COLORADO
Division of Water Resources
Department of Natural Resources

July 22, 2020

Paul Weiss, P.E.
Williams and Weiss Consulting, LLC
5255 Ronald Reagan Blvd, Ste 220
Johnstown CO 80534

Re: Derr Pit Substitute Water Supply Plan (WDID 0302547, Plan ID 5240)
DRMS Permit No. M-2008-017 (WDID 0303035)
S½ NE¼ Section 4, T5N, R65W, 6th P.M.
Water Division 1, Water District 3, Weld County

Approval Period: August 1, 2020 through July 31, 2021
Contact information for Mr. Weiss: 970-221-5159; pswwater@msn.com

Dear Mr. Weiss:

We have reviewed your letter dated July 11, 2020 requesting approval of a substitute water supply plan ("SWSP") on behalf of Broken Arrow Investments, LLC ("Broken Arrow" or "Applicant") in accordance with section 37-90-137(11), C.R.S., to cover depletions caused by an existing gravel pit operation known as the Derr Pit (M-2008-017). A SWSP for this site was originally approved on November 12, 2010 and was most recently renewed in a letter dated August 1, 2019 to cover operations through July 31, 2020. The required renewal fee of $257 has been received (receipt no. 10004593).

SWSP Operations

The Derr Pit (WDID 0303035, well permit no. 82868-F) is a gravel pit operation located in the NE¼ of Section 4, Township 5 North, Range 65 West of the 6th P.M., in Weld County (see attached Exhibit 2). Mining operations at the Derr Pit ceased after December 31, 2012, but recommenced in the spring of 2019. In 2018, Broken Arrow obtained an amendment (AM01) to their reclamation permit to add 105.8 acres to permit M-2008-017 and to revise the mining and reclamation plans. According to information provided by the Applicant, operations at the site did not expose any groundwater until late April 2019. During this plan period, consumptive uses at the Derr Pit site will include evaporative losses from exposed groundwater, water used for dust control purposes, and water lost in the mined product. The pit is proposed to be continuously dewatered up until a slurry wall is constructed around the site. A slurry wall is anticipated to be constructed around Phases 1-4 of the original permit area in the next 1 to 2 years. A second cell is proposed to be constructed around Phases 5-7 prior to the exposure of groundwater in those cells, approximately 4 to 5 years from now. The replacement source proposed to be utilized in this SWSP is water stored in the nearby Loloff Pit under free river conditions.

Depletions

A maximum of 3.0 acres of groundwater surface area are anticipated to be exposed in Phases 1-4 of the original permit area, consisting of 0.75 acres in dewatering trenches and between 0.95 and 1.3 acres in recharge ponds. Net evaporative depletions were calculated to total 8.75 acre-feet per year based on a gross annual evaporation of 45 inches from the exposed water surface, and a credit of 9.97 inches for effective precipitation (see attached Table 1). No credit was claimed for anticipated ice-covered periods. The estimated monthly depletions due to evaporation during this plan period are shown on the attached Table 1.

Broken Arrow estimates that they will mine a total of 600,000 tons of sand and gravel during this plan period. All of the material will be mined below the groundwater table, but in a dewatered state, and will not be washed. The water retained by the sand and gravel is therefore considered to be 2% of the mined material by weight, resulting in a total groundwater loss of 8.83 acre-feet.

The Applicant has estimated that a total of 5.00 acre-feet of water will be used for dust control purposes at the site during this plan period, based on a projected daily usage of 2,000 to 6,000 gallons per day. A water truck will be utilized to apply water for dust control purposes. Water used for dust control purposes is assumed to be 100% consumed.

A monthly breakdown of operational and evaporative consumptive use at the site is shown in the attached Table 2. Evaporative and operational consumptive use will total 22.58 acre-feet during this plan period.

The Alluvial Water Accounting System ("AWAS"), which utilizes the Glover method, was used with the alluvial aquifer boundary condition to determine the lagged depletions to the Cache la Poudre River from past and projected evaporation and operational losses at the site. The following parameters were used in the model: a distance (X) of 2,126 feet from the exposed groundwater surface to the river; a distance (W) of 22,900 feet from the stream to the impermeable boundary; a harmonic transmissivity (T) of 76,056 gallons per day per foot; and a specific yield (S) of 0.2.

The estimated lagged stream depletions due to projected operations at the Derr Pit will total 17.30 acre-feet during this plan period, as shown on the attached Table 2. The point of depletion for the Derr Pit is assumed to be on the Cache la Poudre River perpendicular to the pit, just downstream of the headgate of the Ogilvy Ditch (WDID 0300937).

Dewatering

Dewatering at the Derr Pit began in late April of 2019 and the site is proposed to be continuously dewatered up until final slurry wall construction. Dewatering water is currently delivered to two recharge sites located within the Derr Pit. Derr Pit Recharge Area 1 (WDID 0302068) is located on the west side of the site, and Derr Pit Recharge Area 2 (WDID 0302069) is located on the east side of the site (see attached Exhibit 6). Because the recharge sites are located within the Derr Pit and are closer to the river than the mined area, the timing of dewatering depletions will approximately match the timing of dewatering accretions, with accretions returning to the stream slightly ahead of depletions. As long as the mine site is continuously dewatered, the water returned to the stream system should be adequate 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 ceases at the site during mining operations and/or upon the conclusion of mining operations at the site. Evaporative depletions from the recharge ponds have been incorporated into the overall pit depletions, as described in the section above.

The District 3 water commissioner performed a site visit on October 17, 2019 and found the dewatering of Derr Pit was more water than the Recharge Areas can handle, and that the excess water was flowing into the Ogilvy Ditch. Between October 2019 and January 2020, 24.6 acre-feet of water was spilled from the recharge ponds. It was assumed that 50% of the amount spilled, or 12.3 acre-feet, was consumed and did not infiltrate into the ground or return to the river without use. Depletions from the consumption of the 12.3 acre-feet spilled from the ponds and assumed to be consumptively used were lagged to the river using the same aquifer parameters as given above. For this plan period, a total of 2.54 acre-feet of lagged dewatering depletions will be replaced.

Replacements

Depletions associated with the Derr Pit will be replaced via release of water from the Loloff Pit, which is located due west of the Derr Pit in the SE¼ of the NW¼ of Section 4, Township 5 North, Range 65 West of the 6th P.M. The slurry wall liner for the Loloff Pit was approved by the State Engineer's Office as meeting the design standard for liners on April 26, 2019, and the Loloff Pit is now classified as a lined reservoir in accordance with the *August 1999 State Engineer Guidelines for Lining Criteria for Gravel Pits* (Loloff Reservoir, WDID 0303483). During March and April of 2020, Loloff delivered 239.33 acre-feet of water to the lined Loloff Pit that was diverted under free river conditions with the knowledge and approval of the water commissioner. Of this amount, 140 acre-feet are reserved for replacement purposes under the Loloff Pit SWSP (WDID 0302524, Plan ID 3270), leaving 99.33 acre-feet of available water. Water was diverted into storage in the Loloff Pit by diverting from the river at the Ogilvy Ditch, conveying the water down the ditch, and pumping the water from the ditch into the pit. A copy of an agreement between the Ogilvy Irrigating and Land Company and Mill Iron Mining LLC, allowing for the use of the Ogilvy Ditch for this purpose is attached to this approval. Mill Iron Mining, LLC is associated with Loloff Construction, Inc., which in turn is also known as Broken Arrow Investments. Under the agreement, Mill Iron Mining is entitled to use the first 200 acre-feet of free river water stored in the Loloff Pit annually for augmentation purposes. Metered pumping from the Loloff Pit will be discharged into the unnamed natural seep located south of the property, from where it will work its way back to the Cache la Poudre River just below the Derr Pit and the Ogilvy Ditch. Consistent with the Loloff Pit SWSP, 50% of the releases to the seep will be deemed to enter the river system as surface water, while the other 50% will be lagged back to the river system as subsurface flow. You have projected that a total of 30 acre-feet of previously stored free river water will be pumped from the Loloff Pit for replacement purposes in this SWSP, of which 15 acre-feet will return to the river as surface flows, and 15 acre-feet will return to the river as subsurface flows resulting in 7.67 acre-feet of accretions at the river during this plan period. The monthly depletions and replacement requirements are found on the attached Table 2. As shown on Table 3, total replacements (15 + 7.67 = 22.67 acre-feet) will exceed total lagged depletions (17.30 + 2.54 = 19.84 acre-feet) on both an annual and monthly basis.

Long Term Augmentation

In accordance with the letter dated April 30, 2010 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 groundwater. In accordance with approach number 3, a total bond amount of $1,362,889, which includes the cost of installing a slurry wall, has been set. DRMS approved a phased mining plan operation which allows the bond to be posted in phases. Prior to opening a new phase the operator will submit an increased financial warranty so as to hold enough bond at any given time to construct a slurry wall around the actively mined phases. The current bond amount is $215,400, which covers dry mining in Phases 1-4 of the original permit area and Phase 5A of the amendment area. Prior to exposing groundwater or disturbing additional surface areas, the Applicant is required to notify DRMS so that the reclamation bond may be adjusted appropriately. Proof that such a bond has been obtained and the requirements of the April 30, 2010 letter from DRMS have been satisfied must be provided to this office (the Division of Water Resources).

Conditions of Approval

I hereby approve the proposed 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 August 1, 2020 through July 31, 2021, unless otherwise revoked or superseded by decree. If a court decreed plan for augmentation is not obtained for the proposed uses by the SWSP expiration date, a renewal request must be submitted to this office with the statutory fee of $257 no later than June 1, 2021. 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. 82868-F was obtained for the current use and exposed pond surface area of the gravel pit in accordance with sections 37-90-137(2) and (11), C.R.S.
3. The total surface area of the groundwater exposed at the Derr Pit must not exceed 3.0 acres, which results in an annual net evaporative loss of 8.75 acre-feet.
4. The annual amount of water used for operational purposes at the Derr Pit shall not exceed 13.83 acre-feet, estimated as 5.00 acre-feet for dust suppression and 8.83 acre-feet lost with the production of 600,000 tons of mined product.
5. Total consumption at the Derr Pit must not exceed these aforementioned amounts unless an amendment is made to this SWSP.
6. Approval of this SWSP is for the purposes as stated herein. Any additional uses for which the water may be used will be allowed only if a new SWSP is approved for those additional uses.
7. 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.

8. The release of replacement water may be aggregated at the discretion of the division engineer and/or water commissioner. The water commissioner and/or the division engineer shall determine the rate and timing of any aggregated release.

9. The replacement water that is the subject of this SWSP cannot be sold or leased to any other entity. 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.

10. All diversions and discharges shall be measured in a manner acceptable to the division engineer. The Applicant shall install and maintain such measuring devices as required by the division engineer for operation of this SWSP.

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

12. The Applicant shall provide daily accounting (including, but not limited to diversions, depletions, replacement sources, and river calls) on a monthly basis, or more frequent if required by the water commissioner. The accounting must be emailed to the water commissioner (Mark Simpson at Mark.Simpson@state.co.us) **and** DNR_Div1Accounting@state.co.us within 30 days of the end of the month for which the accounting applies. Accounting and reporting procedures are subject to approval and modification by the division engineer. Accounting forms need to identify the WDID number for each well operating under this SWSP. **NOTE:** Monthly accounting, even during the winter non-irrigation season, is required.

13. Applicant shall follow the attached Augmentation Plan Accounting Protocol and Recharge Protocol for the operation of this SWSP.

14. 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, thus dewatering is required to continue during the term of this plan. Once dewatering at the sites cease, the delayed depletions must be addressed, including depletions resulting from the gradual refilling of the pit. The monthly volume of water pumped for dewatering operations must be recorded through a totalizing flow meter and shown on the submitted accounting sheets.

15. If dewatering of the site is discontinued prior to completion of the slurry wall liner(s), 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 $215,400 through the DRMS for lining or backfilling of the exposed groundwater has been obtained. Therefore, if the dewatering is discontinued, the bond can finance the completion of the lining or the backfilling of the pit, thus preventing ongoing depletions to the stream system.

16. The approved final reclamation plan for the Derr Pit is a lined water storage reservoir. If a lined pond results after reclamation, replacement of lagged depletions, including lagged dewatering depletions, is required to continue until there is no longer an effect on stream flow. If reclamation of the mine site produces 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. Granting of this plan does not imply approval by this office of any such court application(s).

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

18. 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 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.

19. 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 this 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.

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: Exhibit 2 - Derr Pit Site Map
Exhibit 3 - Tables 1-3
Exhibit 6 - Location Map for Pits and Recharge Ponds
Ogilvy/Mill Iron Mining Agreement
Letter from DRMS dated April 30, 2010
Augmentation Plan Accounting & Recharge Protocols

Cc: Michael Hein, Lead Assistant Division Engineer, Michael.Hein@state.co.us

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

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

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

Exhibit 2. Derr Pit Site Map

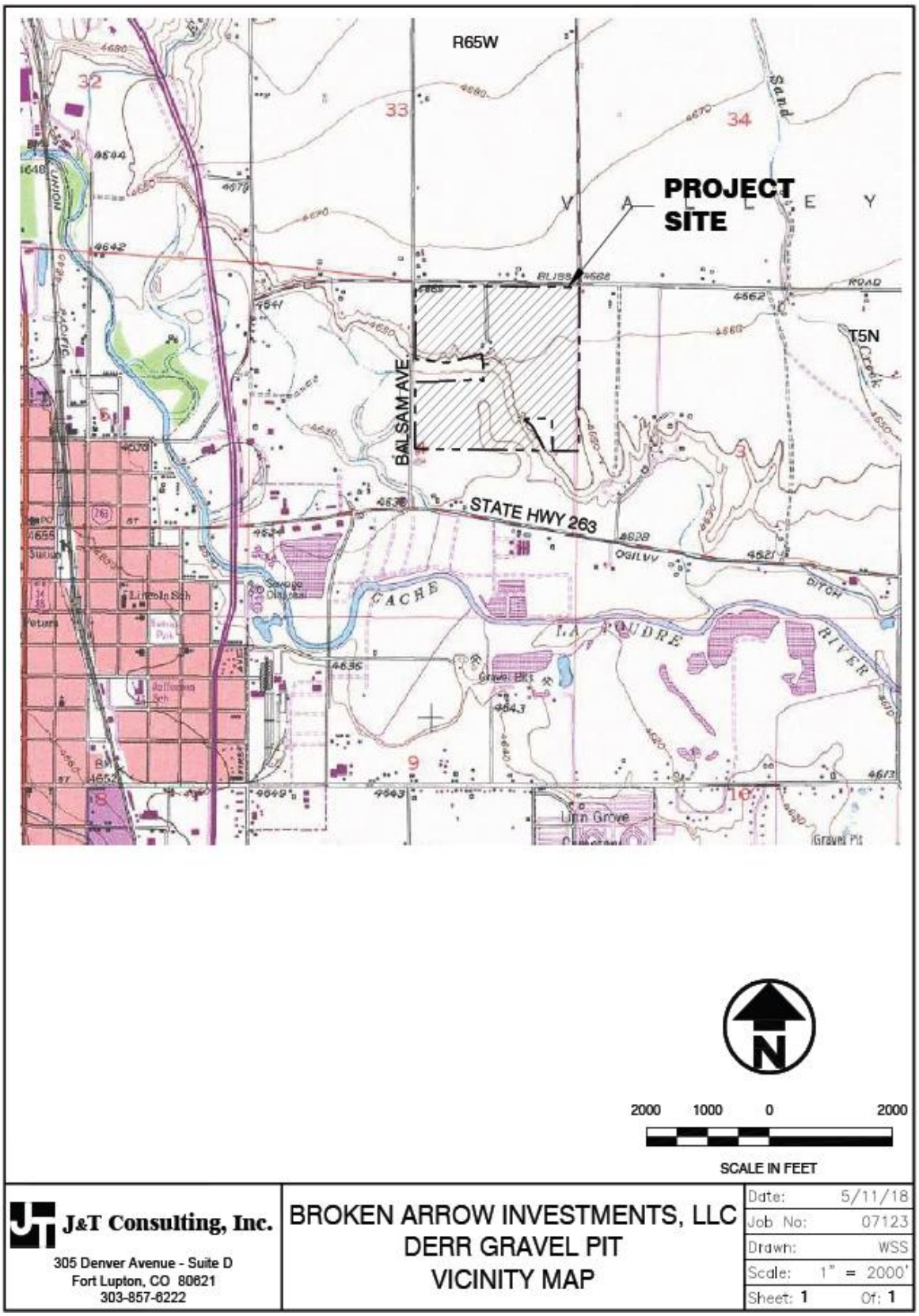

Exhibit 3 Table1, Table2, Table3. Operational Losses, Lagged Depletions, and Water Balance

Derr Pit
Evaporation Losses
Table 1

Williams and Weiss Consulting, LLC

Submitted by:
Paul Weiss, P.E.
5255 Ronald Reagan Boulevard, Suite 220
Johnstown, CO 80534

Total Exposed Water Surface Area 3 acres

	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	TOTAL
Distribution of Annual Evaporation[2]	0.135	0.100	0.070	0.040	0.030	0.030	0.035	0.055	0.090	0.120	0.145	0.150	1.000
Net Free Water Surface Evaporation (feet)[3]	0.394	0.292	0.204	0.117	0.088	0.088	0.102	0.160	0.263	0.350	0.423	0.438	2.917
Net Evaporation at Loloff Pit (ac-ft)	1.181	0.875	0.613	0.350	0.263	0.263	0.306	0.481	0.788	1.050	1.269	1.313	8.750

Notes:

[2] Distribution of annual evaporation per DWR Guidelines for gravel pits at elevations below 6,500 feet.

[3] Annual gross evaporation rate of 45 inches taken from NOAA Technical Report NWS 33.
Consistent with previously approved Loloff SWSP, a credit of 9.97 inches of effective precipitation results in approximately 35 inches net evaporation.

Operations Water Balance: Derr Pit Substitute Water Supply Plan
Table 2

Williams and Weiss Consulting, LLC

Submitted by:
Paul Weiss, P.E.
5255 Ronald Reagan Boulevard, Suite 220
Johnstown, CO 80534

	Depletions											
Month	Monthly Net Evap (ft)	Exposed Water Surface Area (acres)	Evaporative Losses (ac-ft)	Mining Production (tons)	Water Retained in Material (ac-ft)	Water Used For Dust Control (ac-ft)	Total CU (ac-ft)	Lagged Depletions (ac-ft)	Percent of Month Under Call (%)	Operations Augmentation Requirement (ac-ft)	Dewatering Lagged Depletions (ac-ft)	Net Impact to Poudre River (ac-ft)
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)
Aug-20	0.39	3.00	1.18	50,000	0.74	0.55	2.47	-1.64	100%	-1.64	-0.39	-2.03
Sep-20	0.29	3.00	0.88	50,000	0.74	0.55	2.16	-1.66	100%	-1.66	-0.34	-2.00
Oct-20	0.20	3.00	0.61	50,000	0.74	0.40	1.75	-1.59	100%	-1.59	-0.28	-1.87
Nov-20	0.12	3.00	0.35	50,000	0.74	0.40	1.49	-1.47	100%	-1.47	-0.25	-1.72
Dec-20	0.09	3.00	0.26	50,000	0.74	0.20	1.20	-1.35	100%	-1.35	-0.22	-1.57
Jan-21	0.09	3.00	0.26	50,000	0.74	0.20	1.20	-1.23	100%	-1.23	-0.20	-1.43
Feb-21	0.10	3.00	0.31	50,000	0.74	0.20	1.24	-1.17	100%	-1.17	-0.18	-1.35
Mar-21	0.16	3.00	0.48	50,000	0.74	0.40	1.62	-1.18	100%	-1.18	-0.16	-1.34
Apr-21	0.26	3.00	0.79	50,000	0.74	0.50	2.02	-1.28	100%	-1.28	-0.15	-1.43
May-21	0.35	3.00	1.05	50,000	0.74	0.50	2.29	-1.43	100%	-1.43	-0.14	-1.57
Jun-21	0.42	3.00	1.27	50,000	0.74	0.55	2.55	-1.58	100%	-1.58	-0.12	-1.70
Jul-21	0.44	3.00	1.31	50,000	0.74	0.55	2.60	-1.72	100%	-1.72	-0.11	-1.83
TOTAL	2.92		8.75	600,000	8.83	5.00	22.58	-17.30		-17.30	-2.54	-19.84

Notes:
(A) Monthly evaporation
(B) Exposed water surface
(C) Monthly evaporation = (C) x (B)
(D) Estimated Production
(E) Water Retained in Material, assuming 2% Retention
(F) Estimated Water Use for Dust Control
(G) Total Consumptive Use = (C) + (E) + (F)
(H) Lagged Depletions computed with AWAS
(I) Percent of Month under Call Affecting Recharge Reach
(J) Augmentation Requirement = (H) x (I)
(K) Lagged depletions from recharge pond spills in late 2019
(L) Net Impact to Poudre River = (K) + (J)

Releases and Water Balance: Derr Pit Substitute Water Supply Plan
Table 3

Williams and Weiss Consulting, LLC

Submitted by:
Paul Weiss, P.E.
5255 Ronald Reagan Boulevard, Suite 220
Johnstown, CO 80534

	Replacement Supply				
Month	Loloff Pit Release (ac-ft)	Infiltration of Release (ac-ft)	Infiltration Lagged Return (ac-ft)	Total Loloff Accretions to River (ac-ft)	Net Effect on the Poudre River (ac-ft)
	(A)	(B)	(C)	(D)	(E)
Aug-20	4.00	2.00	0.11	2.11	0.08
Sep-20	3.50	1.75	0.47	2.22	0.22
Oct-20	3.00	1.50	0.66	2.16	0.29
Nov-20	2.50	1.25	0.73	1.98	0.26
Dec-20	2.00	1.00	0.73	1.73	0.16
Jan-21	2.00	1.00	0.70	1.70	0.27
Feb-21	2.00	1.00	0.69	1.69	0.34
Mar-21	2.00	1.00	0.69	1.69	0.35
Apr-21	2.00	1.00	0.69	1.69	0.26
May-21	2.00	1.00	0.70	1.70	0.13
Jun-21	2.50	1.25	0.72	1.97	0.27
Jul-21	2.50	1.25	0.78	2.03	0.20
TOTAL	30.00	15.00	7.67	22.67	2.83

Notes:
(A) Pumped water from Loloff Pit
(B) 50% infiltration in drainage ditch and Ogilvy Canal
(C) Lagged returns using AWAS: T=79056 gpd/ft, S=0.2, W = 22900 ft, X = 2500 ft
(D) Net Accretions = (A) - (B) + (C)
(E) Net Effect on Poudre River = (D) + Table1 (L)

Exhibit 6. Location Map for Pits and Recharge Ponds

Exhibit 7. Loloff/Ogilvy Term Sheet

March 23, 2020
Kelly Hodge
Mill Iron Mining LLC

RE: Loloff Pit Term Sheet

The following sets forth the basic terms of understanding ("Term Sheet") between Ogilvy Irrigating and Land Company (herein after "Ogilvy") and Mill Iron Mining LLC (herein after "MIM") concerning the immediate use and eventual purchase, by Ogilvy, of the Loloff Pit ("Pit"). The Term Sheet is intended to set forth the parties' understanding and will be used as the basis for the development of a legally binding agreement between the parties ("Agreement"). however, this Term Sheet does not bind either party to enter into the Agreement, but shall govern the delivery and use free river water to Pit upon execution while the Agreement is being negotiated and executed.

Purposes:

- Allow MIM to start pumping free river water to the Pit as soon as possible while free river exists to help MIM with its immediate augmentation needs.
- Allow Ogilvy to store free river in the Pit for water sales and augmentation needs.
- Set forth general terms by which Ogilvy will purchase the Pit in 2022.

Free River Storage Prior to Agreement:

- The parties will coordinate and cooperate to pump free river water, when it is available, from the Ogilvy Ditch.
- To the extent necessary, Ogilvy grants a carrying right in the Ogilvy Ditch for this purpose. The carrying right is for free river water to be delivered by Ogilvy in the Ditch at times when it will not be injurious to the Company or its shareholders. However, to the extent possible the parties will maximize the delivery and use of free river water for storage in the Pit.
- The parties will coordinate on the location and set-up for the pump that will allow water to be pumped from the Ditch to the Pit, but such pump shall be a minimum 8" pump.
- This understanding is intended to govern free water deliveries prior to Ogilvy acquiring the Pit.

- MIM shall be entitled to use the first 200 acre feet of free river water stored in the Pit annually for augmentation of the Pit. Any additional amount, up to 500 acre feet, from any source (other than free river), may be stored each year and available for Ogilvy.

- MIM may pump possible excess water from the Dust & Dirt property into the Loloff Pit and take back to Dust & Dirt when needed. This shall not be in deemed a conflict or detrimental to this Agreement.

- MIM shall pay the cost and expense of pumping the first 200 acre feet. Ogilvy shall pay the costs of any additional amount pumped. The parties shall share the cost of pump set up and break down in relation to the amount of water pumped by each, if any. The parties shall share metering data, but shall otherwise be responsible for their own accounting. MIM shall be responsible for accounting for the Pit. The parties shall share evaporation/seepage in proportion to the amount of water each has stored in the Pit.

- The parties shall individually bear the cost and responsibility for delivering their water from the Pit to the ditch or the river. MIM shall be entitled to discharge to the river via the Ogilvy Ditch, provided that such discharge doesn't displace Ogilvy water from the Ditch. Ogilvy shall have the right to access and use the Pit and MIM property to the extent necessary to remove its water and deliver it to the Ditch. The parties shall work to cooperate to the extent possible to make joint deliveries to and releases from the Pit. Any additional metering or measuring devises needed by MIM as the operation of its plan for augmentation (e.g. for measuring returns to the river) shall be borne by MIM.

These terms of use shall govern until the Agreement is executed or until the parties determine no such Agreement will be executed. In the later event, Ogilvy shall have until the following storage season (commencing November 1) to remove any water it has stored in the Pit.

The parties hereto agree as of the date first written above.

Ogilvy Irrigating and Land Company

By: Donald G Wacker
Donald G. Wacker, President

Mill Iron Mining, LLC

By:
Kelly Hodge, Manager

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*)*

ADMINISTRATION PROTOCOL
Recharge
Division One – South Platte River

The purpose of a "recharge structure" as referenced in this document is to introduce water to the river alluvium that will result in accretions to a live stream. For the purposes of this document, a recharge structure does not include a well that is used to artificially recharge a Denver Basin bedrock aquifer. With that qualification, a recharge structure is defined as:

- A section of ditch, the losses from which can be reasonably modeled as a single source of water.
- A pond or group of ponds that receive water from the same delivery location and can be reasonably modeled as a single source of water.

1. A written notification for each recharge structure must be provided to the water commissioner and division engineer. **The Division of Water Resources will not acknowledge any recharge activity conducted without the knowledge of the water commissioner.** The notification must include:
    a. a map showing the location of the structure and the court case number of the plan for augmentation authorized to use the structure;
    b. a map showing the location of the diversion point and the court case number for the decree authorizing the diversion, if any;
    c. a map showing the location of and all information for the metering location;
    d. the maximum water surface area of the structure;
    e. for ditch structures, if the ditch is divided into more than one recharge reach, an explanation of how the volume diverted will be allocated to the various sections.
2. Upon receiving written notification or decree by the water court, the division engineer will assign the structure a WDID number. The WDID number is the identification number that will be used for the administration of the structure and must be included in all correspondence and accounting reports. **(For structures that were included in a decreed plan for augmentation but were not physically constructed at the time of the decree, a written notification of the intent to construct the structure must be provided.)**
3. Any structure that intercepts groundwater must be permitted as a well and included in a plan for augmentation or substitute water supply plan approved by the state engineer. The division engineer strongly recommends avoiding recharge structures that intercept groundwater, in order to simplify the accounting process.
4. The flow into **EVERY** recharge structure **MUST** be metered and equipped with a continuous flow recorder unless the water commissioner in conjunction with the division engineer determines adequate records may be kept without such equipment. If the recharge structure is designed to discharge water via a surface outlet, such discharge must also be metered and equipped with a continuous flow recorder. The water commissioner **MUST** approve the use of the recharge structure **BEFORE** any credit will be given for water placed into recharge.

5. All recharge ponds must have a staff gauge installed such that the gauge registers the lowest water level in the pond. The staff gauge must be readable from a readily accessible location adjacent to the pond.
6. All recharge areas must be maintained in such a way as to minimize consumptive use of the water by vegetation. **No recharge area may be used for the planting of crops during the same irrigation year that it is used as a recharge site without prior approval from the water commissioner or division engineer.**
7. The amount of water recharged to the alluvial aquifer is determined by measuring the amount of water delivered to the recharge structure and subtracting:
    a. the amount of water discharged from the recharge structure,
    b. the amount of water lost to evaporation (see item 8, below),
    c. the amount of water lost to consumptive use due to vegetation located within the recharge structure, and
    d. the amount of water retained in the recharge structure that has not yet percolated into the ground.
8. Net evaporative losses from the recharge structure must be subtracted from the volume of water delivered to the pond. Evaporative losses must be taken every day the pond has a visible water level. If the pond does not have a stage-surface area curve approved by the water commissioner, the maximum surface area of the pond must be used to determine the evaporative losses. Monthly loss factors prorated for the number of days the pond had a visible water level may be used as may real time evaporation data from NOAA or a local weather station. If the pond is not inspected on a routine basis through the month, no prorating of monthly factors will be allowed.
9. The amount of accretions from the recharge structure will be credited only in accordance with a decreed plan of augmentation or substitute water supply plan approved by the State Engineer.
10. All water delivered for recharge must be fully consumable:
    a. changed reservoir rights or the CU portion of changed senior ditch rights;
    b. transbasin water that has been imported into the South Platte River basin;
    c. nontributary water;
    d. excess (unused) accretions from the previous recharge of fully consumable water;
    e. water diverted in priority after "notice" of intent to fully consume the water;
    f. water diverted under free river.
11. Water may be delivered to recharge only if the net impact of the associated plan for augmentation is not negative. Water must first be delivered or exchanged to offset negative impacts of the plan for augmentation before it may be diverted for recharge.
12. Accounting must be performed on a daily basis with reports submitted at least monthly and within 30 days of the end of the month for which the accounting is being made. The volume of water diverted into recharge must be provided to the water commissioner weekly when requested by the water commissioner.