08	0.12
May-20	0.120	3.367	0.404	0.65	0.26	0.22	0.10	0.16
Jun-20	0.145	3.367	0.488	0.65	0.32	0.14	0.06	0.26
Jul-20	0.150	3.367	0.505	0.89	0.45	0.13	0.08	0.37
Aug-20	0.135	3.367	0.455	0.89	0.40	0.11	0.07	0.33
Sep-20	0.100	3.367	0.337	0.89	0.30	0.13	0.08	0.22
Oct-20	0.070	3.367	0.236	1.23	0.29	0.10	0.09	0.20
Nov-20	0.040	3.367	0.135	1.23	0.17	0.06	0.05	0.12
Dec-20	0.030	3.367	0.101	1.23	0.00	0.05	0.00	0.00
Jan-21	0.030	3.367	0.101	1.74	0.00	0.04	0.00	0.00
Feb-21	0.035	3.367	0.118	1.74	0.21	0.05	0.06	0.15
Mar-21	0.055	3.367	0.185	1.74	0.32	0.12	0.15	0.17
totals			3.367		2.92	1.32	0.82	2.10

Notes:

(1) = SEO Monthly fraction of evaporation for elevations below 6500 ft from Guidelines for Substitute Water Supply Plans.

(2) = Free Water Surface Evaporation from NOAA Technical Report NWS 33 = Class A Pan Evaporation * Kp, where Kp = 1.0. = 40.4" = 3.3667 ft/yr

(3) = Column (1) * Column (2).

(4) = Total Free Water Surface Area (see Figure 2 - Site Plan).

(5) = Column (3) * Column (4). For months where Mean Ave. Temp. <32, ice cover = 0.0 Evap.

(6) = From AI.5 Climate Data.

(7) = (Column (6) * 70%) * Column (4)

(8) = Column (5) -Column (7).

Table AI.3. Total Net Water Loss / Replacement Requirement 2020-2021

Month	(1) Monthly Evaporative Loss Cell 2	(2) Monthly Volume of Mined & Dust Water	(3) Total Unlagged Depletions	(4) Total Lagged Depletions	(5) Total Lagged Depletions + Transit Loss
	[acre-ft]	[acre-ft]	[acre-ft]	[acre-ft]	[acre-ft]
Apr-20	0.12	1.45	1.57	0.93	0.95
May-20	0.16	1.07	1.23	1.06	1.08
Jun-20	0.26	3.21	3.47	2.43	2.47
Jul-20	0.37	2.43	2.80	2.55	2.60
Aug-20	0.33	2.76	3.09	2.76	2.82
Sep-20	0.22	2.09	2.31	2.43	2.48
Oct-20	0.20	2.00	2.20	2.27	2.31
Nov-20	0.12	1.11	1.23	1.66	1.69
Dec-20	0.00	0.56	0.56	1.04	1.06
Jan-21	0.00	0.28	0.28	0.66	0.67
Feb-21	0.15	0.46	0.61	0.71	0.72
Mar-21	0.17	1.08	1.25	1.08	1.10
totals	**2.10**	**18.50**	**20.60**	**19.58**	**19.98**

(1) = Columns (8) from AI.1
(2) = Columns (5) from AI.2
(3) = Sum of Columns (1-2)
(4) = Column (5) Lagged in Real Time with IDS AWAS (See AI.4)
(5) = Column (4) * 2% Transit Loss from City of Loveland WWTP 700 S. Boise Ave

City of Loveland

Department of Water and Power
Service Center • 200 N. Wilson Avenue • Loveland, CO 80537
(970) 962-3000 • (970) 962-3400 Fax • (970) 962-2620 TDD
www.cityofloveland.org

WATER LEASE

The City of Loveland, Colorado, hereby agrees to lease to Coulson Excavating Company ("Lessee") the following water for the irrigation season ending October 31, 2020.

Description: Up to 400 acre-feet of reusable water from the City of Loveland for direct delivery out of the Big Thompson River in daily coordination with the City of Loveland and the State River Commissioner for the Big Thompson River. The extraction rate is not to exceed 2.0 cfs any given day.

In exchange for use of the water as set forth herein, Renter shall pay the City up to $27,900. Said payment has been calculated as follows:

Irrigation rate for reusable water calculated as ~$66.43/AF x 400 AF:	$26,571.43
City of Loveland 5% Administrative Fee:	$1,328.57
Total Cost of Leased Water:	**$27,900.00**
Required 50% Payment upfront, with the remainder of the cost paid on actual use of up to 400 AF:	**$13,950.00**

In the event the City has an urgent need for water, as determined in the sole discretion of the City, or if the City desires to sell or transfer the shares to a third party, the City may unilaterally terminate this Water Lease without cause. The City will endeavor to give Lessee thirty (30) days notice of such termination, but shall not be required to do so. The Lessee shall not rent, sublet, or otherwise convey to any person or entity the right to use the leased water. The City grants no interest in the leased water to the Lessee other than as explicitly set forth in this one page annual lease agreement. Lessee shall make no claims to any rights, title, or interest in the leased water other than as explicitly set forth in this Water Lease. Delivery of water by the City under this Water Lease shall be on an "as is" basis only, and the City neither expressly nor impliedly warrants or guarantees the quality of the water or the quantity of water that will be yielded from the shares leased to Lessee.

Signed by the City and effective this 30th day of December, 2019.

This lease may be executed by electronic signature in accordance with C.R.S 24-71.3-101 *et seq.*

Renter: Coulson

Coulson Excavating Company
3609 North County Road
Loveland CO 80538
(970) 667-2178

By: _____

Title: CEO

City of Loveland, Colorado
Department of Water
200 N Wilson Ave.
Loveland, CO 80537
(970) 962-2620

By: Ryan Van Pelt

Ryan Van Pelt, Engineer II
Loveland Water & Power

Water Deposit

Vendor: Coulson Excavating

Check Number: 56812

Other References: Reusable water lease For Filling Cindy Wagner's lined gravel pit, 2020 Irrigation Season

Account to deposit into:

	Split %	Total of Deposit
☐ Cash-in-lieu (302-00-000-0000-38500)		
☑ Water Rental (300-00-000-0000-35442)	100%	$13,950.00
☐ Raw Water Dev't Fee (302-00-000-0000-38403)		
☐ Native Raw Wtr Storage Fee (302-00-000-0000-38402)		
☐ Hydrozone High Use Surcharge		
○ Outside City (302-00-000-0000-35475)		
○ Inside City (302-00-000-0000-35476)		

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) 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. <u>All wells must be decreed by the water court, permitted by the state engineer or included in a decreed plan for augmentation</u>. Unregistered and undecreed 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*)*