COLORADO
Division of Water Resources
Department of Natural Resources

June 8, 2020

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

Re: Loloff Substitute Water Supply Plan (WDID 0302524, Plan ID 3270)
Loloff Pit, DRMS Permit No. M-1985-112 (WDID 0303012)
SE¼ NW¼ Section 4, T5N, R65W, 6th P.M.
Water Division 1, Water District 3, Weld County

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

Dear Mr. Weiss:

We have reviewed your letter dated April 13, 2020 requesting renewal of the above-referenced substitute water supply plan ("SWSP") on behalf of Loloff Construction, Inc. ("Loloff" or "Applicant"). This SWSP is requested in accordance with section 37-90-137(11), C.R.S., to cover depletions caused by an existing sand and gravel mining operation known as the Loloff Pit. The required fee of $257.00 for the renewal of this substitute water supply plan has been submitted (receipt no. 10003187).

SWSP Operations

The Loloff Pit is located in the SE¼ of the NW¼ of Section 4, Township 5 North, Range 65 West of the 6th P.M., in Weld County. Amended well permit no. 77467-F was obtained for the site. Gravel mining at the site concluded in August 2019, and no dewatering has occurred at the site since July 2019. 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). This SWSP will make replacements to the Cache la Poudre River to offset lagged depletions from past mining and dewatering operations at the site. There will be no consumptive use of groundwater at the Loloff Pit during this plan period. The replacement sources proposed to be utilized in this SWSP are yield from one share of the Greeley Irrigation Company, yield from Loloff Constructions Inc.'s water right decreed in case no. 1987CW0153, and water stored in the Loloff Pit under free river conditions.

Depletions

There will be no new depletions at the Loloff Pit during this plan period, only replacement of ongoing lagged depletions associated with past mining and dewatering operations at the site.

The IDS Alluvial Water Accounting System (AWAS) analytical stream depletion model was used to calculate the lagged depletions to the Cache la Poudre River. The model was executed in Effective SDF mode, using a stream depletion factor (SDF) of 60 days for the Loloff Pit site.

Dewatering at the site began in April 2013 and continued at consistent rates up until the commencement of construction of a slurry wall at the site in the summer of 2017, when dewatering rates began to taper off. Dewatering at the site ceased entirely after July 2019.

Water pumped from the Loloff Pit for dewatering purposes was discharged into an unnamed natural seep located just south of the property. The seep is connected to a large pond area, from which water flows southeast approximately ¼ mile through a natural channel before reaching the Ogilvy Ditch. Approximately ½ mile after entering the Ogilvy Ditch, the water reaches an outlet structure which pipes the water back to the Cache la Poudre River. A diagram of the travel path is attached as Map 2. Due to the existence of the pond area and the travel distance to the river, you have estimated that 50% of the dewatering water discharged into the seep infiltrated into the ground as a subsurface flow and 50% reached the river as surface flow.

AWAS was used to lag the subsurface component of the dewatering depletions using the same methodology as described above. Lagged accretions from the portion of dewatering water returning to the river as subsurface flow partially offset the lagged depletions from past dewatering.

Lagged depletions for this plan period were calculated to total 144.96 acre-feet, as shown in the attached Table 2. Depletions are assumed to impact the Cache la Poudre River perpendicular to the Loloff Pit, just above the headgate of the Ogilvy Ditch (WDID 0300937).

It is recommended that the applicant revise the modeling of lagged depletions by switching from Effective SDF to the Alluvial Aquifer option for future renewals of this SWSP in order to reduce the number of years that the remaining lagged depletions will extend out. The total amount of depletions to be replaced under the alluvial aquifer method will need to equal the total amount of remaining depletions calculated using the SDF method.

Replacement Sources

The replacement sources proposed for this operation consist of the yield from one share of the Greeley Irrigation Company ("GIC") available during the irrigation season, water diverted under the 1987CW0153 right for the Loloff Section 4 Ditch, and water stored in the Loloff Pit under free river conditions.

Greeley Irrigation Company Share

Loloff owns one share of the Greeley Irrigation Company, Certificate No. 3391. A share of GIC water provides the shareholder with GIC direct flow water and Fossil Creek Reservoir water. The

share was historically used for the irrigation of approximately 8.3 acres of land which have been removed from production as part of the share acquisition.

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. The use of the subject ditch share 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).

In paragraph 6.7.4 of the decree in case no. 1996CW658, future farm headgate deliveries of the 67.75 shares were limited 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 Loloff's share of GIC water under this plan must comply with these limits. **Any SWSP renewal request should propose adequate terms and conditions to assure that an expansion of use of the subject share under the GIC system will not result if Loloff reaches their annual volumetric limit and ceases diverting water or decides not to take delivery of their share.** 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 subject GIC share shall also be maintained in accordance with the surface and subsurface factors decreed in case no. 1996CW658.

For projections of 2020 deliveries, the Applicant used the historic irrigation delivery attributable to GIC direct flow diversions of 18.6 acre-feet per share and the historic irrigation delivery attributable to Fossil Creek Reservoir deliveries of 1 acre-foot per share as determined in case no. 1996CW658 for the study period of 1950-1979. As specified in case no. 1996CW658, all deliveries of GIC water incur an immediate surface return flow obligation of 23.7% for direct deliveries and 20.1% for Fossil Creek deliveries, which corresponds to surface return flow obligations of 4.41 acre-feet and 0.20 acre-feet, respectively, for this plan period. Pursuant to paragraph 6.7.6 of case no. 1996CW658, the subsurface component of the return flow obligation shall be calculated by multiplying the 5-year running average annual farm headgate deliveries of GIC water (direct flow water and Fossil Creek Reservoir water). The average annual river headgate deliveries for the last 5 years are shown on the attached Table 1. The subsurface return flow obligations for the GIC direct deliveries and Fossil Creek Reservoir deliveries are 4.12 acre-feet and 0.01 acre-feet during this plan period, respectively.

The area formerly irrigated by the subject GIC share continues to contain residual pasture grass. The measured depth to groundwater in the area ranges between 6 and 7.5 feet. In order to ensure the required dry-up conditions exist during the approval period of this SWSP, and to ensure the historical consumptive use calculated for the ditch shares changed by this SWSP do not include any credit resulting from the consumption of groundwater, the Applicant has applied a 5% reduction to the monthly consumptive use credits claimed for their GIC share.

Delivery of the yield from the subject share is expected to continue to occur at the 23rd Avenue augmentation station (WDID 0302318). Water is returned to the river in the SW¼ of the NW¼

of Section 31, Township 6 North, Range 65 West of the 6th P.M., approximately 2.5 miles upstream of the point of depletions and upstream of the Ogilvy Ditch headgate, which is the first senior water right that could be injured by depletions from the Loloff Pit. Based on conversations the Applicant has had with the GIC, the Applicant can also request delivery of the yield from the subject share at either the 16th Street or F Street augmentation stations. The 16th Street augmentation return (WDID 0302319) is located approximately 1.8 miles downstream of the point of depletions and downstream of the Ogilvy Ditch headgate. The F Street return (WDID 0302320) is located approximately 7.9 miles upstream of the point of depletions and upstream of the Ogilvy Ditch headgate. At times when the Ogilvy Ditch is calling, the Applicant must make replacements at or above the Ogilvy Ditch headgate. A transit loss may be assessed by the water commissioner for the delivery of such replacement water.

Loloff Section 4 Ditch

Loloff obtained a conditional water right in Division 1 Water Court case no. 1987CW153 for the diversion of 4 cfs through the Loloff Section 4 Ditch (WDID 0300754), with an appropriation date of March 15, 1987. The decreed point of diversion is in the SE¼ of the NW¼ of Section 4, Township 5 North, Range 65 West of the 6th P.M., approximately 700 feet South and 50 feet West of the north quarter corner of said Section 4. The decreed use of the water is the irrigation of 55 acres in the NW¼ of Section 4 and augmentation water. When in priority, the water is proposed to be diverted from the Loloff Section 4 Ditch into the Loloff Pit, and pumped back to the Cache la Poudre River for replacement purposes. It is the understanding of this office that the measurement structure for the Loloff Section 4 Ditch is in disrepair and easily submerged. **The measurement structure must be repaired to the satisfaction of the water commissioner and approved by the water commissioner prior to the use of the Loloff Section 4 Ditch to divert water, or no credit will be given for replacement water from this source.**

Loloff Reservoir

As of April 7, 2020, Loloff had stored 140.7 acre-feet of water in the lined Loloff Pit that was diverted under free river conditions with the knowledge and approval of the water commissioner. Water was diverted into storage 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, which is associated with Loloff Construction, Inc., allowing for the use of the Ogilvy Ditch for this purpose was provided with the SWSP request and is attached to this approval. 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 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. As quantified in the past, 50% of the releases will be deemed to enter the river system as surface water, while the other 50% will be lagged back to the river system using the AWAS parameters previously described. For this plan period, you have projected that a total of 140 acre-feet of previously stored free river water will be pumped from the Loloff Pit, of which 70 acre-feet will return to the river as surface flows, and the remaining 70 acre-feet that will return to the river as subsurface return flows will result in 45.06 acre-feet of accretions at the river during this plan period.

Water Balance

A water balance showing the lagged depletions and projected replacements for this plan period is provided in the attached Table 2.

Long Term Augmentation

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 groundwater. The DRMS letter identifies four approaches to satisfy this requirement.

The approved reclamation plan for this site is reclamation to a lined reservoir with a surface area of approximately 46.94 acres. As previously indicated, the liner at the Loloff Pit has been approved by the State Engineer's office, and the pit is now classified as a lined reservoir; however, ongoing depletions from past operations at the site are still impacting the river. In accordance with approach no. 4, you have provided an affidavit dated May 30, 2014 that dedicates the Applicant's one share of the Greeley Irrigation Company (certificate no. 3391) and one share of the New Cache La Poudre Irrigation Company (certificate no. 4635) 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. For the purposes of this SWSP, this affidavit 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.

Conditions of Approval

I hereby approve the proposed substitute water supply plan 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 January 1, 2020 through March 31, 2021, unless otherwise revoked or superseded by decree. Any renewal request must be submitted to this office with the statutory fee (currently $257) no later than February 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. 77467-F was obtained for the use and exposed groundwater surface at the site in accordance with sections 37-90-137(2) and (11), C.R.S. In accordance with the State Engineer's *General Guidelines for Substitute Supply Plans for Sand and Gravel Pits,* an Abandonment Report must be filed for this well permit as the gravel pit has been lined and no longer exposes groundwater or constitutes a "well".

3. This SWSP does not authorize the exposure of any groundwater or any consumptive use of groundwater at the site. Any use of groundwater at the Loloff Pit must first be approved by this office through an amendment to this SWSP.
4. Replacement of lagged depletions shall continue until there is no longer an effect on stream flow. **It is recommended that the applicant revise the modeling of lagged depletions by switching to an alluvial aquifer method for future renewals of this SWSP in order to reduce the number of years that the remaining lagged depletions will extend out.** The total amount of depletions to be replaced under the alluvial aquifer method will need to equal the total amount of remaining depletions calculated using the SDF method.
5. 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. The Applicant is required to coordinate with the water commissioner the delivery location of replacement water to ensure out-of-priority depletions are adequately replaced to prevent injury to other water rights.
6. 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.
7. The replacement water that is the subject of this plan cannot be sold or leased to any other entity. As a condition of subsequent renewals of this substitute water supply plan, the replacement water must be appurtenant to this site unless a plan for augmentation is obtained.
8. All deliveries of water to storage and deliveries of replacement water shall be measured in a manner acceptable to the division engineer. The Applicant shall install and maintain measuring devices as required by the division engineer for operation of this SWSP. **No credit will be given for replacement water diverted through the Loloff Section 4 Ditch unless the measurement structure is first repaired and approved by the water commissioner.**
9. **Any SWSP renewal request should propose adequate terms and conditions to assure that an expansion of use will not occur under the GIC system if the Applicant reaches their annual volumetric limit and ceases diverting water or decides not to take delivery of their one GIC share.**
10. Conveyance loss for delivery of augmentation water is subject to assessment and modification as determined by the division engineer.
11. 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.
12. 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@state.co.us) on a monthly basis or other interval acceptable to both of them. Submitted accounting shall conform to the attached Division One Administration Protocol *"Augmentation Plan Accounting, Division One – South Platte Basin"*.
13. The Applicant shall perform an inspection and provide verification that the land associated

with the changed water right in this SWSP has been removed from irrigation during the term of this SWSP. Verification of dry-up must be in the form of an affidavit signed by an individual with personal knowledge of the dry-up for the entire irrigation season for each parcel of land associated with the change of water right in this SWSP. In accordance with the attached *Administration Protocol - Dry-Up of Irrigated Land*, the Applicant shall provide an affidavit to the water commissioner and division engineer that confirms dry-up during the 2020 irrigation season **by October 31, 2020**. In addition, the Applicant shall provide a written notification to the water commissioner and division engineer **by April 1, 2021** identifying the lands to be dried-up for the 2021 irrigation season. A GIS shapefile outlining the dry-up must accompany each affidavit and be emailed to DNR_Div1Accounting@state.co.us for each notification. The shapefile shall include the pending court case number, the WDID of the plan, a delineation of the dried-up land, the acreage of dry-up, and any accompanying metadata. In addition, the datum must be NAD83 and the UTM projection must be Zone 13.

The historical consumptive use attributed to the changed surface water right(s) under this SWSP shall not include groundwater contributions. As a result, the historical consumptive use ("HCU") credit calculated for the subject water right to be changed by this SWSP shall be reduced by any ongoing sub-irrigation from groundwater. In order to ensure the required dry-up conditions exist during the approval period of this SWSP, and to ensure no sub-irrigation from groundwater is occurring, the Applicant shall provide records of monthly monitoring of depth to groundwater for all land associated with the change of water right in this SWSP. Information regarding depth to groundwater may be provided using existing irrigation wells, existing or new monitoring wells, or piezometers located on the dried-up fields. The Applicant may utilize wells or piezometers located within ¼ mile of each field provided that the Applicant can demonstrate the depth to groundwater information available off-site is representative of the depth to groundwater on the dried-up land. The Applicant shall modify its accounting to reduce the amount of the calculated HCU that may be claimed in this SWSP according to the table below. Measurements taken at the start of each month will determine the necessary reduction in credit to be applied during the following month. The Applicant may use another methodology upon review and prior approval by the state engineer and division engineer. (Construction of monitoring holes/wells, or piezometers requires that permits or notices be obtained as described in Table 1 of the Water Well Construction Rules.)

Depth to Groundwater (Feet)	Percent Reduction in Calculated HCU[1]	
	Native Grass	Alfalfa
1	85%	100%
2	50%	90%
3	30%	75%
4	20%	50%
5	15%	35%
6	10%	20%
7	5%	15%
8	0%	10%

[1]Adapted from *EVAPOTRANSPIRATION AND AGRONOMIC RESPONSES IN FORMERLY IRRIGATED MOUNTAIN MEADOWS, South Park, Colorado*, March 1, 1990; Revised September 1, 1991

14. 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 or be revoked prior to replacement of all remaining lagged depletions, the Applicant will be subject to enforcement.
15. 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 whether the substitute supply is of a quality to meet requirements of use to senior appropriators. As such, water quality data or analysis may be requested at any time to determine if the water quality is appropriate for downstream water users.
16. 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: Map 2
Tables 1 & 2
Ogilvy/Mill Iron Mining Agreement
Share Dedication Affidavit
DRMS April 30, 2010 letter
Augmentation Plan Accounting, Division One - South Platte River
Dry-up of Irrigated Land, Division One - South Platte River

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

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

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

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

Map 2. Dewatering Seep and Pond

Loloff Pit
GIC Yields and Return Flow Obligations
Table 1

Williams and Weiss Consulting, LLC

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

	Direct Flow portion		return flows			Fossil Creek portion		return flows			Net
	diversion	c.u.	surf	sub	balance	diversion	c.u.	surf	sub	balance	Balance
JAN	0.00	0.00	0.00	0.31	-0.31	0.00	0.00	0.00	0.00	0.00	-0.31
FEB	0.00	0.00	0.00	0.29	-0.29	0.00	0.00	0.00	0.00	0.00	-0.29
MAR	0.00	0.00	0.00	0.27	-0.27	0.00	0.00	0.00	0.00	0.00	-0.28
APR	1.12	0.58	0.26	0.26	0.59	0.06	0.04	0.01	0.00	0.05	0.64
MAY	2.98	1.55	0.71	0.31	1.96	0.16	0.09	0.03	0.00	0.13	2.09
JUN	3.16	1.65	0.75	0.36	2.05	0.17	0.10	0.03	0.00	0.14	2.19
JUL	4.09	2.14	0.97	0.40	2.73	0.22	0.13	0.04	0.00	0.17	2.90
AUG	3.53	1.84	0.84	0.41	2.28	0.19	0.11	0.04	0.00	0.15	2.43
SEP	2.23	1.17	0.53	0.41	1.29	0.12	0.07	0.02	0.00	0.09	1.39
OCT	1.49	0.78	0.35	0.40	0.74	0.08	0.05	0.02	0.00	0.06	0.80
NOV	0.00	0.00	0.00	0.36	-0.36	0.00	0.00	0.00	0.00	0.00	-0.36
DEC	0.00	0.00	0.00	0.34	-0.34	0.00	0.00	0.00	0.00	0.00	-0.34
TOTAL	18.60	9.71	4.41	4.12	10.07	1.00	0.59	0.20	0.01	0.79	10.86

1) historical consumptive use on direct flow component of GIC share is 52.2%
2) historical consumptive use on Fossil Creek component of GIC share is 59.0%
3) monthly GIC return flows calculated using Appendix A-2 of 96-CW-658
4) subsurface return flows based upon 5-year average delivery (2015-2019)

GIC direct	17.18	Fossil Crk	0.06

from Appendix A-2 of Poudre Prairie Decree
RETURN FLOW OBLIGATION Factors

	DIRECT FLOW WATER		FOSSIL CREEK WATER	
	surface	sub	surface	sub
JAN	0.237	0.018	0.201	0.017
FEB	0.237	0.017	0.201	0.016
MAR	0.237	0.016	0.201	0.015
APR	0.237	0.015	0.201	0.014
MAY	0.237	0.018	0.201	0.013
JUN	0.237	0.021	0.201	0.012
JUL	0.237	0.023	0.201	0.015
AUG	0.237	0.024	0.201	0.024
SEP	0.237	0.024	0.201	0.025
OCT	0.237	0.023	0.201	0.021
NOV	0.237	0.021	0.201	0.02
DEC	0.237	0.02	0.201	0.018

	Per Share Delivery	
	GIC direct	Fossil Crk
2015	17.10	0.00
2016	16.07	0.00
2017	17.87	0.00
2018	17.98	0.28
2019	16.88	0.00
5-yr Avg	17.18	0.06

2020 Dewatering Impacts: Loloff 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

Month	Monthly Dewatering Depletions (ac-ft)	% of Month under Call	Depletions Requiring Augmenting (ac-ft)	Monthly Loloff Pit Pumping (ac-ft)	Surface Returns to River (ac-ft)	Lagged Returns to River (ac-ft)	GIC No3 Credits (ac-ft)	Supplemental Credits (ac-ft)	Total Replacements (ac-ft)	Water Balance (ac-ft)
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
Jan-20	12.09	0%	0	0	0	0	0.00	0.00	0.00	0.00
Feb-20	11.64	0%	0	0	0	0	0.00	0.00	0.00	0.00
Mar-20	11.22	13%	1.45	0	0	0	0.00	0.00	0.00	-1.45
Apr-20	10.84	80%	8.67	19.00	9.50	1.45	0.64	0.00	11.59	2.92
May-20	10.48	100%	10.48	14.00	7.00	3.53	2.09	0.00	12.62	2.14
Jun-20	10.13	100%	10.13	13.00	6.50	3.91	2.19	0.00	12.60	2.47
Jul-20	9.80	100%	9.8	12.00	6.00	4.05	2.90	0.00	12.95	3.15
Aug-20	9.51	100%	9.51	12.00	6.00	4.12	2.43	0.00	12.55	3.04
Sep-20	9.21	100%	9.21	11.00	5.50	4.14	1.39	0.00	11.03	1.82
Oct-20	8.95	100%	8.95	11.00	5.50	4.12	0.80	0.00	10.42	1.47
Nov-20	8.69	100%	8.69	10.00	5.00	4.07	-0.36	0.00	8.71	0.02
Dec-20	8.44	100%	8.44	10.00	5.00	3.99	-0.34	0.00	8.65	0.21
Jan-21	8.20	100%	8.2	10.00	5.00	3.97	-0.31	0.00	8.66	0.46
Feb-21	7.99	100%	7.99	9.00	4.50	3.91	-0.29	0.00	8.12	0.13
Mar-21	7.77	100%	7.77	9.00	4.50	3.80	-0.28	0.00	8.02	0.25
TOTAL	144.96		109.29	140.00	70.00	45.06	10.86	0.00	125.92	16.63

Notes:
(A) Lagged depletions from historical dewatering operations
(B) % of month under call
(C) col.B x col.C
(D) Measured pumping from Loloff Pit
(E) 50% of col.D
(F) 50% of col.D lagged using AWAS
(G) GIC no.3 Credits
(H) Supplemental water supply if needed
(I) E + F + G + H
(J) Water Balance I - C

Exhibit 2. 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

Dedication Of Water Rights to the

Loloff Pit Permanent Water Supply Plan

I Don Loloff President of Loloff Construction Inc. which owns 1 share of the Greeley Irrigation Company evidenced by Certificate No 3391 one share of the New Cache La Pourde Irrigation Company evidenced by Certificate No 4635, hereby affirm that the two shares will be dedicated solely to the Loloff Pit Permanent Water Supply Plan for as long as there are depletion's at this gravel pit or until such time as another replacement source is obtained. The 2 shares will not be sold or traded to others during the term of this dedication.

Signed Don Loloff

Date May 30, 2014

State of Colorado

County of Weld

The foregoing instrument was acknowledged before me this 30 day of May 2014
By Don Loloff and _____

My commission expires: 6/10/2017

Witness my hand and official seal:

Erin Davis
Notary Public

STATE OF COLORADO

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

COLORADO DIVISION OF RECLAMATION MINING & SAFETY

Bill Ritter, Jr.
Governor

James B. Martin
Executive Director

Loretta E. Piñeda
Director

April 30, 2010

Loloff Construction, Inc.
P.O. Box 518
206 Hill St.
Kersey, CO 806440000

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: M1985112 Loloff Mine

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
Dry-Up of Irrigated Land
Division One – South Platte River

As required by either a decreed change of water rights or a substitute water supply plan, a source of irrigation water may be either permanently or temporarily removed from a parcel of land in order to make the historical consumptive use portion of that water supply available for other uses, typically augmentation. This protocol addresses the documentation required to administer the effective "dry-up". To the extent that one or more of the following directives are in direct contradiction with a decree of the court, the terms of the decree must be followed.

Permanent Dry-up Covenant

1. Must be decreed by the court.
2. Must be filed with clerk and recorder's office for the county wherein the land is located.
3. Must email a GIS shapefile to Div1Accounting@state.co.us that includes case number, WDID, and total acreage permanently dried-up, along with any accompanying metadata. The shapefile must be in NAD83 datum, UTM projection, Zone 13North.
4. Must address the issue of noxious weeds as required by §37-92-305(4.5)(a), C.R.S. and/or other county or local ordinances. (DWR is not authorized to administer the issue of noxious weeds; this statement is, therefore, simply informational).

Temporary Dry-up Agreement

1. May be made for a term that is not less than one irrigation season.
2. Unless otherwise stated in the approved SWSP, a written notification, reporting land of intended dry-up, must be submitted prior to April 1 of each irrigation season to the division engineer, water commissioner and Div1Accounting@state.co.us. Along with the written notification, a GIS shapefile reflecting the land of intended dry-up must be submitted. The shapefile must be emailed to Div1Accounting@state.co.us. The shapefile shall include case number, WDID, and acreage of dry-up, along with any accompanying metadata. The shapefile must be in NAD83 datum, UTM projection, Zone 13North.
3. Unless otherwise stated in the approved SWSP, a written affidavit, affirming land actually dried up, must be submitted prior to October 31 of each irrigation season to the division engineer, water commissioner and Div1Accounting@state.co.us. Along with the written affidavit, a GIS shapefile, reflecting the dried up acreage proclaimed in the affidavit, must be submitted. If the submitted affidavit indicates that the intended and actual dry-up acreages are identical, then no GIS shapefile is required. The shapefile must be emailed to Div1Accounting@state.co.us. The shapefile shall include case number, WDID, and acreage of dry-up, along with any accompanying metadata. The shapefile must be in NAD83 datum, UTM projection, Zone 13North.
4. Once written notice has been made to the division engineer and/or water commissioner, the dry-up requirement is irrevocable during the current irrigation season regardless of whether or not the water associated with the historical consumptive use is actually used.