COLORADO
Division of Water Resources
Department of Natural Resources

May 23, 2019

Mr. David M. Heintz, P.E.
Bishop-Brogden Associates, Inc.
333 West Hampden Ave, Ste 1050
Englewood, CO 80110

Re: Martin Marietta's Parsons Mine Substitute Water Supply Plan
(WDID 0302583, Plan ID 5822)
DRMS File No. M-2009-082 (WDID 0303045)
Sections 25 and 36, T6N, R67W, 6th P.M., and Sections 30 and 31, T6N, R66W, 6th P.M.
Water Division 1, Water District 3, Weld County

Approval Period: June 1, 2019 through May 31, 2020
Contact information for Mr. Heintz: 303-806-8952; dheintz@bbawater.com

Dear Mr. Heintz:

We have reviewed your letter dated April 12, 2019 requesting approval of a substitute water supply plan ("SWSP") on behalf of Martin Marietta ("Applicant" or "MM") in accordance with § 37-90-137(11), C.R.S., to cover depletions caused by an existing gravel pit operation known as the Parsons Mine (M-2009-082). The required renewal fee of $257 has been received (receipt no. 3691382). The Applicant shall be responsible for compliance with this SWSP, but the State Engineer's Office may also pursue the landowner for eventual compliance.

SWSP Operations

The Parsons Mine is located along the Cache la Poudre River in Sections 25 and 36, Township 6 North, Range 67 West of the 6th P.M., and Sections 30 and 31, Township 6 North, Range 66 West of the 6th P.M., as shown on the attached Figure 1. Mining operations will occur in several phases and are expected to last approximately 5 years. Due to restrictions related to eagle nesting habitat, MM will mine different areas of the site during different times of the year. MM plans to continue mining Phase 2 for the duration of this plan period, and to begin mining Phase 4 starting in June 2019 and continuing for the duration of this plan period. MM also plans to begin mining Phase 1B in August 2019 and continuing through the end of November 2019. All phases of the mine will be continuously dewatered for the entire plan period. The depletions that are projected to result from the mining operations over the period of this SWSP include evaporation from exposed groundwater, water removed with the mined product, and water used for dust suppression. The proposed replacement sources are a combination of 12 Whitney Ditch shares owned by MM, water stored in MM's Heaton Reservoir, excess reusable effluent leased from the City of Greeley, and/or water stored in MM's 35th Avenue Reservoir.

Depletions

The exposed groundwater surface area at the site consists of 0.37 acres of groundwater exposed in a 2,000 feet long × 8 feet wide dewatering trench around Phase 1A, 0.39 acres of groundwater exposed in a 2,100 feet long × 8 feet wide dewatering trench around Phase 2, and 11.15 acres exposed in a silt pond in Phase 1C, and for a total of 11.90 acres. Beginning in June 2019, it is anticipated that an additional 0.69 acres of groundwater will be exposed as mining begins in the Phase 4 mining area, for a total of 12.59 acres of exposed groundwater. Beginning in August 2019, as mining begins in the Phase 1B mining area, it is expected that an additional 2.06 acres will be exposed for a total of 14.66 acres of exposed groundwater.

Net evaporative depletions were calculated using a gross annual evaporation of 3.51 feet (42.12 inches) from the exposed water surface, with a credit of 0.84 feet (10.08 inches) for effective precipitation, based on average annual precipitation of 1.20 feet (14.42 inches) for the Greeley UNC weather station. Computation of evaporation under this plan may be reduced during the ice-covered period. You have anticipated the ice-covered period to occur during the months of December and January based on below-freezing average monthly temperatures for the Greeley UNC weather station. The ice-covered periods may be used to reduce the amount of evaporative losses that need to be replaced; however, for the purposes of this SWSP, the Applicant shall replace the net evaporation depletions from the exposed groundwater surface area that may occur during the anticipated ice-covered period (December through January) for any time that the exposed groundwater surface is not completely covered by ice. Computation of the net evaporation during any time that the exposed groundwater surface 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. The net depletion of groundwater due to evaporation is projected to total 37.38 acre-feet during this plan period, as shown on the attached Table 1 (assuming no ice cover).

Operational losses associated with mining activities will include water removed with the mined product and water used for dust control. MM estimates that they will mine a total of 565,200 tons of material during this plan period. Of this total estimated amount of mined material, 85,200 tons of aggregate is anticipated to be crushed (not washed) and 480,000 tons is anticipated to be washed. All of the material will be mined below the groundwater table, but in a dewatered state. The water retained by the crushed aggregate is considered to be 2% of the mined material by weight, and the water retained by the washed material is considered to be 4% of the mined material by weight. This results in a total groundwater loss of 15.37 acre-feet.

The Applicant has estimated that a total of 18.26 acre-feet of water will be required for dust control purposes at the site during this plan period. MM plans to pump all dust suppression water from the Phase 1C mining area. MM also has an agreement with the North Weld County Water District which allows MM to pump municipal water from a nearby hydrant to use for dust suppression purposes if necessary. However, for the purposes of this SWSP, you have assumed that all water for dust suppression purposes will be groundwater pumped from the Phase 1C mining area. Water used for dust control purposes is assumed to be 100% consumed.

The total consumptive use at this site during the period of this SWSP is 71.02 acre-feet. A monthly breakdown of evaporative and operational consumptive use is given in the attached Table 1.

The Alluvial Water Accounting System (AWAS) program developed by the Integrated Decision Support (IDS) Group at Colorado State University was used to lag depletions from evaporation and operational losses at the mine site to the Cache la Poudre River. The model requires the following

parameters: distance (X) from the centroid to the river, aquifer width (W), transmissivity (T), and specific yield (S). The Parsons Mine was split into four different areas, designated Areas A, B, C and D, as shown on the attached Figure 1, in order to more accurately determine the lagged depletions from the site. The aquifer parameters used for each area are listed in the table below:

Aquifer Parameters – Depletion Areas

Area	X (ft)	W (ft)	T (gpd/ft)	S
A	2,176	9,823	85,000	0.15
B	208	9,946	85,000	0.15
C	297	10,816	85,000	0.15
D	2,636	10,810	85,000	0.15

As shown in the attached Figure 1, Phases 1A and 1B are located within Area A, Phase 1C and Phase 2 are located within Area D, and Phase 4 is located within Area C.

The total lagged depletions for the Parsons Mine site were determined to be 68.67 acre-feet for this plan period. This amount includes lagged depletions resulting from past consumptive use at the site that are projected to impact the river during this plan period. A monthly breakdown of total lagged depletions is shown in the attached Table 1.

Dewatering

With the exception of the silt pond, all phases of the mine will be continuously dewatered for the entire plan period. As long as the mine site is continuously dewatered, the water returned to the stream system should be adequate to offset the depletions attributable to dewatering operations. MM is not planning to use any dewatering credits for replacement purposes of depletions at the Parsons Mine or at any other site under this SWSP. Totalizing flow meters must be installed at each discharge location and meter readings must be reported on the submitted accounting. The meter readings will be used in calculating the post-pumping depletions that must be replaced if dewatering ceases at the site during mining operations and/or upon the conclusion of mining operations at the site.

Replacements

The operator proposes to provide replacement for this pit using consumptive use credits from 12 shares of Whitney Ditch owned by MM delivered either directly to the river for immediate credit or delivered to a recharge pond (Parsons Mine Recharge Area, WDID 0302067) for lagged recharge accretion credits. In addition, MM proposes to use water stored in the Heaton Reservoir under case no. 2001CW193, as well as any excess fully consumable water leased from the City of Greeley available after use for replacement purposes in MM's SWSP for the 35th Avenue Pit, and/or free river water stored in MM's 35th Avenue Reservoir.

The decreed source for the water rights under the Whitney Ditch (WDID 0300930) is the Cache la Poudre River, and the decreed point of diversion for the Whitney Ditch is on the north side of the Cache la Poudre River in the NW¼ of the SE¼ of Section 19, T6N, R67W, 6th P.M., Weld County. During the period of this SWSP, MM will dry up a total of 130.8 acres attributed to the 12 Whitney Ditch shares, as shown on attached Figure 2. MM's 12 shares in the Whitney Ditch Company were changed for a variety of uses including augmentation/replacement in case no. 2008CW65. Case no. 2008CW65 relied on a ditch-wide analysis of the 320 total shares in the Whitney Ditch. Based on a study period of 1950 through 1995, the Court found that the average annual gross river diversion was 10,600.2 acre-feet per year, or 33.13 acre-feet per share. Total average annual farm headgate deliveries were found to be 9,010.2 acre-feet per year, or 28.16 acre-feet per share, based on a transit loss of 15% under the Whitney Ditch system. The ditch-wide analysis determined that the

overall average consumptive use was 4,400.9 acre-feet per year or 13.75 acre-feet per share, assuming a farm efficiency of 60%. In case no. 2002CW331, 8 shares historically used on 74 acres were previously found to have a river headgate diversion of 33.42 acre-feet per share and a consumptive use of 16.32 acre-feet per share (130.5 acre-feet total). After removing the consumptive use decreed for the 8 shares in case no. 2002CW331, the historical consumptive use for the remaining 312 shares was determined to be 4,270.4 acre-feet, or 13.69 acre-feet per share. For MM's 12 Whitney Ditch shares dedicated to this SWSP, the total average annual consumptive use would therefore equal to 164.25 acre-feet per year and 337.88 acre-feet of total deliveries. The ditch-wide analysis utilized a return flow split of 50% surface and 50% subsurface return flows. The return flows during the irrigation season will be calculated based upon a percentage of the actual monthly deliveries and winter return flows will be calculated based upon the total deliveries from the previous irrigation season as decreed in case no. 2008CW65. Eight (8) of 12 shares are located within Zone 2-A of the 2008CW65 decree, and the remaining 4 shares are located within Zone 2-B of the 2008CW65 decree. The decreed monthly return flow percentages for Zones 2-A and 2-B are shown on the attached Table 2, column 5.

The Whitney Ditch water rights will continue to be diverted in priority at the Whitney Ditch headgate during the historical irrigation season of April 1 through October 31. During the period of this SWSP, MM plans to deliver approximately 155.11 acre-feet of Whitney Ditch water to recharge ponds and approximately 90.92 acre-feet of the farm headgate deliveries directly back to the river. To date, two interconnected recharge ponds have been constructed in the NW¼ of the SW¼ of Section 30, T6N, R66W, 6th P.M. The ponds have a single inflow structure and individual staff gages. The maximum surface area of the pond(s) is 2.14 acres. The pond(s) will receive water from the Whitney Ditch using MM's existing headgates and infrastructure located as shown in Figure 3.

The IDS AWAS stream depletion model was used to determine the lagged accretion from the recharge area. The AWAS lagging parameters applied to the recharge pond(s) are shown in the table below.

Aquifer Parameters – Recharge Pond(s)

X (ft)	W (ft)	T (gpd/ft)	S
3,116	10,205	85,000	0.15

Continuous flow recorders and staff-gauges are required to accurately track daily inflow to the recharge pond(s). Augmentation credits are based on the amount of water determined to have been infiltrated into the ground based on the change in gage height, less any evaporative losses and plant consumption. The infiltrated water is then lagged to the stream using the AWAS program and aquifer parameters given above. The measuring and recording device used to deliver water to the recharge pond(s) has been approved by the water commissioner, and a staff gage has been installed in the pond(s) as required by the SEO's Recharge Protocol. A stage-capacity table was provided with the SWSP request. Net evaporative losses from the recharge pond(s) will be subtracted from the volume of water delivered to the pond(s) every day there is visible water in the pond(s). For the purpose of this SWSP, you have estimated annual net evaporation using the maximum surface area of 2.14 acres. Delivery of the projected 155.11 acre-feet to recharge during this plan period will result in 4.67 acre-feet of evaporative losses, leaving 150.43 acre-feet of accretions to be lagged to the river. Past and projected recharge deliveries will result in a lagged accretion of 128.09 acre-feet accruing to the river during this plan period. After accounting for 80.04 acre-feet of return flow obligations, the net recharge accretion projected to accrue to the river during this plan period is 48.05 acre-feet.

Approximately 90.92 acre-feet of the Whitney Ditch water will be delivered directly to the Cache la Poudre River, as shown on the attached Table 3, column 7. MM's Whitney Ditch deliveries

directly to the river will be made through MM's augmentation structure (Whitney Ditch Martin Marietta Return, WDID 0302923), as shown on the attached Figure 3. The deliveries will be measured at MM's augmentation structure and delivered back to Cache la Poudre River at the point shown in Figure 3. The return flow obligations associated with Whitney Ditch water direct deliveries were determined to total 48.70 acre-feet calculated based on the return flow percentages for Zones 2-A and 2-B decreed in case no. 2008CW65, shown on Table 2, column 5, leaving 42.22 acre-feet of water available for replacement.

Water stored in the Heaton Reservoir under the junior water right decreed in case no. 2001CW193 may also be used by exchange as a replacement source for depletions associated with Parsons Mine and other MM sites within the South Platte Basin under separate SWSPs. Heaton Reservoir (WDID 0504089) is located in Section 9, T2N, R68W, 6th P.M. Water stored under the right decreed in case no. 2001CW193 is delivered to the reservoir through the Rural Ditch (WDID 0600551). The date of appropriation for the Heaton Reservoir storage right is October 26, 2001 for 680 acre-feet, conditional, subject to the right to fill and refill as described in case no. 2001CW193. Replacement water will be pumped from Heaton Reservoir directly into the St. Vrain River just downstream of the confluence with Boulder Creek. Replacement made out of Heaton Reservoir provides replacement supply that is conveyed to the South Platte River at the confluence of the Cache la Poudre River, downstream of the point of depletion on the Cache la Poudre River. The downstream replacement is allowed at times when the call is downstream of Heaton Reservoir and there is no dry up point between the point of depletion on the Cache la Poudre and the confluence with the South Platte River. The Applicant will need to obtain permission from the District 5 Water Commissioner prior to any credit for releases from Heaton Reservoir to ensure the Heaton Reservoir water can make it past any dry up locations between the confluence of Boulder Creek and the St. Vrain River to the confluence of the Cache la Poudre River and the South Platte River. The delivery schedule incorporates a transit loss of 18.25% based on the currently assessed rate of 0.5% per mile for a distance of 36.5 miles. If a different transit loss is determined by the division engineer or water commissioner, the Applicant must modify their accounting and replacements as necessary to be consistent with the determined transit loss.

Under this SWSP, MM requests the ability to use any excess fully consumable water leased from the City of Greeley ("Greeley") not required for replacement purposes in the MM's SWSP for the 35th Avenue Pit (WDID 0302546) for replacement purposes under this SWSP. MM's predecessor, Lafarge West, Inc., traded its 550 Boyd and Freeman Ditch shares for 125 acre-feet of augmentation water from Greeley. MM acquired this lease from Lafarge as part of their acquisition of the Greeley 35th Ave Pit. The lease allows MM to use this water to cover depletions at Greeley 35th Ave Pit and surrounding land. A copy of the lease has been provided to this office. To the extent that excess fully consumable water is available, the leased replacement water may also be used to replace depletions at Parsons Mine. Fully consumable replacement water provided by Greeley will be returned to the river at one of the following locations:

a) Greeley Water Pollution Control Facility Outfall (WDID 0302312) located on the Cache la Poudre River;

b) JBS Swift Industrial WWTP Outfall (WDID 0102342) on Lone Tree Creek;

c) confluence of the 35th Avenue Drainage Ditch and Cache la Poudre River;

d) any augmentation station/release structure(s) to be constructed in the vicinity of such confluence and associated with Greeley's operation of reservoirs knows as Flatiron Reservoir Nos. 1-5 (a.k.a. Poudre Ponds/Greeley West Pit/Greeley 25th Ave Pit);

e) an augmentation station/release structure located under the Boyd and Freeman Ditch and approved by the water commissioner and division engineer for such purpose;

f) release structures from Greeley Canal No. 3 as described in Greeley's decree in case no. 99CW232, or;

g) any other release and measurement point that Greeley and MMM agree upon.

The Applicant also requests the ability to use water stored in the Greeley 35th Ave Reservoir (WDID 0303844) under free river conditions as a replacement source under this SWSP request. The Greeley 35th Ave Reservoir is located approximately 7.5 miles downstream of the Parsons Mine, in the western half of the Greeley 35th Ave Pit. MM stored water in the Greeley 35th Ave Reservoir under free river conditions in 2018 and 2019, with the approval of the water commissioner. Water will be pumped directly from the reservoir to the Cache la Poudre River at the westernmost border of the Greeley 35th Ave Pit. Water pumped from the Greeley 35th Ave Reservoir will not be used for replacement purposes under this SWSP without prior approval from the District 3 water commissioner.

The Applicant is required to coordinate with the appropriate water commissioner the delivery location of replacement water to ensure out-of-priority depletions are adequately replaced to prevent injury to other water rights. **Excess fully consumable water leased from Greeley cannot be used for replacement of depletions from the Parsons Mine without <u>prior</u> approval from the water commissioner.** Conveyance loss for delivery of augmentation water is subject to assessment and modification as determined by the water commissioner or division engineer.

Use of Excess Credits

The Applicant has proposed to use excess replacement credit associated with their subject 12 Whitney Ditch shares in their other gravel pit SWSPs approved pursuant to § 37-90-137(11), C.R.S., to the extent such excess replacement credit exists. The Applicant must provide written notice to the Division Engineer and Water Commissioner at least 30 days in advance of the desired commencement of use of the excess replacement credits, which must include the specific plan in which the credits will be used, the provision in the plan that allows an unnamed source to be added for credit, the annual and monthly amount of excess replacement credit available, the location at which the water will be delivered to the stream, and a copy of a lease agreement between the Applicant and the purchaser of the excess replacement credits if the additional plan is not owned by the Applicant. **The Applicant cannot claim credit for the use of the excess replacement credits in any other plan until they have received written approval from the Division Engineer or Water Commissioner.** Any use of any such excess replacement credits must continue to be directly related to the mining of sand and gravel.

Long Term Augmentation

The original DRMS final reclamation plan for the site was developed by MM's predecessor, Lafarge West, Inc. The 2009 reclamation plan shows a mixture of the pits being reclaimed to open water ponds or wetlands, with approximately 60 acres of the site covered with water once reclamation is complete. Based on information previously received by this office, MM plans to revise the final reclamation plan and it is expected that a large majority, if not all, mined areas will either be backfilled or lined in order to minimize any long-term exposed groundwater 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.

On June 11, 2018, DRMS approved the Technical Revision No. 1 application which removed the permit stipulation to have the financial warranty only cover the cost to reclaiming one year's worth of disturbance and exposure to groundwater, and complied with the long-term augmentation requirement by submitting a financial warranty to install a slurry wall around all 10 lakes at the site.

In accordance with the approach in Technical Revision No. 1, an increased bond has been obtained for $4,168,714.00 through the DRMS.

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 shall be valid for the period of June 1, 2019 through May 31, 2020, unless otherwise revoked or superseded by decree. If a court decreed plan for augmentation is not obtained for the proposed uses by the SWSP expiration date, a renewal request must be submitted to this office with the statutory fee of $257 no later than April 1, 2019. 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 the $1,593 filing fee will apply.
2. Well permit no. 80245-F was 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 Parsons Mine site must not exceed 12.59 acres for the months of June and July 2019, and 14.66 acres for the period of August 2019 through May 2020, which results in an annual net evaporative loss of 37.38 acre-feet.
4. The annual amount of water used for operational purposes at the Parsons Mine site shall not exceed 33.63 acre-feet, estimated as 18.26 acre-feet for dust suppression and 15.37 acre-feet lost with the production of 565,200 tons of mined aggregate (85,200 tons crushed but not washed and 480,000 tons washed).
5. Total consumption at the Parsons Mine 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 historical consumptive use credit given (e.g., agricultural water transfer) for this site must consider all previous credits given.
7. All releases of replacement water must be sufficient to cover all out-of-priority depletions in time, place, and amount and must be made under the direction and/or the approval of the water commissioner. The release of replacement water may be aggregated to maximize beneficial use. The water commissioner and/or the division engineer shall determine the rate and timing of an aggregated release.
8. The water attributable to the 12 shares of the Whitney Ditch that will be used for direct replacements must continue to be diverted in-priority at the ditch then measured back to the Cache la Poudre River in the vicinity of the Parsons Mine. Adequate measuring devices acceptable to the water Commissioner must be installed.
9. 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.

10. Computation of evaporation under this plan may be reduced during the ice-covered period. You have anticipated the ice-covered period to occur during the months of December and January. 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 anticipated ice-covered period (the months of December and January) for any time that the exposed water surfaces are not completely covered by ice.

11. 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.

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

    In the event that excess fully consumable water from the City of Greeley is used as a replacement water source under this SWSP, the Applicant shall verify that the entity making replacements (City of Greeley) has included the Applicant on their accounting and submitted their accounting to the division office and the water commissioner.

13. **Prior to the use of the Heaton Reservoir, Greeley effluent, or Greeley 35th Ave Reservoir water, the Applicant is required to notify the water commissioner and obtain the water commissioner's approval at least 48 hours prior to use, or less if allowed by the water commissioner**. The applicant is required to obtain the water commissioner's approval on a daily basis or other interval as required by the water commissioner. These replacement supplies may only be used at times when there is a continuous live stream between a downstream replacement location and the point of depletion and there is no call for water within that reach.

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

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

16. 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.

17. 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.

18. Approval of this SWSP is contingent on the dry-up of the 130.8-acre portion of the Applicant's property as shown on the attached Figure 2. The lands to be dried up shall be monumented by the Applicant to the satisfaction of the water commissioner. In accordance with the attached *Administration Protocol - Dry-Up of Irrigated Land* the Applicant shall provide an affidavit to the water commissioner and division engineer that confirms dry-up during the 2019 irrigation season **by October 31, 2019**. A GIS shapefile outlining the dry-up must accompany the affidavit and be emailed to DNR_Div1Accounting@state.co.us. The shapefile shall include the WDID of the plan, a delineation of the dried-up land, the acreage of dry-up, and any accompanying metadata. In addition, the datum must be NAD83 and the UTM projection must be Zone 13.

19. Dewatering at this site will produce delayed depletions to the stream system. As long as the site is continuously dewatered, the water returned to the stream system should be adequate to offset the depletions, thus dewatering is required to continue during the term of this plan. Once dewatering at the sites cease, the delayed depletions must be addressed, including depletions resulting from the gradual refilling of the pit. At least three years prior to completion of dewatering, a plan must be submitted that specifies how the post pumping dewatering depletions will be replaced, in time, place and amount.

20. If dewatering of the site is discontinued, the pit would fill creating additional depletions to the stream system due to increased evaporation. To assure that additional depletions to the river do not occur, a bond for $4,168,714.00 through the DRMS for the construction of a slurry wall to prevent exposure of groundwater has been obtained. Therefore, if the dewatering is discontinued the bond can finance the completion of the construction of a slurry wall, thus preventing depletions to the stream system.

21. 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.

22. 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.

23. 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 if the substitute supply is of a quality to meet requirements of use to which the senior appropriation receiving the substitute supply has normally been put. As such, water quality data or analyses may be requested at any time to determine if the requirement of use of the senior appropriator is met.

24. 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 SWSPs or in any proposed renewal of this SWSP, and shall not imply concurrence with any findings of fact or conclusions of law contained herein, or with the engineering methodologies used by the Applicant.

If you have any questions concerning this approval, please contact Javier Vargas-Johnson in Denver at (303) 866-3581 or Michael Hein in Greeley at (970) 352-8712.

Sincerely,

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

Attachments: Figures 1-3
Tables 1-3
Augmentation Plan Accounting, Recharge, and Dry-up Protocols
Letter from DRMS dated April 30, 2010

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

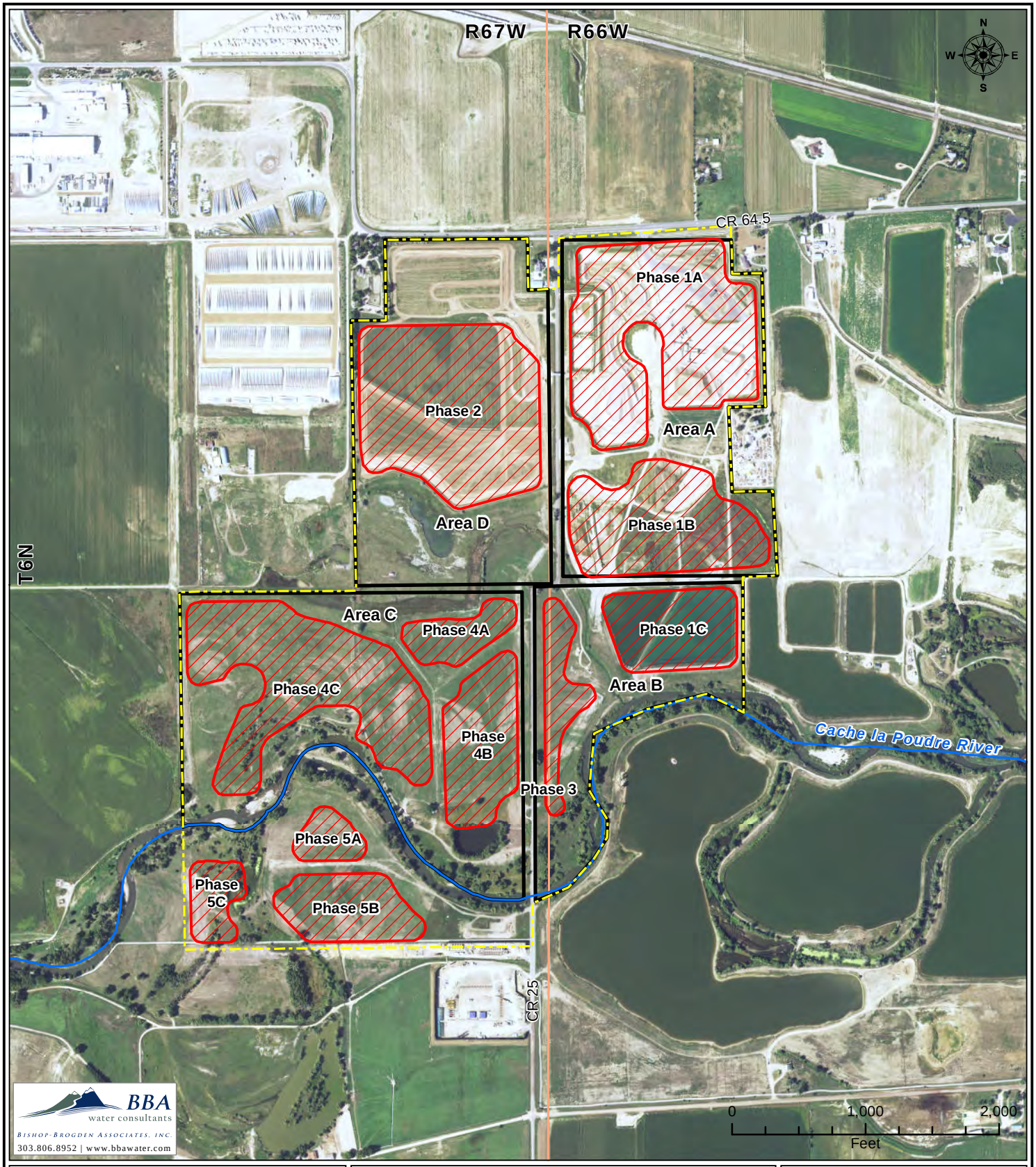
Mark Simpson, Water Commissioner, District 3, Mark.Simpson@state.co.us

Shera Sumerford, Water Commissioner, District 5, Shera.Sumerford@state.co.us

Bob Carlson, Water Commissioner, District 6, Bob.Carlson@state.co.us

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

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



BBA water consultants
Bishop-Brogden Associates, Inc.
303.806.8952 | www.bbawater.com

Figure 1
Martin Marietta Parsons Mine Mining Phases

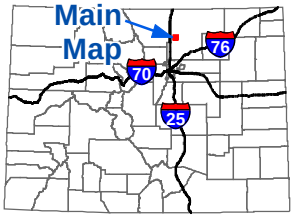
Date: 3/22/2018 | Job No. 1204.09

Legend

- Planned Mining Phases
- Parsons Mine Lagging Areas
- DRMS Permit Boundary

Aerial Photo Date: 8/27/2017, USDA, NAIP
Data Source: CDSS, CDWR, USGS, BLM

Colorado



BBA water consultants
Bishop-Brogden Associates, Inc.
303.806.8952 | www.bbawater.com

Dry-Up Area = 130.8 acres

Figure 2
Martin Marietta
Parsons Mine
Whitney Ditch
Dry-Up Area

Date: 3/22/2018 | Job No. 1204.09

Legend

- Parsons Mine Dry-Up Area (130.8 ac.)
- Parsons Mine Lagging Areas
- DRMS Permit Boundary

Aerial Photo Date: 8/27/2017, USDA, NAIP
Data Source: CDSS, CDWR, USGS, BLM

Colorado

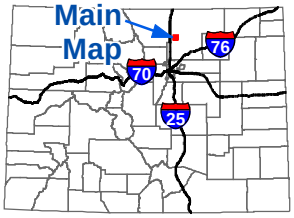


Figure 3
Martin Marietta Parsons Mine
General Location Map

Date: 3/29/2018 | Job No. 1204.09

Legend

- Headgate
- Augmentation Point of Delivery
- Augmentation Structure (Approx.)
- Parsons Mine Lagging Areas
- DRMS Permit Boundary
- Recharge Ponds

Aerial Photo Date: 8/27/2017, USDA, NAIP
Data Source: CDSS, CDWR, USGS, BLM

Colorado

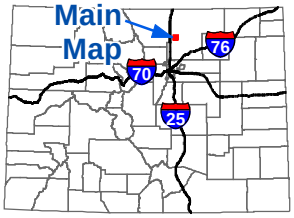


Table 1
Martin Marietta
2019-2020 Parsons Mine SWSP Accounting
Total Operational Depletions

	Evaporation Depletions						Production Depletions						
							Aggregate Production (tons)						
Month	Total Exposed Area (ac) [1]	Gross Evaporation (feet) [2]	Average Total Precipitation (feet) [3]	Effective Precipitation (feet) [4]	Net Evaporation (feet) [5]	Total Net Evaporation Volume (ac-ft) [6]	Crushed (Not Washed) [7]	Washed [7]	Aggregate Production Consumption (ac-ft) [8]	Dust Suppression (ac-ft) [9]	Total Production Consumption (ac-ft) [10]	Total Site Depletions (ac-ft) [11]	Total Lagged Depletions (ac-ft) [12]
Jun-19	12.59	0.51	0.15	0.11	0.40	5.07	7,100	40,000	1.28	2.30	3.58	8.66	8.88
Jul-19	12.59	0.53	0.13	0.09	0.44	5.51	7,100	40,000	1.28	2.30	3.58	9.09	9.40
Aug-19	14.66	0.47	0.11	0.08	0.39	5.78	7,100	40,000	1.28	2.30	3.58	9.37	8.17
Sep-19	14.66	0.35	0.10	0.07	0.28	4.14	7,100	40,000	1.28	2.30	3.58	7.72	7.28
Oct-19	14.66	0.25	0.09	0.06	0.18	2.70	7,100	40,000	1.28	2.30	3.58	6.28	6.21
Nov-19	14.66	0.14	0.06	0.04	0.10	1.43	7,100	40,000	1.28	1.53	2.82	4.24	4.45
Dec-19	14.66	0.11	0.04	0.03	0.08	1.11	7,100	40,000	1.28	0.61	1.89	3.00	4.03
Jan-20	14.66	0.11	0.04	0.03	0.08	1.14	7,100	40,000	1.28	0.54	1.82	2.95	2.67
Feb-20	14.66	0.12	0.03	0.02	0.10	1.45	7,100	40,000	1.28	0.54	1.82	3.27	2.89
Mar-20	14.66	0.19	0.08	0.06	0.13	1.97	7,100	40,000	1.28	1.07	2.36	4.33	3.84
Apr-20	14.66	0.32	0.15	0.10	0.21	3.09	7,100	40,000	1.28	1.23	2.51	5.60	4.98
May-20	14.66	0.42	0.21	0.15	0.27	3.99	7,100	40,000	1.28	1.23	2.51	6.50	5.87
Total	-	3.51	1.20	0.84	2.67	37.38	85,200	480,000	15.37	18.26	33.63	71.02	68.67

Notes:

[1] The total area of exposed ground water at the site consist of the dewatering trenches and silt pond.

[2] Total gross evaporation (3.51 feet) is based upon NOAA Technical Report NWS 33 and distributed according to SEO Senate Bill 89-120 criteria.

November: 4.0%	February: 3.5%	May: 12.0%	August: 13.50%
December: 3.0%	March: 5.5%	June: 14.5%	September: 10.0%
January: 3.0%	April: 9.0%	July: 15.0%	October: 7.0%

[3] Based upon the average precipitation at the Greeley UNC, CO (ID#3553) NOAA weather station for the time period 1967-2015.

[4] Assumed 70% effective precipitation. Equal to [4] x 70%.

[5] Equal to [2] - [4]. There is no evaporation December and January due to below-freezing average monthly temperatures.

[6] Equal to [1] x [5].

[7] Aggregate production from mining is based upon information from MM.

[8] Aggregate production from mining is based upon information from MM. Water retained in product equals 4% of total weight of washed aggregate produced and 2% of total weight of crushed aggregate produced as defined by Senate Bill 89-120.

[9] Dust suppression values provided by MM.

[10] Equal to [8] + [9].

[11] Equal to depletions associated with each lagging area. All dust suppression water [9] will be pumped from Area B. Other depletions for all areas include evaporation [6] and mining production [8] depending on which area mining occurs in for a given month.

[12] Equal to values from [11] lagged based upon specific lagging parameters designated to each lagging area. Lagging calculations were based on the following lagging area parameters:

Area A - Distance from stream = 2,176 ft, Transmissivity = 85,000 gpd/ft, Specific Yield = 0.15, Aquifer Width = 9,823 ft

Area B - Distance from stream = 208 ft, Transmissivity = 85,000 gpd/ft, Specific Yield = 0.15, Aquifer Width = 9,946 ft

Area C - Distance from stream = 297 ft, Transmissivity = 85,000 gpd/ft, Specific Yield = 0.15, Aquifer Width = 10,816 ft

Area D - Distance from stream = 2,636 ft, Transmissivity = 85,000 gpd/ft, Specific Yield = 0.15, Aquifer Width = 10,810 ft

Table 2
Martin Marietta
2019-2020 Parsons Mine SWSP Accounting
Recharge Pond Operations
(all values in ac-ft)

Month	Whitney Ditch FHG Deliveries to Recharge Pond	Estimated Recharge Ponds Evaporation	Net Recharge	Total Lagged Recharge Credit Accretion	Return Flow Factor(%)		Return Flow Obligations	Net Recharge Accretion
					Zone 2-A	Zone 2-B		
	[1]	[2]	[3]	[4]	[5]		[6]	[7]
Jun-19	30.00	0.86	29.14	7.78	43.76%	39.87%	12.74	-4.96
Jul-19	35.00	0.94	34.06	12.62	41.18%	34.64%	13.65	-1.03
Aug-19	35.00	0.84	34.16	16.46	45.53%	37.25%	14.97	1.49
Sep-19	30.00	0.60	29.40	18.76	55.44%	48.08%	15.90	2.87
Oct-19	3.05	0.39	2.66	18.05	47.79% | 1.65%	47.79% | 2.01%	4.12	13.94
Nov-19	0.00	0.00	0.00	13.22	0.86%	1.85%	1.79	11.43
Dec-19	0.00	0.00	0.00	9.80	0.59%	1.59%	1.38	8.42
Jan-20	0.00	0.00	0.00	7.75	0.45%	1.37%	1.13	6.62
Feb-20	0.00	0.00	0.00	6.38	0.37%	1.19%	0.96	5.42
Mar-20	0.00	0.00	0.00	5.64	0.28%	1.03%	0.80	4.84
Apr-20	2.46	0.45	2.01	5.35	65.84%	89.36%	1.81	3.54
May-20	19.60	0.58	19.01	6.26	54.62%	55.84%	10.78	-4.52
Total	155.11	4.67	150.43	128.09	-	-	80.04	48.05

Notes:
[1] Total average farm headgate deliveries of Whitney Ditch water delivered to the recharge pond.
[2] Evaporation calculated based on total maximum recharge pond surface area of 2.14 acres when diversions are being made and monthly evaporation rates shown in Column 5 of Table 1.
[3] Equals [1] - [2].
[4] Lagging calculations were based on the following parameters:
Distance from stream = 3,116 ft, Transmissivity = 85,000 gpd/ft, Specific Yield = 0.15, Aquifer Width = 10,205 ft
[5] Return flow factors are based on Case No. 08CW65 decree for Zone 2-A and 2-B.
[6] April-September = [1] x [5], October = [1] x [5] + (2019 Deliveries x [5]), November-March = (2019 Deliveries x [5]). Pro-rata deliveries associated with each return flow zone are calculated based upon (8/12) x [1] to Zone 2-A and (4/12) x [1] to Zone 2-B.
[7] Equals [4] - [6].

Table 3
Martin Marietta
2019-2020 Parsons Mine SWSP Accounting
Water Balance
(all values in ac-ft)

Month	Total Lagged Operational Depletions [1]	Percent of Month Call on the River (%) [2]	Total Replacement Requirements [3]	Whitney Ditch FHG Credit Available for Use [4]	Whitney Ditch Water Delivered to Recharge [5]	Net Recharge Accretion [6]	Whitney Ditch Water Delivered to River [7]	Return Flow Requirements for Deliveries to River [8]	Net Accretion from Deliveries to River [9]	Deliveries from Storage in Heaton Reservoir [10]	Transit Loss for Deliveries from Heaton Reservoir [11]	Net Replacement from Deliveries from Heaton Reservoir [12]	Excess Greeley Lease Water from 35th Ave. Site [13]	Deliveries from Storage in 35th Avenue Reservoir [14]	Net Effect to the River [15]
Jun-19	-8.88	100%	-8.88	55.42	30.00	-4.96	24.05	-10.21	13.84						0.00
Jul-19	-9.40	100%	-9.40	93.92	35.00	-1.03	17.09	-6.66	10.42						0.00
Aug-19	-8.17	100%	-8.17	84.87	35.00	1.49	11.66	-4.99	6.68						0.00
Sep-19	-7.28	100%	-7.28	49.02	30.00	2.87	9.40	-4.98	4.42						0.00
Oct-19	-6.21	100%	-6.21	3.05	3.05	13.94	0.00	-1.55	-1.55						6.18
Nov-19	-4.45	100%	-4.45		0.00	11.43	0.00	-1.05	-1.05						5.93
Dec-19	-4.03	100%	-4.03		0.00	8.42	0.00	-0.81	-0.81						3.57
Jan-20	-2.67	100%	-2.67		0.00	6.62	0.00	-0.66	-0.66						3.28
Feb-20	-2.89	100%	-2.89		0.00	5.42	0.00	-0.56	-0.56						1.96
Mar-20	-3.84	100%	-3.84	0.13	0.00	4.84	0.13	-0.47	-0.34						0.67
Apr-20	-4.98	100%	-4.98	8.76	2.46	3.54	5.48	-4.04	1.44						0.00
May-20	-5.87	100%	-5.87	42.70	19.60	-4.52	23.11	-12.72	10.39						0.00
Total	-68.67	-	-68.67	337.88	155.11	48.05	90.92	-48.70	42.22	0.00	0.00	0.00	0.00	0.00	21.60

Notes:
[1] Total lagged depletions from mining operations, as calculated in Table 1.
[2] Equal to percent of the month in which a call is placed on the river.
[3] Equal to [1] x [2].
[4] Farm headgate deliveries available for use of specified 12 Whitney Ditch shares based upon ditch wide analysis decreed in Case No. 08CW65.
[5] Whitney Ditch farm headgate deliveries delivered to the recharge pond.
[6] Net recharge accretion calculated in Column [7] of Table 2.
[7] Whitney Ditch farm headgate deliveries delivered directly to the river through MM's augmentation structure.
[8] Return flow requirements are calculated using return flow factors decreed in 08CW65, and shown in Column [5] of Table 2.
[9] Equal to [7] + [8].
[10] Total replacement supply deliveries from storage in Heaton Reservoir.
[11] Transit loss between the point of delivery on Boulder Creek to the confluence of the South Platte River and Cache La Poudre River is assumed to be 18.25 % based upon a total distance of 36.5 miles and a typical transit loss rate of 0.5% per mile.
[12]Equal to [10] + [11].
[13] Replacement supply using excess City of Greeley effluent lease credits currently used under MM's Greeley 35th Avenue SWSP (WDID 0302945).
[14] Total replacement supply deliveries from storage in MM's 35th Avenue Reservoir.
[15] Equal to [3] + [6] + [9] + [12] + [13] = [14].

ADMINISTRATION PROTOCOL
Augmentation Plan Accounting
Division One – South Platte River

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

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

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

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

iv. The well meter serial readings for each meter shall be included if there is more than one meter on a well.

b. Each **recharge site** must comply with the *Administration Protocol - Recharge* and must report the:

i. daily volume in AF diverted into the site;

ii. monthly volume in AF released from the site;

iii. monthly net evaporative loss in AF;

iv. volume of water in AF remaining at the end of the month.

c. The accounting must identify each source of **fully consumable replacement water** actually delivered to the location impacted by the depletions. To demonstrate the water was actually delivered to the required location will require the following information:

i. the originating source of the water, date released and volume of water released;

ii. transportation losses to point of diversion or use, if any, using stream loss factors approved by the water commissioner;

iii. the volume of water actually delivered on a daily basis past any surface water diversion that was sweeping the river as corroborated by the water commissioner.

(See *Administration Protocol – Delivery of Water* for more details on delivering water.)

d. For each source of **replacement water that has been "changed"** for use as a source of augmentation, such as changed reservoir shares, ditch bypass credits or credits from dry-up, etc., the following input information must be reported:

i. the basis and volume of the return flow obligation;

ii. the location the changed water was historically used; this will be the location used to determine the timing of the return flow impact on the river.

4. The accounting must include a monthly **projection** of the plan's operation at least through March 31 of the next calendar year.

5. The accounting must include all input and output files associated with **modeling the delayed impact** of diversions. The output from the modeling must report to a summary table that shows, by month, the ongoing depletions associated with pumping, return flow obligations, etc. and accretions from recharge operations.

6. A **net impact** summary must show the out-of-priority depletions, accretions from each recharge site, volume of replacement water actually delivered to the location of the depletions and the resultant net impact on **a daily basis**. If necessary, the net impact must be done by river reach.

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

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

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

7. The basis for determining that the depletions are **out-of-priority** must be clearly established and all steps in the calculation included in the accounting. The analysis may be done, unless otherwise limited by decree, for each well or groups of wells, provided the most junior water right associated with the group of wells is used as the reference water right for the group's out-of-priority status.

8. Accounting must include **actual information** for the irrigation year through the month for which the accounting is being submitted **AND projections** of the plan operation through March 31 of the next calendar year.

9. The following **naming convention** must be used for all files submitted pursuant to item 1:

   "Plan**WDID**_YYMMDD"

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

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

   "0103333_040515.xls"

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

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

11. If a well is covered in multiple SWSP's or augmentation plans, the monthly meter readings must be the same in the accounting for each plan covering the subject well. The accounting for every plan covering the well shall state the proportionate pumping amount covered by each plan to assure all out-of-priority depletions are replaced.

12. The following additional accounting is required for sources of replacement water used for more than one plan. The water right owner of the replacement water is responsible for accounting for the total replacement amount and how much each plan is using of that total amount. The accounting for portions of the replacement water by other users must match the accounting of the water right owner. The amount of replacement water used by the water right owner and other users together shall not exceed the total replacement amount available.

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

ADMINISTRATION PROTOCOL
Recharge
Division One – South Platte River

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

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

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

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

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.

STATE OF COLORADO

DIVISION OF RECLAMATION, MINING AND SAFETY
Department of Natural Resources

1313 Sherman St., Room 215
Denver, Colorado 80203
Phone: (303) 866-3567
FAX: (303) 832-8106

COLORADO DIVISION OF RECLAMATION MINING & SAFETY

April 30, 2010

Lafarge West, Inc.
10170 Church Ranch Way, Ste. 200
Westminister, CO 800210000

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:

M2006064	Shields at Fossil Creek Mine			M1983031	Stromquist Pit
M1994002	Andrews S & G #5 (Burlington Pit)			M1974072	Chantala Pit
M2006018	North Bank Resources			M1985218	Rich Pit
M2006073	Sundance Sand and Gravel Resource			M1985206	Boone-Martin Pit
M2009082	Parsons Mine			M1995022	Andrews #2
M1977081	Greeley West Pit			M1990144	Boone-Fillmore Pit
M2003091	Duckworth Pit			M1997087	Hartman Pit
M2000113	Mamm Creek Sand & Gravel			M2001094	Shaw Pit
M2001090	River Valley Resource			M2002009	Beeman Pit #1
M2000016	Riverbend Operation			M1981307	Fountain Pit
M1979134	Powers Pit			M1977439	Home Office Mine
M1977036	Greeley 35th Ave Pit			M1979191	Three Bells Pit
M2000034	Reichert Pit			M1982182	Port of Entry Pit
M2001051	North Taft Hill Expansion Site			M2002081	Overland Ponds
M1974015	Lyons Pit			M1981088	McCoy Pit
M1974004	Specification Aggregates Quarry			M1982034	Miller Pit
M1987176	Hamm Pit			M1996082	Blair Mesa Pit
M1988042	Cottonwood Pit			M1980136	Chambers Pit
M1990112	State Pit			M1977098	Sievers Pit
M1979002	North Delta Pit	M1983013	Latham - Burkett Pit	M1974070	Nelson Pit
M1979159	Brose Pit	M1979097	East Rigden Pit	M2000002	Tanabe Pit
M1998014	Gypsum Ranch Pit	M1991035	Bluestone Pit	M1994045	Bluestone Pit
M1999088	Kyger Pit	M1986159	Courtner Pit	M1986079	M & G Pit
M1998075	Andrews #3 (Mock Pit)				