



STATE OF
COLORADO

Ebert - DNR, Jared <jared.ebert@state.co.us>

SWSP Approval for the Loloff Pit (Plan ID 3615, WDID 0302526)

Brucker - DNR, Sarah <sarah.brucker@state.co.us>

Mon, Mar 11, 2019 at 11:16 AM

To: Todd Williams <tlwwater@msn.com>

Cc: Michael Hein <michael.hein@state.co.us>, Mark Simpson <mark.simpson@state.co.us>, Louis Flink <louis.flink@state.co.us>, Jared Ebert - DNR <jared.ebert@state.co.us>

Please find attached the SWSP approval for the Timnath-Connell Pit, M-1999-050 (Plan ID 3615, WDID 0302526). Should you have any questions, feel free to contact me at this office.

Sarah Brucker, P.E.
Water Resources Engineer



COLORADO
Division of Water Resources
Department of Natural Resources

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Approval 3615.pdf

3660K



COLORADO
Division of Water Resources
Department of Natural Resources

March 11, 2019

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

**Re: Timnath-Connell Substitute Water Supply Plan (WDID 0302526, Plan ID 3615)
Timnath-Connell Pit, DRMS File No. M-1999-050 (WDID 0303018)
Section 3, T6N, R68W, 6th P.M.
Water Division 1, Water District 3, Larimer County**

Approval Period: April 1, 2019 through March 31, 2020
Contact Information for Mr. Williams: 303-653-3940; tlwwater@msn.com

Dear Mr. Williams:

We have received your letter dated February 12, 2019 in which you request renewal of the above referenced substitute water supply plan ("SWSP") on behalf of Connell Resources, Inc ("Applicant") in accordance with § 37-90-137(11), C.R.S. to cover depletions caused by gravel mining operations at the Timnath-Connell Pit (M-1999-050). The required renewal fee of \$257 has been submitted (receipt no. 33690602). This plan was most recently approved on March 16, 2018 for operations through March 31, 2019.

SWSP Operation

The Timnath Pit is located in Section 3, Township 6 North, Range 68 West of the 6th P.M., south of the town of Timnath and west of the Poudre River. Mining operations at the Timnath-Connell Pit during this plan period will consist of recycling asphalt and concrete material, limited washing of materials brought to the site from other sand and gravel mining operations, dust control, and reclamation activities. The reclamation activity proposed to occur at the Timnath-Connell Pit during this plan period is limited to backfilling of previously mined areas. No additional mining of sand and gravel is proposed to occur at this site during this plan period. Depletions at the site during this plan period will be limited to evaporation and water used for material washing and dust control purposes. Replacement of depletions at the site will be made via delivery of Box Elder Ditch Company shares to an on-site recharge pond. The mining activities at the site are projected to continue for at least five years. The final reclamation plan for the site calls for a lined reservoir for the area west of the Box Elder Ditch and backfilling of the mined area to the east of the Box Elder Ditch. An 8.10-acre recharge pond and a 2.74-acre unlined pond will remain on the site after reclamation.



Depletions

There are 6.03 acres of exposed groundwater at the site and an 8.10-acre recharge pond. Groundwater is exposed at the site in 0.15 acres of dewatering trenches, a 0.53-acre dewatering sump, a 2.61-acre pond used to provide water for dust control purposes, and a 2.74-acre pond (see Map 1). Evaporative depletions were calculated using a gross annual evaporation of 39 inches, with a credit of 8.16 inches for effective precipitation [based on an average annual precipitation for the Northern Colorado Water Conservancy District's Loveland (2006-2015) and East Fort Collins (1994-2015) weather stations]. Net evaporative depletions are calculated as 20.82 acre-feet per year for the 8.10-acre recharge pond and 15.50 acre-feet per year for the remaining 6.03 acres of exposed groundwater (see attached Tables 1 and 2). The evaporative loss from the recharge pond is deducted from the deliveries to the recharge pond in the given month prior to determining the net positive accretion or depletion from the pond and is thus not included in the total net depletions covered in this SWSP.

The Applicant plans to wash 15,000 tons of material at the Timnath-Connell Pit during each of the months of April and May 2019. The water retained by the washed product is assumed to be 2% by weight, or a total of 0.44 acre-feet for 30,000 tons of washed material.

It is anticipated that 0.80 acre-feet of water will be used for on-site dust control during this plan period, based on an estimate of 5 truckloads of 4,000 gallons of water per month. Water used for dust control purposes is assumed to be 100% consumed.

The Timnath-Connell Pit will not be mined for sand and gravel during this approval period, therefore there will be no water lost in mined product.

The total annual consumptive use from evaporation (excluding the recharge pond) and operational uses at the site is 16.74 acre-feet (see attached Table 4). The Alluvial Water Accounting System (AWAS) stream depletion model, developed by the Integrated Decision Support Group, was used to determine the lagged depletions from the Timnath-Connell Pit 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:

- Distance from the centroid of the 6.03 acres to the river (X) = 2,218 ft
- Alluvial aquifer width (W) = 5,300 ft
- Specific yield (S) = 0.2
- Transmissivity (T) = 50,000 (gpd/ft)

Lagged stream depletions are estimated to total 16.61 acre-feet during this plan period, as shown on the attached Table 4.

The Applicant has continuously dewatered the Timnath-Connell Pit since 1999. Water pumped for dewatering is discharged into the adjacent recharge pond. This diversion into the pond is not a part of the metered Box Elder Ditch Shares that are also discharged into the recharge pond. The dewatering depletions are lagged to the river using the same parameters as the other lagged depletions from the Timnath-Connell Pit as described above. The dewatering accretions are lagged to the river using the same parameters as the site depletions with the exception of using a distance (X) from the centroid of the recharge pond to the river of 3,500 ft. This dewatering operation creates lagged accretions that mimic the lagged depletions. Thus at the cessation of dewatering the only depletion that would impact the river is that which is attributable to the "first fill" of the pit. The Applicant intends to line the pit when mining activity is complete thereby eliminating the depletion caused by the "first fill". Should dewatering operations cease prior to the pit obtaining a

liner approval from the Division Engineer, the Applicant must address the lagged depletions due to the “first fill.”

Replacements

Connell Resources, Inc. owns a total of 4.0 shares in the Box Elder Ditch Company (“BEDC”) (WDID 0300926) out of 64 outstanding shares, representing 6.25% of the share ownership. The Applicant’s 4.0 shares were historically used to irrigate the property known as the John Weitzel Farm, which is the site of the Timnath-Connell Pit. The primary source of replacement water for this SWSP will be from recharge of 2.5 of these BEDC shares. The shares will be diverted into a recharge pit (WDID 0302003) located on the Timnath-Connell site. The recharge pit was constructed in an area of the mining site that was previously excavated for sand and gravel mining. The remaining 1.5 BEDC shares not used for recharge will continue to be used to irrigate the portion of the John Weitzel Farm still in agricultural production.

The pro-rata diversions available at the farm headgate for the 4.0 shares used on the John Weitzel property were estimated to total 368.86 acre-feet per year, based on the average headgate diversions for the Box Elder Ditch for the years 1950 to 2017, assuming a 10% ditch loss. The amount of water available for crop consumption was estimated to be 202.87 acre-feet, based on 55% field efficiency for flood irrigation. The potential crop consumptive use was calculated as 170.02 acre-feet per year, using the SPCU Model. Historic consumptive use for the 4.0 shares was determined as the lesser of the water available for crop consumption or potential crop consumptive use if a full water supply was available on a monthly basis, and was calculated as 169.08 acre-feet per year. Total return flow obligations from the use of the 4.0 shares were calculated as 199.78 acre-feet per year by subtracting the historical consumptive use from the pro-rata amount of diversions available at the farm headgate. One-third of the return flows (66.59 acre-feet) were assumed to occur as surface return flows and the remaining two-thirds (133.19 acre-feet) were assumed to occur as subsurface return flows. Subsurface return flows were lagged to the river using the AWAS stream depletion model with the following parameters:

- Distance from the centroid of the irrigated property to the river (X) = 3,300 ft
- Alluvial aquifer width (W) = 5,000 ft
- Specific yield (S) = 0.2
- Transmissivity (T) = 50,000 (gpd/ft)

The monthly net accretion/depletion for the 4.0 BEDC shares were calculated as the monthly diversions available at the farm headgate, minus the surface return flow obligation and lagged subsurface return flow obligation for that month. The monthly net accretion/depletion for the 2.5 BEDC shares to be delivered to recharge were calculated by pro-rating the monthly net accretion/depletion for the 4.0 BEDC shares.

The expected volume of water available for diversion into the recharge pond for the subject 2.5 shares is 230.54 acre-feet per year. This figure represents the pro-rata average headgate diversion less a 10% ditch loss. The pro-rata historical consumptive use credit for the 2.5 shares is estimated to total 105.67 acre-feet for this plan period and the pro-rata return flow obligation for the 2.5 shares is estimated to be 124.86 acre-feet. As indicated above, the evaporation losses from the recharge pond are estimated to total 20.82 acre-feet per year, resulting in a net amount of 209.72 acre-feet of water delivered to recharge.

The lagged accretions from the Timnath-Connell recharge pond were estimated by the Applicant's consultant using the AWAS stream depletion model with the following parameters:

- Distance from the recharge pond centroid to the river (X) = 3,500 ft
- Alluvial aquifer width (W) = 5,300 ft
- Specific yield (S) = 0.2
- Transmissivity (T) = 50,000 (gpd/ft)

The lagged accretions to the Cache la Poudre River are projected to total 233.82 acre-feet during this plan period. This amount includes deliveries to recharge from previous years. Pursuant to previously submitted accounting, 286.54 acre-feet were diverted into the recharge site during the 2012 irrigation season, 257.27 acre-feet were diverted into the recharge site during the 2013 irrigation season, 502.69 acre-feet were diverted into the recharge site during the 2014 irrigation season, 406.81 were diverted into the recharge site during the 2015 irrigation season, 240.10 were diverted into the recharge site during the 2016 irrigation season, 317.95 acre-feet were diverted into the recharge site during the 2017 irrigation season, and 229.69 acre-feet were diverted into the recharge site during the 2018 irrigation season. Additionally, in 2014 and 2015 long periods of no call on the Cache La Poudre River allowed for a considerable amount of free river water to be delivered into the recharge pond beyond the historic yields of the 2.5 Box Elder shares. The summer and winter return flow obligations from the use of the 2.5 Box Elder Ditch shares will be maintained under this substitute water supply plan. A monthly breakdown of the stream depletions and accretions are shown in the attached Table 8. As shown in column (H), the net recharge accretion credits from the Box Elder Ditch shares are sufficient to cover both the return flow obligations from the use of the shares and the depletions from operations at the Timnath-Connell Pit.

Long Term Augmentation

The final reclamation plan for this site includes both a lined reservoir and unlined ponds for the portion of the site west of the Box Elder Ditch, while all of the disturbed areas to the east of the Box Elder Ditch will be backfilled. The successful completion of a lined reservoir will eliminate long term depletions that would require an augmentation plan for this portion of the site. After completion and approval of the reservoir liner this area must continue to be covered by a valid SWSP until the lagged depletions from mining operations are no longer impacting the river.

The existing 2.74-acre unlined pond in addition to the 8.10-acre recharge pond will remain on the site after final reclamation. The creation of a permanent unlined pond will result in long term evaporation of groundwater which requires a long term augmentation plan. The Applicant is required to obtain a water court approved augmentation plan to cover the long term depletions associated with such groundwater ponds.

In accordance with the letter dated April 30, 2010 (see 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 required 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 nos. 1 and 3 identified in that letter, the applicant holds a bond through DRMS in the amount of \$510,198. A site inspection on August 31, 2012 by DRMS confirmed the bond is sufficient to complete the reclamation plan.

Conditions of Approval

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

1. This plan is approved with an effective date of April 1, 2019 and shall be valid through March 31, 2020 unless otherwise revoked or superseded by a decree. If this plan will not be made absolute by a water court action by the plan's expiration date, a renewal request must be submitted to this office with the statutory fee (currently \$257) no later than **February 1, 2020**. 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 53419-F has been obtained for the current use and exposed pond surface area of the gravel pit in accordance with § 37-90-137(2) and (11), C.R.S.
3. The total surface area of the groundwater exposed at the Timnath-Connell Pit (not including the recharge pond) must not exceed 6.03 acres, resulting in 15.50 acre-feet per year of evaporative loss.
4. The total amount of groundwater used for operational purposes at the Timnath-Connell Pit during this plan period shall not exceed 1.24 acre-feet (estimated as 0.44 water used for washing 30,000 tons of material and 0.8 acre-feet used for dust control purposes). No product shall be mined at the site during this plan period.
5. Total consumption at the Timnath-Connell Pit shall not exceed the aforementioned amounts unless an amendment is made to this plan.
6. Approval of this plan is for the purposes as stated herein. Any additional uses of this water must first be approved by this office. Any future additional historical consumptive use credit given (e.g., agricultural water transfer) for this site must consider all previous credits given.
7. All pumping for dust control purposes shall be measured in a manner acceptable to the division engineer.
8. All releases of replacement water must be sufficient to cover all out of priority depletions and be made under the direction and/or approval of the water commissioner. The replacement may be aggregated to maximize beneficial use. The water commissioner and/or division engineer shall determine the rate and timing of an aggregated release.
9. The water attributable to the 2.5 shares of the Box Elder Ditch Company must continue to be diverted in priority at the ditch and then measured into the Timnath-Connell recharge site. Adequate measuring devices acceptable to the water commissioner must be installed.
10. The Division of Water Resources will not acknowledge any recharge activity conducted without the knowledge of the water commissioner. The flow into the recharge site 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.
11. Water may be delivered to recharge only if the net impact of this plan is not negative. Water must first be delivered or exchanged to offset negative impacts of this plan before it may be diverted for recharge.
12. The replacement water which 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 until a plan for augmentation and/or liner approval is obtained for the entire site. All replacement water must be concurrent with depletions in quantity, timing, and locations.

13. Adequate accounting of depletions and replacements must be provided to the division engineer in Greeley (DNR_Div1Accounting@state.co.us) and the water commissioner (Mark.Simpson@state.co.us) on a monthly basis, or more frequent if required by the water commissioner. All amounts shall be in acre-feet.
14. The name, address, and phone number of the contact person who will be responsible for the operation and accounting of this plan must be provided on the accounting forms submitted to the division engineer and the water commissioner.
15. Applicant shall follow the Augmentation Plan Accounting, Dry-Up of Irrigated Land, and Recharge Administrative Protocols, or any other applicable protocols as referenced in the attached documents, for the operation of this SWSP.
16. Conveyance loss for delivery of augmentation water to is subject to assessment and modification as determined by the division engineer.
17. The amount and location of the dry-up of the irrigated acreage associated with the subject 2.5 shares of the Box Elder Ditch Company has been previously documented and approved by the division engineer and water commissioner (see attached Map 2).
18. 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 years prior to the completion of mining to include, but not be limited to, long-term evaporation losses. If a lined pond results after reclamation, replacement of lagged depletions shall continue until there is no longer an effect on stream flow. Granting of this plan does not imply approval by this office of any such court application(s).
19. The Timnath-Connell Pit has been continuously dewatered. Dewatering operations at this site create lagged accretions that mimic its lagged depletions due to the recharge of dewatering water. The Applicant intends to line the pit when mining activity is complete, and none of the currently dewatered areas will be within the unlined lakes after reclamation. Therefore the site should not experience water loss associated with a "first fill" that occurs when unlined gravel pits are allowed to fill with groundwater. The Applicant proposes that in accordance with the current dewatering plan, once dewatering at the site ceases, there will not be any post-pumping depletions that must be addressed.
20. If dewatering of the Timnath-Connell Pit were discontinued prior to the completion of a liner, the pit would fill creating additional depletions to the stream system and resulting in increased evaporation. Additionally, should an augmentation plan not be obtained for the unlined ponds, long term depletions to the stream system would result. To assure that additional or long term depletions to the river do not occur, a bond for \$510,198 for the lining or backfilling of the Timnath-Connell Pit was obtained in 1999 through DRMS. This bond was determined to be sufficient by DRMS during a site inspection on August 31, 2012.
21. 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 substitute water supply

plan 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

22. In accordance with amendments to § 25-8-202(7), C.R.S., and “Senate Bill 89-181 Rules and Regulations” adopted on February 4, 1992, the State Engineer shall determine whether the substitute supply is of a quality to meet requirements of use to which the senior appropriators receiving the substitute supply has normally been put. As such, water quality data or analysis may be requested at any time to determine if the requirement of use of the senior appropriator is met.
23. The decision of the state engineer shall have no precedential or evidentiary force, shall not create any presumptions, shift the burden of proof, or serve as a defense in any pending water court case or any other legal action that may be initiated concerning this plan. This decision shall not bind the state engineer to act in a similar manner in any other applications involving other plans, or in any proposed renewal of this plan, and shall not imply concurrence with any findings of fact or conclusions of law contained herein, or with the engineering methodologies used by the Applicant.

Should you have any questions or comments, please contact Michael Hein, Lead Assistant Division Engineer, in Greeley at 970-352-8712 or Sarah Brucker in Denver at 303-866-3581.

Sincerely,



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

Attachments: Maps 1 and 2
 Tables 1, 2, 4, and 8
 April 30, 2010 DRMS letter
 Accounting, Dry-Up, and Recharge Protocols

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

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

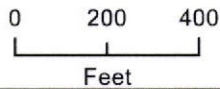
Jared Ebert, Division of Reclamation, Mining and Safety, Jared.Ebert@state.co.us

Timnath-Connell Pit Map #1

- Dewatering Trench
- Mining Permit Boundary
- Backfilled
- Constructed Impermeable Liner
- Pond

Background Imagery Source=
Quickbird Image acquired 6/22/2012

Scale: 1" = 400'



2/09/14

Fort Collins

Weld County

Larimer County

Project Location

Loveland

Greeley

T6N
R68W
Sec. 3

Poudre River

County Road 5

Box Elder Ditch

0.11 ac.

Source for
Dust Control

2.61 ac.

Distance to River
= 0.42 miles

0.04 ac.

0.53 ac.

8.10 ac.

2.74 ac.



West
Dewatering
Pump

East Dewatering
Pump

Kechter Road

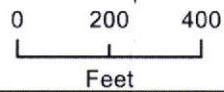
Sec. 10

Box Elder Dryup Acreage at Timnath-Connell Pit

-  Mining Permit Boundary
-  Historically Irrigated Lands, Dried-up as Part of Connell's Mining Operations

Background orthophoto contains a mosaic of images collected from 1988-1999.

Scale: 1" = 400'



2/10/13

Fort Collins



Weld County

Larimer County



Loveland

Project Location



Greeley

T6N
R68W
Sec. 3

Poudre River

Box Elder Ditch

91.3 ac.

22.8 ac.

County Road 5

25

Kechter Road

Sec. 10

Table 1

Timmath-Connell Pit
Connell Resources

Prepared by: Williams and Weiss Consulting, LLC
Date Revised: 2/12/2019

Evaporative Loss - Timmath-Connell Recharge Pond

Total Exposed Water Surface Area¹ = 8.1 acres

	2019												2020		Totals
	April	May	June	July	August	September	October	November	December	January	February	March			
Distribution of Annual Evaporation ²	0.09	0.12	0.15	0.15	0.14	0.10	0.07	0.04	0.03	0.03	0.035	0.055	1.00		
Pond Evaporation ³	3.51	4.68	5.66	5.85	5.27	3.90	2.73	1.56	1.17	1.17	1.37	2.15	39.00		
Effective Precipitation ⁴	1.12	1.73	0.90	0.91	0.67	0.92	0.69	0.28	0.17	0.16	0.21	0.39	8.16		
Net Pond Evap	0.20	0.25	0.40	0.41	0.38	0.25	0.17	0.11	0.08	0.08	0.10	0.15	2.57		
Net Evaporation	1.61	1.99	3.21	3.34	3.10	2.01	1.38	0.86	0.67	0.68	0.78	1.18	20.82		

Notes:

¹ See Map 1 for the delineation of the de-watering pond exposed water surface area.

² Distribution of Annual Evaporation per DWR Guidelines for gravel pits at elevations below 6,500 feet.

³ Annual evaporation rate are taken from NOAA Technical Report NWS 33.

⁴ Effective Precipitation = 0.7 * Avg. Precip.. Avg. Monthly Precip. = averaging monthly data from the Northern Colorado Water Conservancy District's Loveland (2006 - 2015) and East Ft. Collins (1994 - 2015) weather stations.

Table 2

Timnath-Connell Pit
Connell Resources

Prepared by: Williams and Weiss Consulting, LLC
Date Revised: 2/12/2019

Evaporative Losses within Mining Area

Total Exposed Water Surface Area¹ = 6.03 acres

	2019												2020			Totals
	April	May	June	July	August	September	October	November	December	January	February	March				
Distribution of Annual Evaporation ²	0.09	0.12	0.15	0.15	0.14	0.10	0.07	0.04	0.03	0.03	0.035	0.055				1.00
Pond Evaporation ³	3.51	4.68	5.66	5.85	5.27	3.90	2.73	1.56	1.17	1.17	1.37	2.15				39.00
Effective Precipitation ⁴	1.12	1.73	0.90	0.91	0.67	0.92	0.69	0.28	0.17	0.16	0.21	0.39				8.16
Net Pond Evap	0.20	0.25	0.40	0.41	0.38	0.25	0.17	0.11	0.08	0.08	0.10	0.15				2.57
Net Evaporation	1.20	1.48	2.39	2.48	2.31	1.50	1.02	0.64	0.50	0.51	0.58	0.88				15.50
acre-feet																

Notes:

¹ See Map 1 for the delineation of the de-watering pond exposed water surface area.

² Distribution of Annual Evaporation per DWR Guidelines for gravel pits at elevations below 6,500 feet.

³ Annual evaporation rate are taken from NOAA Technical Report NWS 33.

⁴ Effective Precipitation = 0.7 * Avg. Precip. Avg. Monthly Precip. = averaging monthly data from the Northern Colorado Water Conservancy District's Loveland (2006 - 2015) and East Ft. Collins (1994 - 2015) weather stations.

Table No. 4

**Timnath-Connell Pit
Connell Resources**

Prepared by: Williams and Weiss Consulting, LLC
Date Revised: 2/12/2019

Total Losses - Evaporative and Operational Losses and Lagged Depletions

Month	Evaporative Losses ¹ (ac-ft)	Operational Losses ² (ac-ft)	Total Consumptive Use ³ (ac-ft)	Lagged Stream Depletions ⁴ (ac-ft)
Apr-19	1.20	0.29	1.49	-1.13
May-19	1.48	0.29	1.77	-1.23
Jun-19	2.39	0.07	2.46	-1.36
Jul-19	2.48	0.07	2.55	-1.55
Aug-19	2.31	0.07	2.38	-1.68
Sep-19	1.50	0.07	1.56	-1.73
Oct-19	1.02	0.07	1.09	-1.63
Nov-19	0.64	0.07	0.71	-1.49
Dec-19	0.50	0.07	0.57	-1.34
Jan-20	0.51	0.07	0.57	-1.22
Feb-20	0.58	0.07	0.65	-1.14
Mar-20	0.88	0.07	0.95	-1.11
Total	15.50	1.24	16.74	-16.61

¹Evaporative losses are calculated in Table 2.

²Operational losses are calculated in Table 3.

³Total consumptive use is total of evaporative and operational losses.

⁴Lagged stream depletions are calculated using the AWAS stream where X = 2218 ft, W = 5,300 ft, S = 0.2, T = 50,000 gpd/ft. Lagged depletions include lagged depletions from previous years hitting the Poudre River during the renewal period.

Table No. 8

Connel Resources, Inc.
Timnath-Connell Pit SWSP

Prepared by: Williams and Weiss Consulting, LLC
Date Revised: 2/12/2019

Water Balance for CRI's SWSP

Month	Farm Headgate Diversions into CRI Recharge Pond (acre-feet) (A)	Evaporative Loss From Recharge Pond (acre-feet) (B)	Net Recharge (acre-feet) (C)	Lagged Timing of Net Recharge (acre-feet) (D)	Summer Return Flow Component (acre-feet) (E)	Winter Return Flow Component (acre-feet) (F)	Timnath-Connell Lagged Depletions (acre-feet) (G)	Monthly Excess or Deficit Realized at River (acre-feet) (H)	Monthly Supplies Leased from Ft. Collins (acre-feet) (I)	Total Monthly Excess or Deficit Realized at River (acre-feet) (J)
Apr-15	34.91	1.32	33.59	25.19		6.35	1.07	17.77	0.00	17.77
May-15	78.44	2.01	76.43	25.91	12.47		1.12	12.32	0.00	12.32
Jun-15	79.95	3.01	76.94	30.53	12.84		1.25	16.44	0.00	16.44
Jul-15	46.12	3.20	42.92	35.41	16.72		1.44	17.25	0.00	17.25
Aug-15	57.93	2.89	55.04	37.08	14.95		1.59	20.54	0.00	20.54
Sep-15	22.77	2.00	20.77	37.90	12.45		1.63	23.82	0.00	23.82
Oct-15	35.47	1.29	34.18	36.79		10.58	1.55	24.66	0.00	24.66
Nov-15	51.23	0.81	50.42	35.96		8.74	1.41	25.81	0.00	25.81
Dec-15	0.00	0.62	-0.62	36.52		7.73	1.27	27.52	0.00	27.52
Jan-16	0.00	0.63	-0.63	34.01		7.00	1.13	25.88	0.00	25.88
Feb-16	0.00	0.76	-0.76	30.24		6.34	0.97	22.93	0.00	22.93
Mar-16	0.00	0.98	-0.98	27.10		5.87	0.85	20.38	0.00	20.38
Year-1 Total	406.81	19.52	387.29	392.64	69.43	52.61	15.28	255.32	0.00	255.32
Apr-16	0.00	1.61	-1.61	24.44		6.42		18.02	0.00	18.02
May-16	12.36	1.99	10.37	22.21	12.48		1.13	8.60	0.00	8.60
Jun-16	78.63	3.21	75.42	21.59	12.80		1.25	7.54	0.00	7.54
Jul-16	75.75	3.34	72.41	25.89	16.66		1.46	7.77	0.00	7.77
Aug-16	50.20	3.10	47.09	31.06	15.00		1.62	14.44	0.00	14.44
Sep-16	23.17	2.01	21.17	33.14	12.62		1.67	18.85	0.00	18.85
Oct-16	0.00	1.38	-1.38	31.98		10.80	1.58	19.60	0.00	19.60
Nov-16	0.00	0.86	-0.86	28.66		8.77	1.44	18.45	0.00	18.45
Dec-16	0.00	0.67	-0.67	25.33		7.77	1.30	16.26	0.00	16.26
Jan-17	0.00	0.68	-0.68	22.69		7.03	1.18	14.48	0.00	14.48
Feb-17	0.00	0.78	-0.78	20.50		6.37	1.11	13.02	0.00	13.02
Mar-17	0.00	1.18	-1.18	18.59		5.90	1.08	11.61	0.00	11.61
Year-2 Total	240.11	20.82	219.29	306.08	69.57	53.06	14.82	168.63	0.00	168.63
Apr-17	0.00	1.61	-1.61	16.86		6.42	1.10	9.34	0.00	9.34
May-17	12.36	1.99	10.37	15.36	12.48		1.17	1.71	0.00	1.71
Jun-17	98.79	3.21	95.58	15.57	12.80		1.28	1.49	0.00	1.49
Jul-17	60.28	3.34	56.94	21.67	16.66		1.49	3.52	0.00	3.52
Aug-17	50.36	3.10	47.26	26.67	15.00		1.64	10.03	0.00	10.03
Sep-17	23.17	2.01	21.16	28.58	12.62		1.69	14.27	0.00	14.27
Oct-17	72.99	1.38	71.61	28.42		10.80	1.60	16.02	0.00	16.02
Nov-17	0.00	0.86	-0.86	30.53		8.77	1.46	20.30	0.00	20.30
Dec-17	0.00	0.67	-0.67	29.00		7.77	1.32	19.91	0.00	19.91
Jan-18	0.00	0.68	-0.68	25.48		7.03	1.20	17.25	0.00	17.25
Feb-18	0.00	0.78	-0.78	22.61		6.37	1.11	15.13	0.00	15.13
Mar-18	0.00	1.18	-1.18	20.31		5.90	1.07	13.34	0.00	13.34
Year-3 Total	317.95	20.82	297.13	281.06	69.57	53.06	16.13	142.30	0.00	142.30
Apr-18	4.62	1.61	3.01	18.37		6.65	1.09	10.63	0.00	10.63
May-18	29.35	1.99	27.36	17.16	12.38		1.16	3.62	0.00	3.62
Jun-18	42.27	3.21	39.06	18.01	12.87		1.28	3.86	0.00	3.86
Jul-18	68.83	3.34	65.49	20.45	16.65		1.48	2.32	0.00	2.32
Aug-18	50.52	3.10	47.42	24.47	15.13		1.64	7.70	0.00	7.70
Sep-18	23.74	2.01	21.73	27.13	12.90		1.69	12.54	0.00	12.54
Oct-18	8.95	1.38	7.58	26.82		11.12	1.60	14.10	0.00	14.10
Nov-18	0.90	0.86	0.04	24.72		8.85	1.47	14.40	0.00	14.40
Dec-18	0.00	0.67	-0.67	22.08		7.85	1.35	12.88	0.00	12.88
Jan-19	0.02	0.68	-0.66	19.69		7.11	1.22	11.36	0.00	11.36
Feb-19	0.04	0.78	-0.74	17.71		6.43	1.14	10.14	0.00	10.14
Mar-19	0.45	1.18	-0.74	16.02		5.95	1.10	8.97	0.00	8.97
Year-4 Total	229.69	20.82	208.87	252.63	69.93	53.95	16.22	112.52	0.00	112.52
Apr-19	4.73	1.61	3.12	15.83		6.73	1.13	7.97	0.00	7.97
May-19	29.51	1.99	27.52	14.89	12.47		1.23	1.19	0.00	1.19
Jun-19	42.42	3.21	39.21	15.94	12.96		1.36	1.62	0.00	1.62
Jul-19	68.90	3.34	65.56	18.58	16.73		1.55	0.30	0.00	0.30
Aug-19	50.29	3.10	47.19	22.77	15.15		1.68	5.94	0.00	5.94
Sep-19	24.04	2.01	22.04	25.56	13.07		1.73	10.76	0.00	10.76
Oct-19	9.26	1.38	7.89	25.40		11.29	1.63	12.48	0.00	12.48
Nov-19	0.89	0.86	0.03	23.45		8.92	1.49	13.04	0.00	13.04
Dec-19	0.00	0.67	-0.67	20.92		7.91	1.34	11.67	0.00	11.67
Jan-20	0.02	0.68	-0.66	18.63		7.16	1.22	10.25	0.00	10.25
Feb-20	0.04	0.78	-0.74	16.73		6.48	1.14	9.11	0.00	9.11
Mar-20	0.44	1.18	-0.75	15.12		6.00	1.11	8.01	0.00	8.01
Year-5 Total	230.54	20.82	209.72	233.82	70.38	54.48	16.61	92.35	0.00	92.35

(A) Projected recharge diversions during the requested plan period

(B) Evaporation from 8.1 acre recharge pond; assessed at gross evaporation rate [Column (B), Table No.1]

(C) = (A) - (B)

(D) Lagged timing of net recharge realized at the Poudre River during requested plan period from recharge model run

(E) Irrigation season return flow component; Years 1 - 5 based on 2.5 Box Elder Ditch shares

(F) Winter return flow component; Years 1 - 5 based on 2.5 Box Elder Ditch shares

(G) Total combined lagged mining depletions during the requested plan period

(H) = (D) - (E) - (F) - (G)

DIVISION OF RECLAMATION, MINING AND SAFETY

Department of Natural Resources

1313 Sherman St., Room 215

Denver, Colorado 80203

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FAX: (303) 832-8106

M-1999-050
Timnath

Bill Ritter, Jr.
GovernorJames B. Martin
Executive DirectorLoretta E. Piñeda
Director

April 30, 2010

Connell Resources, Inc
7785 Highland Meadows Pkwy., Ste. 100
Fort Collins, CO 805280000

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: M1998058 Tellier Gravel Pit
 M2006084 White River City Pit
 M1987164 Camilletti Pit
 M2008009 Lyster Pit
 M2008006 SerFer Pit
 ✓ M1999050 Timnath Connell Pit
 M1977125 Thompson Pit
 M1981022 Glass Gravel Pit
 M1981007 Stute Gravel Pit

ADMINISTRATION PROTOCOL

Augmentation Plan Accounting

Division One – South Platte River

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

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

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

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

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

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

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

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

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

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

“Plan**WDID**_YYMMDD”

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

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

“0103333_040515.xls”

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

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

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

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

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.

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.