

UTAH DIVISION OF WATER QUALITY

IN THE MATTER OF The City of Moab – Moab City Wastewater Treatment Facility 217 East Center Street Moab, UT 84532 UPDES PERMIT NO. UT0020419	PERMIT VARIANCE FOR TECHNOLOGY BASED PHOSPHORUS EFFLUENT LIMITS
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BACKGROUND

1. The City of Moab’s (the City) Moab City Wastewater Treatment Facility in Moab, Utah (the “Facility”) provides wastewater services within Moab City and Spanish Valley.
2. The City’s operations at the Facility are undertaken subject to UPDES Discharge Permit No. UT0020419 (“Permit”).
3. The Facility is required to achieve technology-based phosphorus effluent limits (“TBPEL”) on or before January 1, 2020, unless a variance is granted. *See UAC R317-1-3.3.*
4. The City submitted a variance request, dated September 26, 2016 to the Utah Division of Water Quality (“DWQ”), seeking a variance to the TBPEL (the “Variance Request.”). The Variance Request is based on the fact that the Facility contributes a small percent of the phosphorus loading in the Colorado River which is not listed for impairment due to any nutrient load.
5. Utah law provides that DWQ may grant a variance for compliance with the TBPEL in the event that the operator demonstrates that the TBPEL or Phosphorus loading cap are clearly unnecessary to protect water downstream from the point of discharge. *See UAC R317-1-3.3.C.1.c.*
6. The Director of DWQ has determined that the City has met its burden to show that the TBPEL is clearly unnecessary within the meaning of the *UAC R317-1-3.3* and that a variance is appropriate, subject to the limitations and conditions provided herein.

AUTHORITY

7. The Director of DWQ has authority to grant a variance as to the implementation deadline for TBPEL pursuant to *UAC R317-1-3.3* and the corresponding provisions of the Utah Water Quality Act.
8. The State of Utah administers the Utah Pollution Discharge Elimination System (UPDES) permit program under the Utah Water Quality Act.

CLEARLY UNECESSARY – FINDINGS

9. The Variance Request (DWQ-2016-018181) included the following submissions, among others:
 - a. Request for a Variance to the Technology-Based Phosphorus Effluent Limit-Moab Wastewater Treatment Facility, Moab (September, 2016)

- b. Colorado River flow and loading at US 191 crossing of the Colorado River. Bowen Collins & Associates (September, 2016)
- c. Phosphorus Loading for the Facility as currently operated as well as the estimate for the upgraded Facility currently under construction, Bowen Collins & Associates (September, 2016)

10. Based on the foregoing submissions and additional analysis conducted by DWQ staff summarized below, the Director has determined that the Facility has established that the TBPEL is unnecessary to protect water downstream from the point of discharge, within the meaning of *UAC R317-1-3.3.C.1.c*.

DWQ analysis concluded that current and future loads constitute a small proportion of the total annual loading in the Colorado River and are not anticipated to cause any negative effects due to the following factors. Based on MWTF's request, DWQ Staff has determined a variance with UAC R317-1-3.3. is appropriate and recommend MWTF be granted a variance.

- a. The proportional phosphorus load from the MWTF based on seasonal average flows and loads varies from a low of 0.34% in the fall to a high of 5.87% in the winter. The proportion of future loading from the MWTF decreases or stays the same using the design capacity of 1.75 million gallons per day (MGD) and a 2.5 mg/L TP concentration, ranging from a low of 0.4% in the summer to a high of 6.16% in the winter.
- b. The potential impact of phosphorus loading from the MWTF on the Colorado River's beneficial uses (i.e. dissolved oxygen and algae growth) is smallest in the fall and winter months due to cold temperatures and limited light availability.
- c. The Colorado River's unique characteristics mitigate the effect of phosphorus additions, specifically the high sediment loads of the Colorado River which constantly scour the river channel and limits light penetration and hence algae growth. Turbidity in the Colorado River has been documented to be an important limitation to algae growth (Lovich and Melis, 2007).

VARIANCE

11. The Director hereby grants the Facility a variance to the TBPEL; subject to the following conditions:

- a. This variance may be revisited at the time of the Facility's next UPDES permit renewal and may be unaltered, modified, or abandoned.
- b. Pursuant to *UAC R317-1-3.3.C.2*, this variance is subject to re-evaluation in the event that there is any substantive change in the facility design or construction plans provided in the Variance Request. The Facility must provide timely notice to DWQ of any such substantive changes.
- c. If it is found that the Facility has failed to comply with the requirements of this variance, DWQ may terminate this variance and the Facility will be immediately expected to comply with the requirements outlined in *UAC R317-1-3.3*.

- d. In a memo to the Division the MWTF stated that it can obtain a concentration of 2.5 mg/L total phosphorus in the effluent with operation of the new facility currently under construction. The analysis was based on the new MWTF not exceeding this concentration of phosphorus. If MWTF does not operate at this anticipated concentration as an annual average upon optimization of the new facility, the Division of Water Quality may revisit or terminate this variance.



Erica Brown Gaddis, PhD
Director
Utah Division of Water Quality

Date: December 29, 2021

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