COLORADO
Division of Water Resources
Department of Natural Resources

June 26, 2019

Ms. Michelle Hatcher
Clear Water Solutions
8010 S. County Road 5, Suite 106
Windsor, CO 80528

Re: Bennett Pit Substitute Water Supply Plan (WDID 0202664)
DRMS File No. M-2016-085(WDID 0210524)
Sections 1 and 12, T2N, R67W of the 6th P.M.
Water Division 1, Water District 2, Weld County
SWSP ID: 6078

Approval Period: June 26, 2019 through February 28, 2021 (or May 31, 2021 subject to condition of approval no. 1)

Contact information for Ms. Hatcher: 970-223-3706 and *michelle@clearwatercolorado.com*

Dear Ms.Hatcher:

This letter is in response to your application received on March 25, 2019 (resubmitted on June 4, 2019) requesting a substitute water supply plan ("SWSP") for a sand and gravel pit operated by Northern Colorado Contractors Inc. ("NCCI " or "Applicant") in accordance with § 37-90-137(11), C.R.S., for the Bennett Gravel Pit, Division of Reclamation Mining and Safety("DRMS") File No. M-2016-085. The Applicant shall be responsible for compliance with this SWSP, but the State Engineer's Office may also pursue the landowner, for eventual compliance. The required fee of $1,593 for the SWSP has been paid (receipt no. 3691063).

SWSP Operations

The Bennett Pit is located in the SW1/4 of the SE1/4 of Section 1, and the N1/2 of Section 12, all Township 2 North, Range 67 West of the 6th P.M. (Figure 1). This SWSP seeks to replace depletions resulting from the mining operation over the first two years of operation include evaporation from exposed ground water, dust suppression, dewatering, and water lost with the mined product. In addition, NCCI will be installing a slurry wall concurrent with mining. The life expectancy of the Bennett Pit is approximately 10-15 years. Approximately 300,000 tons are to be excavated from the pit each year. The proposed reclamation of the site is a lined reservoir through the construction of a slurry wall around the mining area. The proposed replacement of depletions for this site during the period of this SWSP will come from dewatering accretion credits associated with the dewatering at the site.

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 nos. 1 and 3, you have indicated that a bond has been obtained for $1,005,627.00 through the DRMS for lining of this site 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.

Depletions

The projected depletions for the period of this SWSP consist of net evaporation from exposed groundwater surface area, water removed in the mined product, dust suppression, dewatering and water used for the slurry wall construction. The SWSP anticipates that a total of 11 acres of water surface will be exposed at the site in sedimentation ponds, and dewatering trenches.

The Applicant proposed to replace evaporation from exposed ground water at the site based upon evaporation atlases in NOAA Technical Report NWS 33 and the SEO monthly distribution factors for sites below 6,500 feet. Gross annual evaporation at the gravel pit location is estimated to be 44.00 inches per year. Net evaporation is defined as gross evaporation less the consumptive use of water by vegetation that naturally occurred at the site prior to construction of the pit. The historical consumptive use was assumed to be equal to the effective precipitation, which was estimated based on the data from the Brighton NOAA weather station (record 1978-2017). The net evaporation from the exposed water surface is estimated at 29.3 acre-feet, as shown in Table 1 (attached).

Computation of evaporation under this SWSP was reduced during the ice covered period. You have assumed the ice covered period will occur during the months of December and January based on average monthly temperatures less than 32°F taken from the Brighton NOAA weather station (record 1978-2017). However, for the purpose of this SWSP, the Applicant shall replace the net evaporation depletions from the exposed groundwater surface area that may occur during the assumed ice covered period (the months of December and January) for any time that the pit is not completely covered by ice.

Computation of the net evaporation during any time that the pit is not completely covered by ice shall be determined as the pro-rata amount of the monthly gross evaporation rate distribution amount identified in the State Engineer's *General Guidelines for Substitute Supply Plans for Sand and Gravel Pits,* subtracting the pro-rata amount of the effective precipitation for that period.

In addition to evaporation, water is lost with the mined product removed from the mine site. The Applicant projected that they will produce 300,000 tons of gravel each year during the SWSP period. Gravel mined will be in a dewatered state and will be washed therefore the ground water lost with the mined product during this period is estimated at 4 percent by weight. The water lost with the mined product is projected to total 8.8 acre-feet each year during the SWSP period, as shown in Table 2 (attached).

The estimated water used for dust suppression during each year of operation total 1.2 acre-feet, as shown in Table 2. Also the estimated water used for the construction of the slurry wall during the first year of operation is estimated at 39 acre-feet, from June through October 2019 when the slurry wall is anticipated to be completed, as shown in Table 2.

The mining operation will be continuously dewatered to the South Platte River at an estimated pumping rate of 2,000 gallons per minute or up to 3,235 acre-feet, as shown in Table 2. Dewatering will be lagged using the IDS AWAS stream depletion model. At the start of the dewatering program water discharged to the stream exceeds the lagged depletions from the dewatering operation. This results in a credit to the stream that will be used to offset evaporative and operational depletions under the SWSP. The net effect on the river from dewatering is shown in Table 3 (attached), which shows that during the period of this SWSP there are sufficient accretion credits to the stream to cover the lagged stream depletions, except for the months of March, April and May 2021. <u>All dewatering activities must be metered with a totalizing flow meter that is recorded and reported on the submitted monthly accounting</u>.

The total consumptive use at this site is estimated at 3,313.3 acre-feet for the first year of operation and 3,265.4 acre-feet for the second year of operation. You have provided a monthly breakdown of the annual depletions, which include 29.3 acre-feet/year of net evaporative loss, 1.2 acre-feet/year of water used for dust control, 8.8 acre-feet/year of water lost with the mined product, 39 acre-feet for the slurry wall construction in 2019, 3,234.9 acre-feet from dewatering for the first year of operation, and 3,226 acre-feet from dewatering for the second year of operation.

The IDS AWAS stream depletion model was used to determine the lagged depletions from dewatering, evaporation and operational losses to the South Platte River. The aquifer characteristics used in the model for the alluvial well are: transmissivity (T) = 133,667 gallons per day per foot, specific yield (SY) = 0.2, the distance from the centroid of the gravel pit site to the stream =1,136 feet and the location of the parallel impermeable boundary was estimated to be 5,923 feet from the stream.

The total lagged depletions from June 1, 2019 through May 31, 2020 are equal to 2,756.1 acre-feet and the total lagged depletions from June 1, 2020 through May 31, 2021 are equal to 3,219.2 acre-feet, as shown in Table 3. Depletions from this operation will accrue to the South Platte River in the NE1/4 of Section 12, Township 2 North, Range 66 West, 6th P.M.

Replacements

Out-of-priority depletions associated with the mining operation at this site will be replaced using the net accretion credits from dewatering operations at the South Platte River. The timing of the lagged depletions from the dewatering operation was determined through the IDS AWAS stream depletion model with the aquifer parameters listed above under the Depletions section of the SWSP. The model is accounting for the net accretion credits at the river that occur due to the dewatering operation at the site. These accretions are applied to this plan against the lagged depletions from the evaporation and operational losses. As shown in Table 3 there will be a shortage of 4.4 acre-feet of net accretion dewatering credits during the months of March, April and May 2021. During these months the Applicant is proposing to lease fully consumable water from the City of Fort Lupton ("City"). The fully consumable water will be released to the South Platte River from the City's Waste Water Treatment Plant ("WWTP") or water stored in Perry Pit. The attached Figure 2 shows the location of the WWTP and Perry Pit and the distances in miles to Bennett pit. Transit losses will be assessed at 0.5 percent per mile.

This SWSP will expire on February 28, 2021. The SWSP will be extended through May 31, 2021 if a copy of the lease with the City of Fort Lupton is provided to this office by February 28, 2021 that includes adequate replacement water to replace all un-replaced depletions, after accounting for any transit losses.

Conditions of Approval

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

1. This SWSP is approved with the effective date of **June 26, 2019 and shall be valid through February 28, 2021** unless otherwise revoked or superseded by a decree. **The plan will be extended until May 31, 2021 if the Applicant provides a copy of the lease with the City of Fort Lupton to this office by December 1, 2020 that includes adequate replacement water to replace all un-replaced depletions, after accounting for any transit losses.** If this plan is not decreed in water court by the SWSP expiration date, a renewal request must be submitted to this office with the statutory fee of $257 no later than **December 1, 2020 or March 1, 2021 (if the expiration date is extended to May 31, 2021).**

2. A well permit must be issued for the gravel pit in accordance with Section § 37-90-137(2) and (11), C.R.S. prior to the exposure or use of groundwater. A well permit application has been submitted to this office (receipt no. 3690927) and this application is pending evaluation. Until a gravel pit well permit is approved, consumptive use and exposure of groundwater on this site is prohibited. The provisions of § 37-90-137(2), C.R.S. prohibits the issuance of a permit for a well to be located within 600 feet of any existing well, unless the State Engineer finds that circumstances so warrant after a hearing held in accordance with the procedural rules in 2CCR402-5. This hearing may be waived if you are able to obtain statements from the owners of all wells within 600 feet, verifying that they have no objection to your use of the proposed well. Should a new well permit be denied for reasons of 600 foot spacing, or any other legitimate reason, approval of this SWSP may be cancelled.

3. The surface area of the groundwater exposed at the Bennett Pit site must not exceed 11 acres during this plan period, which results in a maximum evaporative annual loss of 29.3 acre-feet.

4. The annual water used for dust control at the Bennett Pit site shall not exceed 1.2 acre-feet, the total product mined at the Bennett Pit site shall not exceed 300,000 tons/year, which results in 8.8 acre-feet of water lost annually with the mined aggregate, and the total water used for the slurry wall construction shall not exceed 39.00 acre-feet/year.

5. Total consumption at the Bennett Pit site must not exceed these aforementioned amounts unless an amendment is made to this SWSP.

6. Approval of this SWSP is for the purposes as stated herein. This office must first approve any additional uses for the water. 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 shall be measured in a manner acceptable to the division engineer.

8. The replacement water that is the subject of this SWSP cannot be sold or leased to any other entity. As a condition of subsequent renewals of this SWSP, the replacement water must be appurtenant to this site until a plan for augmentation is obtained. All replacement water must be concurrent with depletions in quantity, timing, and locations.

9. Adequate accounting of depletions and replacements must be provided to the division engineer in Greeley (Div1Accounting@state.co.us) and the water commissioner (Jorge Vidal at Jorge.Vidal@state.co.us) on a monthly basis. All amounts shall be in acre-feet. All submitted accounting must conform to the Administration Protocol *"Augmentation Plan Accounting – Division One, South Platte River"* (attached).

10. Conveyance loss for delivery of augmentation water to the point of depletion on the South Platte River is subject to assessment and modification as determined by the division engineer.

11. The division engineer, or his 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.

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

13. 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.

14. **The Applicant must account for the depletions and accretions that result from the dewatering operations. If at any time it is found that the dewatering accretions are not adequate to replace the depletions resulting from the mining operation, including the dewatering depletions, an amendment to this SWSP must be obtained. All dewatering activities must be metered with a totalizing flow meter that is recorded and reported on the submitted monthly accounting. 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.**

15. **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 nos. 1 and 3, you have indicated that a bond has been obtained for $1,005,627.00 through the DRMS for lining of this site 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.

16. 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 (including any proposed aggregated replacement for winter depletions).

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

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

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

20. The decision of the State Engineer shall have no precedential or evidentiary force, shall not create any presumptions, shift the burden of proof, or serve as a defense in any water court case or any other legal action that may be initiated concerning the SWSP. This decision shall not bind the State Engineer to act in a similar manner in any other applications involving other 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.

If you have any questions concerning this approval, please contact Ioana Comaniciu in Denver at (303) 866-3581 or Dean Santistevan in Greeley at (970) 352-8712.

Sincerely,

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

Attachments: Figures 1 and 2
Tables 1, 2, 3
Accounting Protocol
Letter from DRMS dated April 30, 2010

Ec: Dean Santistevan, Assistant Division Engineer, Dean.Santistevan@state.co.us
Jorge Vidal, Water Commissioner, District 2, Jorge.Vidal@state.co.us
Brent Schantz, River Operations & Compact Coordinator, Brent.Schantz@state.co.us
Division of Reclamation Mining and Safety

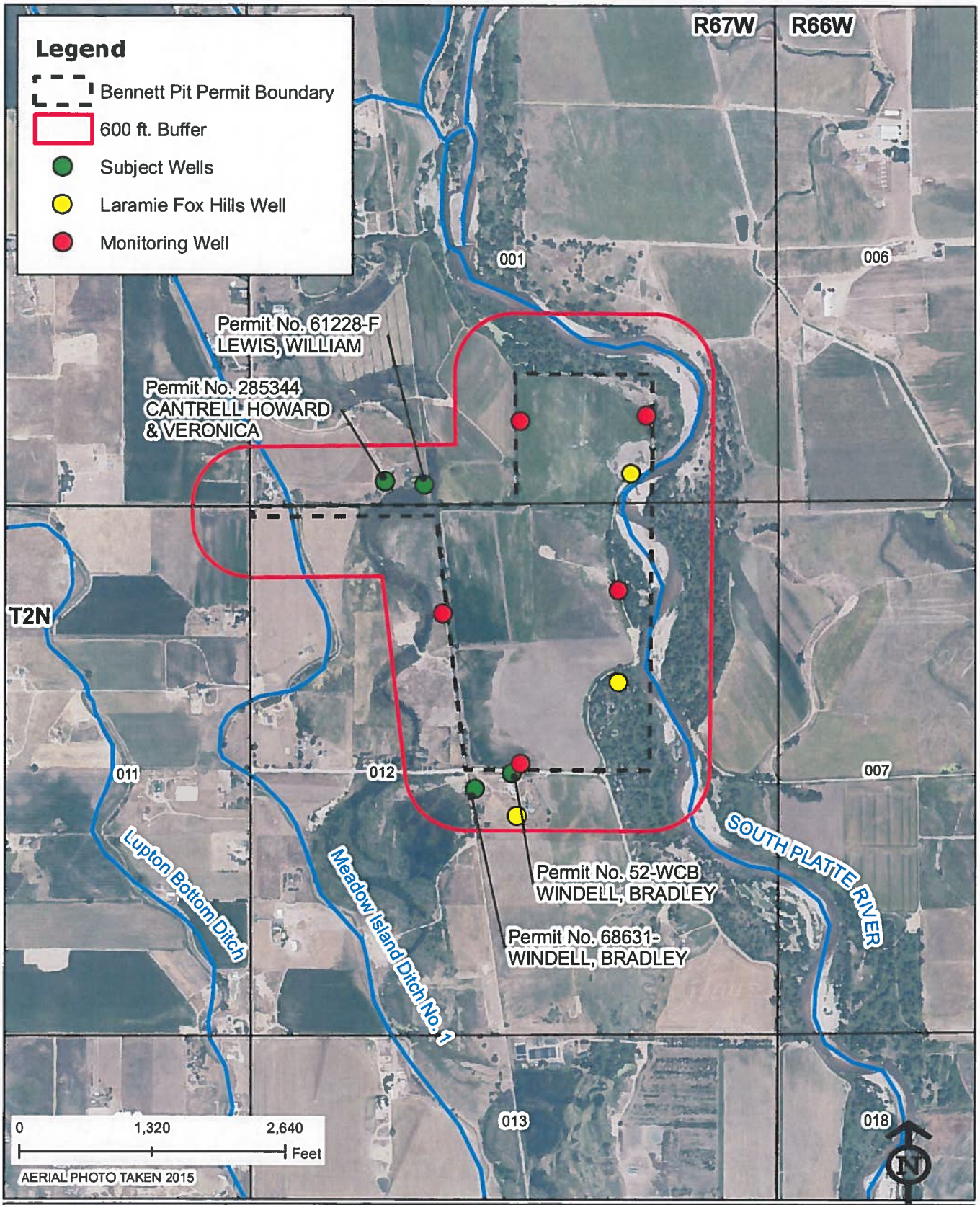

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Figure 1

Northern Colorado Constructors Inc.

Bennett Pit Well Permit

Date:	2-25-2019
Drawn By:	MLH
Scale:	1 inch = 0.25 miles
Job No:	19-100

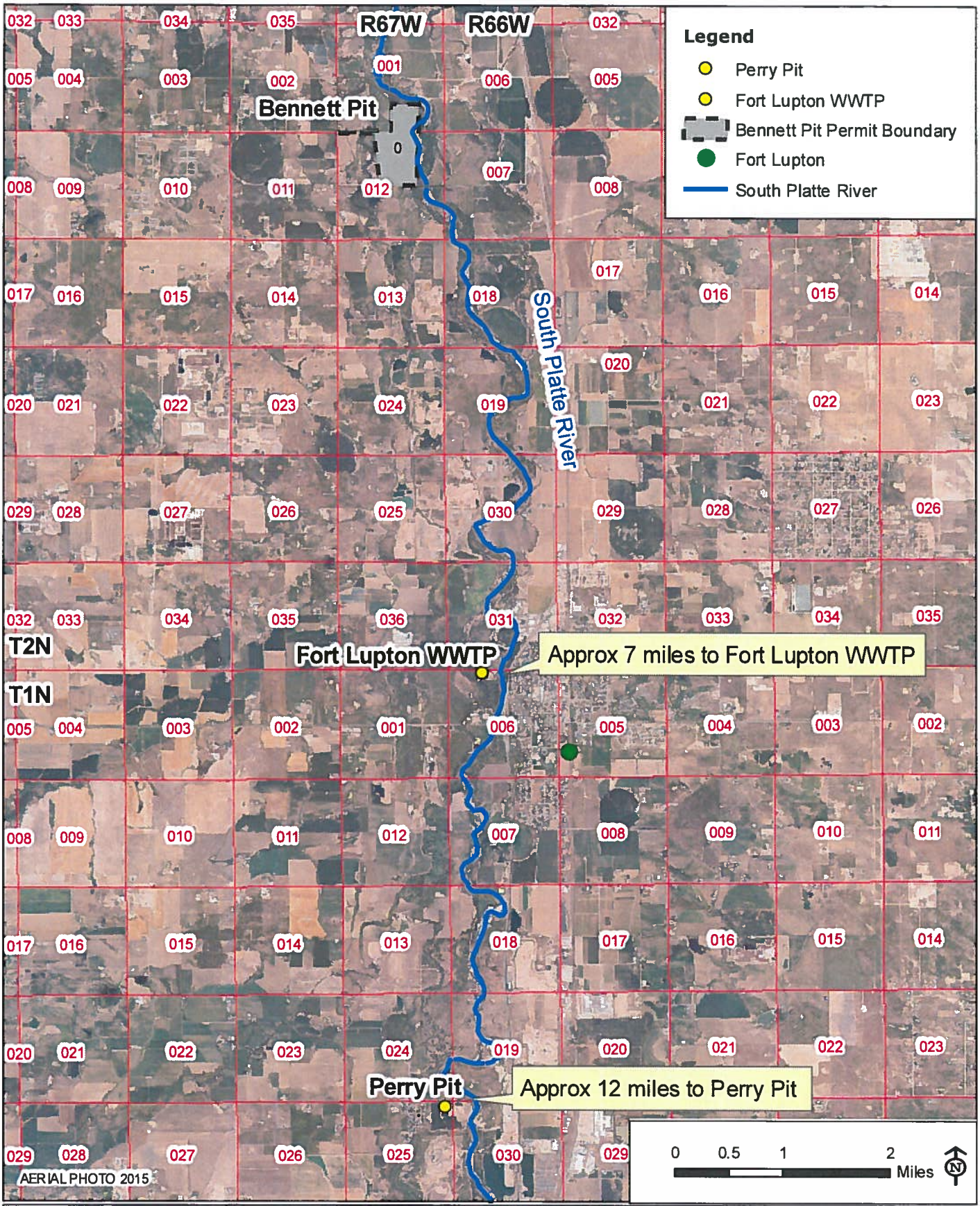

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Figure 2

Northern Colorado Constructors Inc.
Distances to Replacement Sources

Date:	6-19-2019
Drawn By:	MLH
Scale:	as shown
Job No:	19-100

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

Month	Percent of Annual Evaporation (%)	Gross Evaporation (ft)	Precipitation (in)	Effective Precipitation (ft)	Net Evaporation (ft)	Total Evaporative Consumptive Use (ac-ft)
June	14.5%	0.5	1.51	0.09	0.4	4.9
July	15.0%	0.6	1.53	0.09	0.5	5.1
August	13.5%	0.5	1.63	0.10	0.4	4.4
September	10.0%	0.4	1.18	0.07	0.3	3.3
October	7.0%	0.3	0.97	0.06	0.2	2.2
November	4.0%	0.1	0.75	0.04	0.1	1.1
December	3.0%	0.1	0.46	0.03	0.1	0.0
January	3.0%	0.1	0.45	0.03	0.1	0.0
February	3.5%	0.1	0.42	0.02	0.1	1.1
March	5.5%	0.2	1.11	0.06	0.1	1.5
April	9.0%	0.3	1.73	0.10	0.2	2.5
May	12.0%	0.4	2.54	0.15	0.3	3.2
Total	**100%**	**3.7**	**14.3**	**0.8**	**2.8**	**29.3**

Exposed Water Surface =	11.00	acres	
Annual Precipitation =	14.3	inches	-Brighton Weather Station (40 year average: 1978 - 2017)
Gross Annual Evaporation =	44	inches	-Taken from NOAA Technical Report NWS 33

Note: January and December evaporation set to zero as the average monthly temperature is below 32°F at the Brighton Weather Station from 1978 - 2017.

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Table No. 2
Operational Uses - Anticipated Operations
Northern Colorado Constructors, Inc.
NCCI Bennett Pit

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 Slurry Wall Construction (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)
Jun-19	16.0%	48,000	1.4	0.20	7.8	265.2	9.4	4.9	279.4
Jul-19	17.0%	51,000	1.5	0.21	7.8	274.0	9.5	5.1	288.6
Aug-19	15.0%	45,000	1.3	0.19	7.8	274.0	9.3	4.4	287.7
Sep-19	9.0%	27,000	0.8	0.11	7.8	265.2	8.7	3.3	277.1
Oct-19	7.0%	21,000	0.6	0.09	7.8	274.0	8.5	2.2	284.7
Nov-19	4.0%	12,000	0.4	0.05	0.0	265.2	0.4	1.1	266.7
Dec-19	1.0%	3,000	0.1	0.01	0.0	274.0	0.1	0.0	274.1
Jan-20	1.0%	3,000	0.1	0.01	0.0	274.0	0.1	0.0	274.1
Feb-20	2.0%	6,000	0.2	0.02	0.0	256.3	0.2	1.1	257.7
Mar-20	6.0%	18,000	0.5	0.07	0.0	274.0	0.6	1.5	276.1
Apr-20	9.0%	27,000	0.8	0.11	0.0	265.2	0.9	2.5	268.6
May-20	13.0%	39,000	1.1	0.16	0.0	274.0	1.3	3.2	278.5
Total	**100.0%**	**300,000**	**8.8**	**1.2**	**39.0**	**3,234.9**	**49.1**	**29.3**	**3,313.3**
Jun-20	16.0%	48,000	1.4	0.20	0.0	265.2	1.6	4.9	271.6
Jul-20	17.0%	51,000	1.5	0.21	0.0	274.0	1.7	5.1	280.8
Aug-20	15.0%	45,000	1.3	0.19	0.0	274.0	1.5	4.4	279.9
Sep-20	9.0%	27,000	0.8	0.11	0.0	265.2	0.9	3.3	269.3
Oct-20	7.0%	21,000	0.6	0.09	0.0	274.0	0.7	2.2	276.9
Nov-20	4.0%	12,000	0.4	0.05	0.0	265.2	0.4	1.1	266.7
Dec-20	1.0%	3,000	0.1	0.01	0.0	274.0	0.1	0.0	274.1
Jan-21	1.0%	3,000	0.1	0.01	0.0	274.0	0.1	0.0	274.1
Feb-21	2.0%	6,000	0.2	0.02	0.0	247.5	0.2	1.1	248.8
Mar-21	6.0%	18,000	0.5	0.07	0.0	274.0	0.6	1.5	276.1
Apr-21	9.0%	27,000	0.8	0.11	0.0	265.2	0.9	2.5	268.6
May-21	13.0%	39,000	1.1	0.16	0.0	274.0	1.3	3.2	278.5
Total	**100%**	**300,000**	**8.8**	**1.2**	**0.0**	**3,226.0**	**10.1**	**29.3**	**3,265.4**

Total Maximum Material Mined =	300,000	tons per year
Moisture Content =	4.0%	
Maximum Dust Control =	1.2	ac-ft

Notes:
This table uses estimated dewatering rates by NCCI.
Evaporative Consumptive Use from Table 1.

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Table No. 3
Water Balance - Anticipated Operations
Northern Colorado Constructors, Inc.
NCCI Bennett Pit

Month	Total Consumptive Use (ac-ft) (A)	Total Lagged Stream Depletions (ac-ft) (B)	Dewater Return Accretions (ac-ft) (C)	Transit Losses (D)		Lease Water (E)		Net River Balance (ac-ft) (F)
				Minimum Loss - Fort Lupton WWTP (ac-ft)	Maximum Loss - Perry Pit (ac-ft)	Minimum Lease - Fort Lupton WWTP (ac-ft)	Maximum Lease - Perry Pit (ac-ft)	
Jun-19	279.4	119.3	265.2	0.0	0.0	0.0	0.0	145.9
Jul-19	288.6	198.1	274.0	0.0	0.0	0.0	0.0	75.9
Aug-19	287.7	219.2	274.0	0.0	0.0	0.0	0.0	54.8
Sep-19	277.1	224.0	265.2	0.0	0.0	0.0	0.0	41.2
Oct-19	284.7	240.2	274.0	0.0	0.0	0.0	0.0	33.8
Nov-19	266.7	236.0	265.2	0.0	0.0	0.0	0.0	29.2
Dec-19	274.1	247.2	274.0	0.0	0.0	0.0	0.0	26.8
Jan-20	274.1	251.6	274.0	0.0	0.0	0.0	0.0	22.4
Feb-20	257.7	239.4	256.3	0.0	0.0	0.0	0.0	16.9
Mar-20	276.1	259.8	274.0	0.0	0.0	0.0	0.0	14.2
Apr-20	268.6	254.9	265.2	0.0	0.0	0.0	0.0	10.3
May-20	278.5	266.5	274.0	0.0	0.0	0.0	0.0	7.5
Total	**3,313.3**	**2,756.1**	**3,234.9**	**0.0**	**0.0**	**0.0**	**0.0**	**478.7**
Jun-20	271.6	261.0	265.2	0.0	0.0	0.0	0.0	4.1
Jul-20	280.6	272.0	274.0	0.0	0.0	0.0	0.0	2.0
Aug-20	279.9	273.3	274.0	0.0	0.0	0.0	0.0	0.7
Sep-20	269.3	264.8	265.2	0.0	0.0	0.0	0.0	0.4
Oct-20	276.9	273.6	274.0	0.0	0.0	0.0	0.0	0.4
Nov-20	266.7	264.5	265.2	0.0	0.0	0.0	0.0	0.6
Dec-20	274.1	272.8	274.0	0.0	0.0	0.0	0.0	1.2
Jan-21	274.1	272.8	274.0	0.0	0.0	0.0	0.0	1.2
Feb-21	248.8	247.1	247.5	0.0	0.0	0.0	0.0	0.4
Mar-21	276.1	274.4	274.0	0.0	0.0	0.4	0.4	0.0
Apr-21	268.6	266.5	265.2	0.0	0.1	1.4	1.5	0.0
May-21	278.5	276.5	274.0	0.1	0.2	2.5	2.6	0.0
Total	**3,285.4**	**3,219.2**	**3,226.0**	**0.2**	**0.3**	**4.4**	**4.5**	**11.0**

Notes:

(A) Total consumptive use from mining operations.

(B) Output from IDSAWAS Version 1.5.85.

(C) 100% of dewatering volume returned to river, data same as "Total Pumped from Dewatering Wells" displayed in Table 2.

(D) Transit loss will be assessed when lease water is needed. Water will be released from either Fort Lupton's wastewater treatement plan (WWTP) or Perry Pit. The distance from the Bennett Pit to Fort Lupton's WWTP and Perry Pit is 7 miles and 12 miles, respectively. The transit losses are assessed as 0.5% per mile.

(E) Lease water from Fort Lupton. Minimum and maximum projected lease values are included. The minimum lease assumes all releases are from the WWTP; the maximum assumes all releases are from the Perry Pit which is further upstream and has higher transit losses.

(F) Net River Balance, (E)+(C)-(B)+(D). This assumes the lease water is released from Perry Pit.

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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)

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