COLORADO
Division of Water Resources
Department of Natural Resources

February 16, 2021

Sira Satori, P.H.
Clear Water Solutions
8010 S. Country Road 5, Suite 105
Windsor, CO 80528

Re: **NCCI Pit #1 Substitute Water Supply Plan (WDID 0202566)**
NCCI Pit #1, M-2001-107 (WDID 0203016)
Section 24, T 2N, R 67W, 6th P.M.
Water Division 1, Water District 2, Weld County
SWSP Plan ID 3670

Approval period: January 6, 2021 through December 31, 2021
Contact phone number for Sira Sartori, P.H.: 970-223-3706

Dear Sira Satori, P.H.:

We have received your January 6, 2021 renewal request for the above-referenced substitute water supply plan ("SWSP") to cover depletions caused by an existing gravel mining operation operated by Northern Colorado Constructors, Inc. ("NCCI" or "Applicant"). The required fee of $257.00 for the renewal of this SWSP has been submitted (receipt no. 10008571). The original supply plan was approved on December 30, 2002 and the SWSP was most recently renewed on November 18, 2019.

Plan Operation

Mining operations at the NCCI Pit #1 have ceased. This plan seeks to replace lagged depletions resulting from past mining operations at the NCCI Pit #1, ongoing evaporative losses, and ongoing dewatering. In 2021, the mining operation will consist of 5.96 acres of exposed water surface area through recharge ditches, sedimentation ponds, and dewatering ditches, as shown on attached Figure 1. The mining operation will also result in a maximum volume of 1,117.9 acre-feet of water pumped for dewatering. Liner construction for the pit will begin in November 2020 and continue through February 2021. The exposed surface area will be reduced to zero at the end of June 2021. Any water which enters the pit during liner construction will be pumped back to the river system. The lagged depletions will be replaced using fully consumable effluent leased from the City of Thornton ("Thornton") and accretion credits from dewatered water returned directly back to the stream system.

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. In accordance with approach no. 3, you have indicated that a bond has been obtained for $1,030,074 that can cover the cost of lining the NCCI Pit #1 to prevent the exposure of groundwater.

Depletions

The exposed groundwater surface area will be 5.96 acres from January through June 2021, after which the pit will be lined and the exposed surface area will be zero. Net evaporative depletions were calculated using a gross annual evaporation of 45 inches from the exposed groundwater surface, with a credit of 9.73 inches for effective precipitation. The net depletions of groundwater due to evaporation from the 5.96 acres at the site totals 8.0 acre-feet, as shown on the attached Table 2.

The mining operation has continuously dewatered directly back to the South Platte River since mining operations commenced in 2003. The Applicant estimates pumping a maximum of 1,117.9 acre-feet of water for dewatering from January through March 2021 (attached Table 3-A). However, since dewatering may fluctuate from month-to-month, an alternate dewatering scenario was evaluated for a total pumping of 523.9 acre-feet (attached Table 3-B). Dewatering operations must be metered to the satisfaction of the Division Engineer. Meters were installed on the dewatering pumps in May 2012.

The IDS AWAS stream depletion model was used to determine the lagged depletions to the South Platte River caused by the NCCI #1 Pit. The following parameters were used in the model: transmissivity (T), 150,000 gallons per day per foot; specific yield (SY), 0.2; distance from the South Platte River to the edge of the alluvium (W), 5,000 feet; and distance from the centroid of the exposed surface water areas to the South Platte River (X), 3,300 feet.

The total lagged depletions during 2021 caused by past and projected mining activities at the NCCI #1 Pit is 2,124.1 acre-feet, as shown on the attached Table 4-A (including anticipated dewatering depletions). The alternate total lagged depletions during 2021 caused by past and projected mining activities at the NCCI #1 Pit is 1,554.8 acre-feet, as shown on the attached Table 4-B (including anticipated alternate dewatering depletions). After accounting for the anticipated 1,117.9 acre-feet of dewatering water that is returned directly back to the stream, the net depletion for 2021 is 1272.1 acre-feet. After accounting for the 523.9 acre-feet of alternate values of dewatering water that is returned directly to the stream, the net depletion for 2020 is 1,030.9 acre-feet.

Depletions from the mining operation accrue to the South Platte River in Section 19, Township 2 North, Range 66 West, 6th P.M. For purposes of this SWSP, the point of depletion will be considered the point where the South Platte River crosses the South line of Section 19, Township 2 North, Range 66 West, which is just upstream of the Meadow Island No. 1 Ditch.

Replacements

The source of replacement water is fully consumable water from Thornton. Thornton purchased the NCCI Pit #1 site for future reservoir storage and entered into an agreement allowing NCCI to continue mining the site. The agreement requires Thornton to replace depletions caused by NCCI's mining operations.

The anticipated quantity of replacement water needed for this plan in 2021 is estimated to be 1,479.2 acre-feet with an alternate quantity of replacement water estimated to be 1,198.7 acre-feet. The water from Thornton will be released from the Metropolitan Wastewater Treatment Plant ("Metro", WDID 0200700). A 0.5% per mile transit loss (14% overall loss for the 28 miles between Metro and the point of depletion) was accounted for in the SWSP. Conveyance loss for delivery of augmentation water is subject to assessment and modification as determined by the Water Commissioner and/or Division Engineer.

The lagged depletions include depletions resulting from past uses at the site and the replacements are shown on attached Table 4-A and Table 4-B.

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 6, 2021 through December 31, 2021, unless otherwise revoked or superseded by 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 by **November 1, 2021**. If a renewal request is received after the expiration date of this plan, it will be considered a request for a new SWSP and the $1,593 filing fee will apply.

2. Well Permit 74792-F has been issued for this pit, and this permit remains valid. The permit covers up to 111.14 acres of exposed surface area and dewatering activities. The average annual amount of groundwater that can be appropriated shall not exceed 366.2 acre-feet, including dewatering and up to 330.10 acre-feet of evaporative loss, 6.2 acre-feet of water used for dust control, 22.1 acre-feet of water lost in mined product (750,000 tons/year), 7.4 acre-feet for concrete production, and 0.4 acre-feet of asphalt production. Actual depletions cannot exceed these amounts and are limited to those uses specifically approved through this SWSP.

3. The total exposed groundwater surface area at the NCCI Pit #1 must not exceed 5.96 acres during the period of January 2021 through June 2021 and zero acres for July 2021 through December 2021 (in the dewatering trenches and ponds) resulting in an annual evaporative loss of 8.0 acre-feet.

4. Total consumption at the NCCI Pit #1 Pit must not exceed the aforementioned amounts unless an amendment is made to this plan.

5. Approval of this plan is for the purposes as stated herein. Any additional uses of this water must first be approved by this office.

6. The applicant shall maintain daily records of all diversions, replacements, and the amount of water used for each particular purpose. The applicant shall provide a report of these records to the Division Engineer at Div1Accounting@state.co.us, to District 2 Water Commissioner at Jorge.Vidal@state.co.us, and to the River Operations & Compact Coordinator at Brent.Schantz@state.co.us on a monthly basis. Submitted accounting shall conform to the Administration Protocol *"Augmentation Plan Accounting, Division One – South Platter River"* (attached).

   In addition, the applicant shall verify that entities making replacement for this SWSP are including that use on their monthly accounting submitted to this office. For the purposes of this SWSP, that entity is the City of Thornton (WDID 0202611).

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

8. Conveyance loss for delivery of augmentation water is subject to assessment and modification as determined by the Division Engineer. Currently 0.5% per mile conveyance

loss is being accounted for in the SWSP; this is subject to change depending upon current conditions.

9. 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.

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

11. The Division of Water Resources will not be responsible for any enforcement or administration of third party agreements that are not included in a decree of the water court. The name, mailing address, and phone number of the contact person who will be responsible for operation and accounting of this plan must be provided on the accounting forms to the Division Engineer and Water Commissioner.

12. The approval of this SWSP does not relieve the Applicant and/or landowner of the requirement to obtain a Water Court decree approving a permanent plan for augmentation or mitigation to ensure the permanent replacement of all depletions, including long-term evaporation losses and lagged depletions after gravel mining operations have ceased. If reclamation of the mine site will produce a permanent water surface exposing groundwater to evaporation, an application for a plan for augmentation must be filed with the Division 1 Water Court at least three (3) years prior to the completion of mining to include, but not be limited to, long-term evaporation losses and lagged depletions. If a lined pond results after reclamation, replacement of lagged depletions shall continue until there is no longer an effect on stream flow.

13. The State Engineer may revoke this SWSP or add additional restrictions to its operation if at any time the State Engineer determines that injury to other vested water rights has occurred or will occur as a result of the operation of this SWSP. Should this SWSP expire without renewal or be revoked prior to adjudication of a permanent plan for augmentation, all use of water under this SWSP must cease immediately.

14. Dewatering at this site will produce delayed depletions to the stream system. At least three years prior to completion of dewatering, a plan must be submitted that specifies how the post pumping dewatering depletions (including refilling of the pit) will be replaced, in time, place and amount. In order for the Applicant to claim net accretion credit for dewatering operations, the actual use as demonstrated by the dewatering meters, must be analyzed to show true pumping impacts.

15. To assure that depletions from groundwater evaporation do not occur in the unforeseen event, or events, that would lead to the abandonment of the pit, a bond through DRMS for $1,030,074 for lining of the pit has been obtained. Therefore, in case of abandonment the bond can finance the completion of the lining of the pit or the backfilling, thus preventing depletions to the stream system.

16. In accordance with amendments to section 25-8-202-(7), C.R.S. and "Senate Bill 89-181 Rules and Regulations" adopted on February 4, 1992, the State Engineer shall determine if this substitute water supply plan is of a quality to meet requirements of use to which the senior appropriation receiving the substitute supply has normally been put. As such, water quality data or analyses may be requested at any time to determine if the requirement of use of the senior appropriator is met.

17. The decision of the State Engineer shall have no precedential or evidentiary force, shall not create any presumptions, shift the burden of proof, or serve as a defense in any water court case or any other legal action that may be initiated concerning the substitute water supply 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 comments or questions, please contact Dean Santistevan, Assistant Division Engineer in Greeley, at 970-352-8712, or Wenli Dickinson of this office at 303-866-3581 x8206.

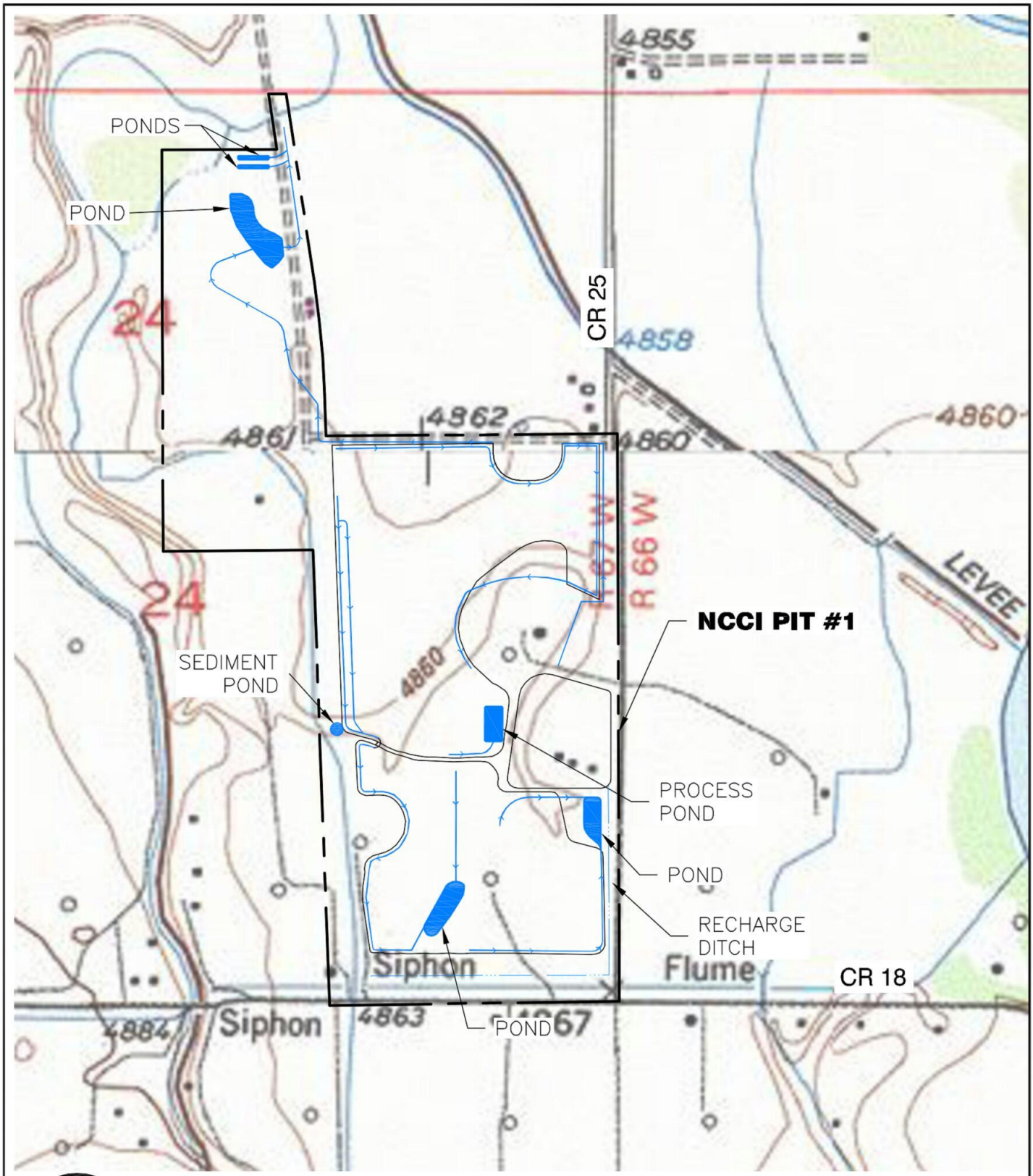
Sincerely,

Jeff Deatherage, P.E.
Chief of Water Supply

Attachments: Figure 2
Tables 2 through 4-B
DRMS Letter April 30, 2010
Augmentation Plan Accounting, Division One – South Platte River

cc: Dean Santistevan, Assistant Division Engineer, Div1Accounting@state.co.us
Brent Schantz, River Operations & Compact Coordinator, Brent.Schantz@state.co.us
Jorge Vidal, District 2 Water Commissioner, Jorge.Vidal@state.co.us
Louis Flinck, Tabulations/Diversion Records Coordinator, Louis.Flink@state.co.us
Division of Reclamation Mining and Safety, Peter.Hayes@state.co.us

JD/jmw/wad: NCCI Pit #1 Approval 2021.docx



N

MINING LIMIT

DITCH

800 400 0 800

SCALE IN FEET

FIGURE 2

J&T Consulting, Inc.
305 Denver Avenue-Suite D
Fort Lupton, CO 80621
303-857-6222

Northern Colorado Constructors, Inc.
NCCI Pit #1
2019 Mining Conditions

Date:	10/31/19
Job No:	06109
Drawn:	WSS
Scale:	1" = 800'
Sheet: 1	Of: 1

P:\06109 NCCI Pit 1\Drawings\JT-Quad2019 Conditions.dwg, 2019 Conditions, 10/31/2019 12:38:15 PM

Table No. 2
Evaporative Uses
Northern Colorado Constructors, Inc.
NCCI Pit #1

Month	Percent of Annual Evaporation (%)	Exposed Water Surface Area (ac)	Gross Evaporation (ft)	Precipitation (in)	Effective Precipitation (ft)	Net Evaporation (ft)	Total Evaporative Consumptive Use (ac-ft)
Jan-21	3.0%	5.96	0.1	0.4	0.0	0.1	0.5
Feb-21	3.5%	5.96	0.1	0.4	0.0	0.1	0.7
Mar-21	5.5%	5.96	0.2	1.0	0.1	0.1	0.9
Apr-21	9.0%	5.96	0.3	1.7	0.1	0.2	1.4
May-21	12.0%	5.96	0.5	2.4	0.1	0.3	1.8
Jun-21	14.5%	5.96	0.5	1.6	0.1	0.4	2.7
Jul-21	15.0%	0.00	0.6	1.4	0.1	0.5	0.0
Aug-21	13.5%	0.00	0.5	1.5	0.1	0.4	0.0
Sep-21	10.0%	0.00	0.4	1.2	0.1	0.3	0.0
Oct-21	7.0%	0.00	0.3	0.9	0.1	0.2	0.0
Nov-21	4.0%	0.00	0.2	0.7	0.0	0.1	0.0
Dec-21	3.0%	0.00	0.1	0.4	0.0	0.1	0.0
Total	**100%**	**-**	**3.8**	**13.9**	**0.8**	**2.9**	**8.0**

Annual Precipitation =	13.9	inches	-Taken from Fort Lupton & Brighton Weather Stations
Gross Annual Evaporation =	45	inches	-Taken from NOAA Technical Report NWS 33

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Table No. 3-A
Operational Uses - Anticipated Operations
Northern Colorado Constructors, Inc.
NCCI Pit #1

Month	Percent of Annual Aggregate Production (%)	Aggregate Production (tons)	Water Retained in Product (ac-ft)	Water Used For Dust Control (ac-ft)	Water Used for Concrete Production (ac-ft)	Water Used for Asphalt Production (ac-ft)	Total Pumped from Dewatering Wells (ac-ft)	Total Operational Consumptive Use (ac-ft)	Total Evaporative Consumptive Use* (ac-ft)	Total Consumptive Use (ac-ft)
Jan-21	1.0%	0	0.0	0.0	0.0	0.0	577.6	0.0	0.5	578.1
Feb-21	2.0%	0	0.0	0.0	0.0	0.0	347.8	0.0	0.7	348.4
Mar-21	6.0%	0	0.0	0.0	0.0	0.0	192.5	0.0	0.9	193.4
Apr-21	9.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4
May-21	13.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	1.8
Jun-21	16.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	2.7
Jul-21	17.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aug-21	15.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sep-21	9.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oct-21	7.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nov-21	4.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dec-21	1.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	**100%**	**0**	**0.0**	**0.0**	**0.0**	**0.0**	**1,117.9**	**0.0**	**8.0**	**1,125.8**

Total Maximum Material Mined =	0	tons
Moisture Content =	4.0%	
Maximum Dust Control =	0.0	ac-ft
2020 Concrete Production =	0.0	ac-ft
2020 Asphalt Production =	0.0	ac-ft

*Evaporative Consumptive Use from Table 2

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Table No. 3-B
Operational Uses - Alternate Scenario
Northern Colorado Constructors, Inc.
NCCI Pit #1

Month	Percent of Annual Aggregate Production (%)	Aggregate Production (tons)	Water Retained in Product (ac-ft)	Water Used For Dust Control (ac-ft)	Water Used for Concrete Production (ac-ft)	Water Used for Asphalt Production (ac-ft)	Total Pumped from Dewatering Wells (ac-ft)	Total Operational Consumptive Use (ac-ft)	Total Evaporative Consumptive Use* (ac-ft)	Total Consumptive Use (ac-ft)
Jan-21	1.0%	0	0.0	0.0	0.0	0.0	269.1	0.0	0.5	269.6
Feb-21	2.0%	0	0.0	0.0	0.0	0.0	113.5	0.0	0.7	114.1
Mar-21	6.0%	0	0.0	0.0	0.0	0.0	141.3	0.0	0.9	142.2
Apr-21	9.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4
May-21	13.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	1.8
Jun-21	16.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	2.7
Jul-21	17.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aug-21	15.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sep-21	9.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oct-21	7.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nov-21	4.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dec-21	1.0%	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	**100%**	**0**	**0.0**	**0.00**	**0.0**	**0.0**	**523.9**	**0.0**	**8.0**	**531.8**

Total Maximum Material Mined =	0	tons
Moisture Content =	4.0%	
Maximum Dust Control =	0.0	ac-ft
2020 Concrete Production =	0.0	ac-ft
2020 Asphalt Production =	0.0	ac-ft

*Evaporative Consumptive Use from Table 2

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Table No. 4-A
Water Balance - Anticipated Operations
Northern Colorado Constructors, Inc.
NCCI Pit #1

Month	Total Consumptive Use (ac-ft) (A)	Total Lagged Stream Depletions (ac-ft) (B)	Dewater Return Accretions (ac-ft) (C)	Transit Loss (ac-ft) (D)	Lease from City of Thornton (ac-ft) (E)	Net River Balance (ac-ft) (F)
Jan-21	578.1	323.4	577.6	0.0	0.0	254.2
Feb-21	348.4	336.0	347.8	0.0	0.0	11.8
Mar-21	193.4	364.3	192.5	28.0	199.7	0.0
Apr-21	1.4	299.0	0.0	48.7	347.6	0.0
May-21	1.8	231.3	0.0	37.7	268.9	0.0
Jun-21	2.7	166.0	0.0	27.0	193.0	0.0
Jul-21	0.0	127.4	0.0	20.7	148.1	0.0
Aug-21	0.0	93.7	0.0	15.3	109.0	0.0
Sep-21	0.0	67.1	0.0	10.9	78.0	0.0
Oct-21	0.0	51.3	0.0	8.3	59.6	0.0
Nov-21	0.0	36.7	0.0	6.0	42.6	0.0
Dec-21	0.0	28.0	0.0	4.6	32.6	0.0
Total	**1,125.8**	**2,124.1**	**1,117.9**	**207.1**	**1,479.2**	**265.9**

Notes:
(A) Total depletions at NCCI Pit #1 from Table No. 3-A
(B) From IDSAWAS Version 1.5.85, Total lagged stream depletions to South Platte River since 2003
(C) 100% of dewatering volume returned to river, data same as "Total Pumped from Dewatering Wells" displayed in Table 3-A
(D) Transit loss from Metro WWTP assumed at 0.5% per mile for 28 miles
(E) Replacements from City of Thornton
(F) Net River Balance, (E)+(C)-(B)-(D)

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Table No. 4-B
Water Balance - Alternate Scenario
Northern Colorado Constructors, Inc.
NCCI Pit #1

Month	Total Consumptive Use (ac-ft) (A)	Total Lagged Stream Depletions (ac-ft) (B)	Dewater Return Accretions (ac-ft) (C)	Transit Loss (ac-ft) (D)	Lease from City of Thornton (ac-ft) (E)	Net River Balance (ac-ft) (F)
Jan-21	269.6	301.1	269.1	5.2	37.2	0.0
Feb-21	114.1	256.4	113.5	23.3	166.2	0.0
Mar-21	142.2	247.2	141.3	17.2	123.2	0.0
Apr-21	1.4	203.2	0.0	33.1	236.3	0.0
May-21	1.8	157.5	0.0	25.6	183.1	0.0
Jun-21	2.7	113.2	0.0	18.4	131.6	0.0
Jul-21	0.0	87.0	0.0	14.2	101.2	0.0
Aug-21	0.0	64.1	0.0	10.4	74.5	0.0
Sep-21	0.0	45.8	0.0	7.5	53.3	0.0
Oct-21	0.0	35.0	0.0	5.7	40.7	0.0
Nov-21	0.0	25.1	0.0	4.1	29.1	0.0
Dec-21	0.0	19.2	0.0	3.1	22.3	0.0
Total	**531.8**	**1,554.8**	**523.9**	**167.8**	**1,198.7**	**0.0**

Notes:
(A) Total depletions at NCCI Pit #1 from Table No. 3-B
(B) From IDSAWAS Version 1.5.85, Total lagged stream depletions to South Platte River since 2003
(C) 100% of dewatering volume returned to river, data same as "Total Pumped from Dewatering Wells" displayed in Table 3-B
(D) Transit loss from Metro WWTP assumed at 0.5% per mile for 28 miles
(E) Replacements from City of Thornton
(F) Net River Balance, (E)+(C)-(B)-(D)

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April 30, 2010

Permittee Address

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: Permit Id Site Name

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*)*