



S. S. PAPADOPULOS & ASSOCIATES, INC.
ENVIRONMENTAL & WATER-RESOURCE CONSULTANTS

March 3, 2020

via electronic mail

Jon Roorda
Chaffee County Planning Manager
P.O. Box 699
Salida, CO 81201

Subject: Ruby Mountain Springs Anticipated Future Pumping Operations

Dear Mr. Roorda:

Nestlé Waters North America Inc. (NWNA) has committed on the record to monitor the diversion of Ruby Mountain Springs water to ensure there will be no detrimental effects to surface water, groundwater, wetlands habitat, or other users of the associated Pinedale Outwash Aquifer. It is a NWNA priority that Ruby Mountain Springs water production is sustainable, and that the use of the resource does not negatively impact its continued use under normal, known, or reasonably projected conditions.

On behalf of NWNA, S.S. Papadopoulos & Associates, Inc. (SSP&A) has been implementing the hydrologic baseline monitoring program in compliance with the *Surface- and Ground-Water Monitoring and Mitigation Plan (SGWMMP), Ruby Mountain and Bighorn Springs Sites, Chaffee County, Colorado* (NWNA, 2010) since October 2010 (shortly after pumping operations began in June 2010). Prior to SSP&A, AECOM/ENSR provided hydrogeological testing of wells in the Pinedale Outwash Aquifer, and assisted NWNA with developing the monitoring network and the current SGWMMP.

NWNA operations have been conducted under consent of its Chaffee County 1041 Permit Resolution 2009-42 adopted September 23, 2009, 1st amendment Resolution 2010-20, 2nd amendment Resolution 2013-25, and Technical Revisions 1 through 11 and 13 (herein “the Permit”). The annual decreed production limit for the Ruby Mountain Springs boreholes combined is 196 acre-feet¹. Based on all historical spring water production data available, cumulative 12-month withdrawals have varied between 60 acre-feet (from November 2016 to October 2017) and 175 acre-feet (from June 2011 through May 2012, which was the highest on record and prior to on-demand pumping)².

Since 2010, NWNA has completed routine monitoring of the biological and ecological systems near the Ruby Mountain Springs and Bighorn Springs, and has evaluated Arkansas River flows relative to production rates on a quarterly basis. Based on annual wetlands surveys conducted by Colorado Mountain College (CMC), there is no indication that production withdrawals have negatively impacted the riparian areas and overall changes in vegetative cover have been attributed to a larger amount of surface water discharging from the springs (CMC, 2019). Compared to the

¹ Operational restrictions under the Permit are not to exceed 200 gallons per minute, nor more than one acre-foot per day, or 16.6 acre-feet per month combined from either of the production boreholes

² Annual water year production during continuous pumping operations ranged from 102 to 168 acre-feet (between 2010 and 2015) and on-demand pumping operations ranged from 60 to 89 acre-feet (between 2016 to present).

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long-term average flows in the Arkansas River at Nathrop, the amount of water that can be removed from the river system under the Permit constitutes (on an annual basis) less than 0.05 percent of the average annual flow of the river; however, since Nwana has offset their production of water with Upper Arkansas Water Conservancy District augmentation water released from reservoirs upstream of Ruby Mountain Springs, there is no net effect on flows in the Arkansas River at and downstream of Ruby Mountain Springs due to the spring water production. Furthermore, drought conditions were monitored during the 2012 and 2018 water years that imposed a stress on the system and, during those dry periods, groundwater levels were maintained well above minimum Permit limits at the production boreholes, the ecological and biological systems did not appear to be impacted as reported by CMC, and there were no nearby water users that were affected by pumping.

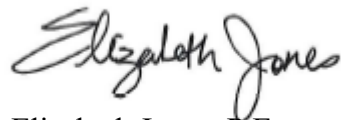
Annual production for the 2019 water year was 89 acre-feet whereas total estimated springs discharge measured at the downstream weir was 1,573 acre-feet. Production at Ruby Mountain Springs is anticipated to grow two percent annually. At the estimated growth rate for the future decade, annual production would be less than 110 acre-feet.

To date, spring water production has been well below the permit limitations and at no time over the last decade of monitoring has stress to the spring system resulted in conditions where pumping was required to be reduced, either to meet criteria under the Permit or due to observations that indicated operations were negatively impacting upstream or downstream users or the ecological and biological systems. Review of available data show Nwana spring water production operations at the Ruby Mountain Springs site are sustainable³ and the quantity of water anticipated to be produced from Ruby Mountain Springs will likely continue to have a very minimal effect on groundwater levels in the future, as it constitutes only about 5 percent of the natural discharge from the Ruby Mountain Springs.

Please contact us if you have any questions or comments.

Sincerely,

S. S. PAPADOPULOS & ASSOCIATES, INC.



Elizabeth Jones, P.E.
Senior Engineer

cc: Larry Lawrence, Nwana
Gary Greiner, Chaffee County Development Engineer

³ Predictive estimates for multiple years of drought, reduced irrigation, or altered production scenarios have not been evaluated; however, assuming operations, aquifer uses, and weather patterns continue to be similar to historical conditions, there is no knowledge or anticipation of adverse impacts.