

Responsiveness Summary for Changes in Proposed Rule 1 and 2
Amendment to Rule R317-1-3.3 Technology-Based Phosphorus Effluent Limits

<u>Comment Number</u>	<u>Commentor</u>	<u>Comment</u>	<u>DWQ Response</u>
A1	ATK Launch Systems	Narrowed Exceptions (Now Variances). CPR1 would eliminate all exceptions to the proposed technology standard and would, instead, provide for flexibility under the rule as achieved through variances that would be periodically reviewed. The revised characterization of exceptions as limited variances is confounding in at least two ways. First, it would improperly broaden the applicability of the rulemaking by, among other things, eliminating the de minimis exception. ATK maintains that there are circumstances where a de minimis exception is appropriate. For example, no technology-based limit or loading cap should apply if a discharge does not result in increased loading of phosphorus to the receiving water. As noted in ATK's initial comments, the de minimis exception could be directly relevant to ATK given existing data indicating that Blue Springs (the source of Blue Creek) potentially has ambient phosphorus concentrations up gradient from the ATK facilities. As such, ATK maintains that nutrient concentrations in discharges with phosphorus related to -- or no different from -- concentrations in the intake water should be accepted from the rule (as opposed to requiring ATK to seek a variance - which lacks specificity, based on showing that limits and a cap "are clearly unnecessary"). In fact , ATK recommends that same exception be available to discharges that use chemicals necessary for proper cooling tower operation. As further explained below, the use of nutrient-based chemicals in cooling towers is efficient and effective and may not be able to be replaced for a reasonable cost. The de minimis exception would provide defensible flexibility to the rule's applicability.	The intent of the proposed exceptions was to provide a mechanism to reduce or eliminate the burden of the rule when that burden is excessive or unnecessary. The term "exceptions" was replaced with "variances" to clarify that should discharging conditions change, the applicability of the variance would be re-assessed by the Director. The "de minimis variance" was eliminated because it was unworkable as written. A percentage gain in phosphorus concentration is unsupported and arbitrary. Dischargers that believe their effluent has a minimal or nominal impact on the receiving stream may apply for variance under R317-1-3.3.C.2.c, which allows dischargers to demonstrate that the technology-based effluent limit is unnecessary to protect downstream waters. The case where source water has high background concentrations is covered by existing Rule R317-1-3.4 Pollutants In Diverted Water Returned To Stream. Pollutants added to a diverted water must be addressed as indicated in the diverted water rule.
A2	ATK Launch Systems	Second, to the extent those exceptions to the rule would be eliminated or amended or characterized as variances, a discharging industrial source could be required to treat flows with background nutrient concentrations unrelated to the discharger's operations. ATK suggests that the exceptions to the nutrient rule be retained and the variance provisions specifically drafted to reflect circumstances that require periodic review.	Dischargers are not required to treat background pollutants per R317-1-3.4 Pollutants in Diverted Water
A3	ATK Launch Systems	Economic Hardship. The proposed economic hardship provisions recognize detailed qualifying criteria for discharges from publicly owned treatment works (POTWs). The provision has also been properly revised to reflect a willingness to consider "other demonstrations of economic hardship on a case-by-case basis." CPR1, R317-1-3.3.C.1.b. ATK supports the proposed change to allow for site-specific economic hardship considerations. To that end, ATK reiterates its views (more fully detailed in the initial comments) that DWQ has not fully considered economic implications of the proposed rulemaking on industry. Based on information provided by a water treatment chemical vendor, phosphonates and polymers have become the mainstay of the treatment products considered "state-of-the-art" as they are used for corrosion and deposition control in boilers and cooling towers. Costs associated with these water treatment products would substantially increase if phosphonates, in particular, were removed from available options for the treatment of water in boilers and cooling towers . ATK suggests that DWQ consider the economic impact this rule will have on water treatment chemicals which are widely used by industry.	We agree that there will be cases where water treatment chemicals need to be considered for nutrient reduction. Most of these cases will be resolved through chemical optimization or replacement. Industrial chemistry for replacement of phosphates used for chemical sequestering is well established and economical; however, an economic hardship variance is available for cases where replacement is not feasible.

A4	ATK Launch Systems	Proposed Self-Monitoring. ATK understands that the proposed rulemaking would waive monitoring for nitrogen, phosphorus and other constituents if "a discharging treatment works demonstrates to the Director that there is no reasonable potential to discharge nitrogen or phosphorus." CPR1, R317-1-3.3.D.3. In fact (and in contrast), the National Pollutant Discharge Elimination System (NPDES) regulations clarify that the burden for assessing reasonable potential is on the Director, not the discharger. 40 CFR 122.44(d) (1) (ii). The CPRI 's seeming shift of the burden from DWQ to the discharger, e.g., industry, does so without considering the cost to industry. ATK recommends DWQ clarify that the burden for evaluating reasonable potential is on the Director; dischargers can, of course , provide information to support the Director's determination.	The requirement that the discharger demonstrate no reasonable potential was revised in Change in Proposed Rule #2: R317-1-3.3.D.2 The Director may authorize a variance to the monitoring requirements identified in Subsection R317-1-3.3.D.1.
B1	Canyon Fuels Skyline Mine	3.3 A Technology-based Effluent Limits. A better definition of "Technology-based" would be appropriate here, unless the intention is to leave the division a wide latitude to arbitrarily approve of effluent limits.	The proposed Technology-Based Effluent Phosphorus Limit is 1 mg/L for non-lagoon discharging facilities in Utah. There is not latitude in this limit without a variance. The TBPEL of 1 mg/L was not selected arbitrarily. Rather, it was selected based on: (1) well documented phosphorus removal capabilities of conventional wastewater treatment plants that incorporate state-of-the-art chemical and/or biological systems; and (2) benchmarking similar phosphorus pollution control measures implemented in other western states.
B2	Canyon Fuels Skyline Mine	3.3 B-2: Cap of 125% of current average annual total phosphorus load for treatment lagoon systems. Does this assume a current average annual total phosphorus load of greater than 1.0 mg/l? If so, it should be specified. If a current average annual total phosphorus load is below the lab reporting limit of 0.05 mg/l, and the cap is not specified at those already over 1.0 mg/l, as with non-lagoon systems, then the discharger would then be held to a cap of 0.0625 mg/l, which would be overly constraining where the non-lagoon limit is 1.0 mg/l	No, it is not the intent of this rule to establish lagoon system loading caps for facilities that discharge well below 1 mg/L.
B3	Canyon Fuels Skyline Mine	3.3 C-1-b Economic hardship demonstration. Economic hardship criteria given for POTW, but no criteria given for what constitutes an "Economic hardship" for other industries.	3.3.C.1.b in CPR1 establishes that the Director will consider other demonstrations of economic hardship on a case-by-case basis to allow non-POTWs to demonstrate economic hardship.
B4	Canyon Fuels Skyline Mine	3.3 D-1 Monthly monitoring. Requirement for monthly monitoring is entirely too stringent.	CPR2 establishes a mechanism for the Director to issue variances to some or all of the monitoring requirements of the proposed Rule. See R317-1-3.3.D.2.
B5	Canyon Fuels Skyline Mine	3.3 D-2 Monitoring waiver. States that if treatment works can demonstrate that there is no reasonable potential to discharge N or P monitoring can be waived. What is the criteria for "no reasonable potential to discharge N or P?" How much data required to show no potential for discharge? There is a potential for arbitrary waivers without defined guidance on what constitutes reasonability.	This monitoring requirement was changed in CPR2. The burden of proof will be established on a case-by-case basis but in general, the Director will rely on a combination of historical data, discharger certification, and supplemental monitoring to establish no reasonable potential for nitrogen and/or phosphorus pollution. The Division will conduct the supplemental monitoring in the first four months of 2015 to assist the Director in determining reasonable potential for dischargers of unqualified or unknown potential to discharge nutrients. Effluent from these dischargers will be screened for nitrogen and phosphorus species using three initial sampling rounds; where necessary, further sampling will be conducted to to complete the determination of reasonable potential.

C1	Energy West Mining Co.	3.3 D. 1. a. The rule will require monitoring of influent and effluent. In our case as a coal mine with multiple influents or inaccessible influents, the monitoring of influents is either impracticable, as a typical coal mine may have hundreds of groundwater influent points, or impossible, in the case where an underground mine is physically sealed and the influent (intercepted groundwater) is physically inaccessible and only the effluent is accessible. We have mines with both situations. The rule should allow exceptions in these cases where the influent is inaccessible.	If it is unsafe or impossible to collect an influent sample, the Director will waive this requirement.
D1	Pacific States Cast Iron Pipe Company	PSCIPCO is a potential affected industry based upon the most recent proposed rule for Technology-Based Limits for Controlling Nutrient Pollution (Proposed Rule). PSCIPCO utilizes a once-through, non-contact cooling water system in its process and discharges this stream into waters of the state. As a potential affected industry PSCIPCO appreciates the opportunity to provide comments to the proposed rule.	Thank you for taking time to comment on the proposed rule.
D1-A	Pacific States Cast Iron Pipe Company	The proposed rule should not apply to direct industrial discharges. Industry representatives were not identified, nor invited to participate in any aspect of this rulemaking until the last minute to provide comment during the public comment period. Representatives only from agriculture, drinking water utilities, POTWs, environmental interests, recreation, storm water interests, and academia were invited and participated in this process.	The Division conducted a broad outreach effort to include many stakeholders in the Rule development process. The formal stakeholder group, which met 8 times over 2-1/2 years. Numerous public meetings about nutrients and possible nutrient regulations have been conducted, including six public meetings around the state that were focused on the proposed TBPEL Rule. Numerous work meetings and Water Quality Board meetings have been conducted in public to inform Utahns and affected businesses about the Division's nutrient strategy. Nevertheless, it was not anticipated that industry would be affected by this rule. When it was discovered that some industrial dischargers may be affected, changes were made to the rule to provide for variances for elements of the rule for those that have no reasonable potential to discharge phosphorus to surface waters. Additionally, the date when monitoring for nitrogen and phosphorus will be required has been pushed back until July 1, 2015 to allow for variances to be secured, if appropriate. Further, permittees have until January 1, 2018 to demonstrate that the TBPEL for phosphorus is unnecessary.
D1-B	Pacific States Cast Iron Pipe Company	PSCIPCO acknowledges that nutrients and TDS are among the top problems regarding surface waters of the state and the Utah Division of Water Quality (DWQ) is tasked with improving water quality to achieve desired and established standards. However, DWQ did not fully evaluate the impacts imposing such regulations may produce by not assessing the science or costs of nutrient reduction technologies for industry. DWQ focused its efforts on publically owned treatment works (POTWs) and established technology-based limits for phosphorus considering only people, households, and agriculture.	The Division believes that with few exceptions, industry will be largely unaffected by the proposed rule because most industries in the state discharge to POTWs or already discharge low levels of nitrogen and phosphorus. As with the POTWs, most industries with nutrients present in their wastewater already have treatment works that can be economically adapted, e.g., with chemical addition, to meet the proposed phosphorus limit.
D1-C	Pacific States Cast Iron Pipe Company	PSCIPCO concedes that DWQ has proposed a method of granting variances to facilities (of all types and in all categories), but that these variances are in lieu of preferred exemptions, limited and presume that POTW-focused, technology-based limits should apply to industries even though technology-based limits were never established for direct industrial discharges.	The proposed technology-based limits are reasonable, and consistent with industry-wide standards. The same technologies can be used for industrial treatment of phosphorus as for POTWs.

D2	Pacific States Cast Iron Pipe Company	Industry involvement and inclusion have been last minute. PSCIPCO had been renewing their UPDES permit during the time frame for developing the proposed nutrient rule. This renewal period is the expected time to review applicable regulations and proposed rules and solicit input from affected parties of how to achieve any identified standards. PSCIPCO was not informed of any new regulations which might impact their UPDES permit. In addition, PSCIPCO performed an anti-degradation review (ADR) concerning the installation and addition of cooling towers to their permit and there was neither review nor request concerning nutrients during the renewal process. In fact, PSCIPCO was not directly notified of the applicability of this potential rule until October 14th.	The proposed rule has an extended schedule for implementation, beginning with monitoring that will establish the applicability of allowed variances, followed by implementation of technologies for phosphorus treatment, when necessary.
D3	Pacific States Cast Iron Pipe Company	Clarification needs to occur regarding phosphorus in intake water. PSCIPCO previously stated that it uses once-through, non-contact cooling system water in its process. PSCIPCO pulls surface water from the Ironton Canal and returns this water slightly upstream from where was it diverted for the cooling process. In such a case, PSCIPCO may receive water that has elevated amounts of nutrients due to agricultural or stormwater run-off that were beyond PSCIPCO's control and then exceed the standard by merely passing the water through the facilities cooling system. PSCIPCO recommends investigating and developing direct industrial discharge standards and a methodology for separating a facility's contribution from background.	Dischargers are not required to treat background pollutants per R317-1-3.4 Pollutants in Diverted Water
D4	Pacific States Cast Iron Pipe Company	The rule is too general regarding required nutrient monitoring. The proposed rule states that all discharging treatment works that has "reasonable potential to discharge nitrogen or phosphorus" are required to institute nutrient monitoring practices for influent and effluent waters. It also makes the provision that they "shall be self-implementing beginning January 1, 2015." DWQ is to take the lead in evaluating the need to include or apply additional standards, particularly regarding a "reasonable potential" as per this proposed rule and not the permittee. This evaluation should be addressed as part of the permitting process, or if necessary, use the reopener provision in an existing permit	The requirement that the discharger demonstrate no reasonable potential was revised in Change in Proposed Rule #2: R317-1-3.3.D.2 The Director may authorize a variance to the monitoring requirements identified in Subsection R317-1-3.3.D.1.
D5	Pacific States Cast Iron Pipe Company	The proposed rule did not include an economic impact analysis regarding industries current use of phosphate containing compounds in boiler and cooling tower waters. As stated above PSCIPCO uses cooling towers. Cooling towers and boilers utilize phosphate compounds as an essential component to both corrosion and deposition control. Without the input of industry into the proposed rule, the economic costs associated with any potential restriction or change of these conditioning compounds have not been considered or evaluated.	We agree that there will be cases where water treatment chemicals need to be considered for nutrient reduction. Most of these cases will be resolved through chemical optimization or replacement. Industrial chemistry for replacement of phosphates used for chemical sequestering is well established and economical; however, an economic hardship variance is available for cases where replacement is not feasible
D6	Pacific States Cast Iron Pipe Company	PSCIPCO recognizes DWQ's and the current workgroups' efforts in developing the proposed rule. It is hopeful that additional nutrient management options may developed when this work includes all stakeholders in the process.	Innovative management approaches are encouraged. R317-1-3.3.C.1.d provides that if the owner of the discharging treatment works can demonstrate that a commensurate phosphorus reduction can be achieved in receiving waters using innovative alternative approaches such as water quality trading, seasonal offsets, effluent reuse, or land application, a variance to the TBPEL will be allowed.

E1	Salt Lake City Corp.	<p>As a steward of the environment, Salt Lake City has and will continue to work closely with the UDWQ and other interested stakeholders on workgroups, projects, and initiatives to best protect the water quality of the Waters of the State. The City continues to support the development of a Nutrient Strategy for the Waters of the State that should include a science-based approach to development of nutrient limits that are appropriate and tailored for each water body or water body classification. As an example, there are many unknowns and uncertainties regarding the scientific research and the Great Salt Lake. The <i>Utah Nutrient Strategy: 'Technology Limits</i> prepared by UDWQ in support of the TBL expressly notes "[i]t is likely that years of additional research will be needed before defensible conclusions about appropriately protective Great Salt Lake nutrient limits, if any, can be made. (Page 3)." Therefore, the City requests that further studies and evaluations be performed by the State prior to imposition of TBLs.</p>	<p>Technology-based limits are an interim measure imposed to prevent further deterioration (due to growth and resulting increases in waste discharges) of the state's limited water resources while the science needed to establish regional and site-specific water quality standards is completed. National and international research on the effects of excess nutrients in the aquatic environments supports the need to control nutrients from point and non-point sources.</p>
E2	Salt Lake City Corp.	<p>The Proposed Rule refers to costs associated with implementation of upgrades to treatment facilities and the financial impact to Utah households. The UDWQ costs were adapted from the October 2010 Report "Statewide Nutrient Removal Cost Impact Study," prepared for UDWQ by CH2M-HILL. The City recently (October, 2014) conducted a thorough engineering technical and cost analysis for upgrades and modifications to our reclamation facility to meet the proposed TBLs for phosphorous (1 mg/L, proposed), total inorganic nitrogen (TIN 10 mg/L proposed by UDWQ heretofore for future rule), and ammonia (1.5 mg/L as based on EPA recommendations). The costs presented in a UDWQ 2010 report indicate that to meet the proposed TBL of 1 mg/L for total phosphorous, the City's reclamation facility would require approximately \$2 Million in upgrades. Based on the City's 2014 detailed engineering study, utilizing the existing processes with the addition of chemical phosphorous removal would require approximately \$75.7 Million in capital cost and \$2.7 Million in annual operating costs, with a present value of approximately \$120 Million.</p>	<p>In its study, "Statewide Nutrient Removal Cost Impact Study," the Division attempted to capture the increased cost to POTWs from the proposed nutrient rule only, but recognized that additional costs will be incurred by POTWs to accommodate additional growth beyond current capacities as well as to address aging infrastructure and technology limitations associated with older plants. The Division appreciates that Salt Lake City Corp. has taken the next step toward an integrated assessment of all of its future wastewater treatment needs and we agree, and pointed out in our report, that Salt Lake City will have additional costs to address basic capacity and infrastructure needs. Neither a technology-based effluent limit for nitrogen nor more stringent ammonia criteria is part of the proposed TBPEL rule, so the costs associated with implementing those two elements have not been considered. We believe that the costs for needed and future infrastructure improvements at the Salt Lake City Reclamation Facility plus the cost of nutrient removal will be affordable. If Salt Lake City Corp. believes that's not the case, the proposed rule provides for a variance for economic hardship.</p>
E3	Salt Lake City Corp.	<p>This is a considerable discrepancy from the UDWQ estimate of \$2M to the detailed estimated impact of \$120M, a 60-fold increase. The chemical addition for phosphorous removal creates additional precipitate solids, which require significant expansion of several other processes to remove those solids. The City's total costs necessary to meet the 1mg/L criteria for phosphorous include: rehabilitation/upgrade of the existing trickling filters and pump station; additional primary and secondary clarifiers; and new chemical feed and storage, ultraviolet disinfection, and solids de-watering facilities.</p>	<p>We support Salt Lake City's plans to upgrade and modernize its wastewater treatment plant but we disagree that the City's higher costs are due solely to the proposed nutrient regulation. Most of these costs are for future capacity and replacement of old facilities.</p>

E4	Salt Lake City Corp.	If subsequent phases of the nutrient strategy (reduction of TIN and/or ammonia) also are implemented, then this \$120 Million chemical addition investment would be largely rendered obsolete and largely a lost cost, as the plant would have to switch processes and construct an entirely new biological nutrient removal process to meet the TIN and ammonia criteria, and meet any further restrictive phosphorous limits (i.e. 0.1 mg/l). A biological treatment process that would effectively reduce total phosphorous, TIN, and ammonia to the proposed levels is estimated to have \$176.9 Million in capital cost and \$3.4 Million in annual operating costs, with a present value of approximately \$235 Million.	In planning for infrastructure to meet the proposed TBPEL, Salt Lake City Corp. would be well-advised to take into account the possibility of there being more stringent ammonia and nitrogen effluent limits imposed on its facility in the future. Even if a rule was adopted to impose TIN limit for POTWs (and nothing has yet been proposed in this regard), treatment facilities which discharge to Great Salt Lake would likely be excluded from the rule until scientific research concludes that such a limit would be necessary.
E5	Salt Lake City Corp.	Environmental Impact of TBL Rule. The City's utilized a Triple Bottom Line analysis when assessing our processes and the proposed nutrient reduction criteria. The triple-bottom line analysis includes assessment of the financial, social, and environmental costs/impacts that would result from implementation of only a chemical phosphorous reduction and from implementation of biological processes that would address phosphorous, TIN, and ammonia. The Salt Lake City Reclamation Facility would see an increase of power consumption of 8.5 million kilowatt hours (kWh) and 32.8 million kWh for chemical phosphorous removal and biological nutrient removal, respectively. For each alternative, the facility would see an increase in weekly truck delivery of 8 semi trucks and 4,150 gallons per day usage for chemical phosphorous removal and 3 semi trucks and 1,640 gallons per day for biological nutrient removal. The TBL ignores the known significant greenhouse gas (GHG) footprint impact to an area with known air quality concerns.	The Division's "Statewide Nutrient Removal Cost Impact Study" addressed the issues if increased power consumption, sludge production, hauling and air pollution. We appreciate the City's consideration as well. We estimated that emissions will increase by generally less than 10 percent as a result of increased nutrient removal.
E6	Salt Lake City Corp.	Nutrients are essential to support the ecology and economy of the lake, and to date potential impacts of nutrient reduction has not been determined relative to the vast avian population, as well the \$1B annual brine shrimp industry. The significant investment to meet the TBL does not assure improvement in Great Salt Lake water quality or ecosystem, but will assuredly have a social, financial and environmental impact.	Technology-based limits are an interim measure imposed to prevent further deterioration (in response to growth and resulting increases in waste discharges) of the state's limited water resources while the science needed to establish regional and site-specific water quality standards is completed. National and international research on the effects of excess nutrients in the aquatic environments supports the need to control nutrients from point and non-point sources
E7	Salt Lake City Corp.	In summary, the City recommends that the UDWQ complete further detailed study and understanding of the Great Salt Lake nutrient regime prior to imposition of technology-based limits. The City will incur significant future financial costs to reduce phosphorous alone (\$120 Million in present value) or to reduce phosphorous, TIN, and ammonia (\$235 Million in present value). The known and unknown social and environmental impacts of these TBL regulations could be significant. The city will continue to support the UDWQ to establish the most appropriate science-based nutrient limits for the Waters of the State and looks forward to continued collaboration with UDWQ and other stakeholders.	The Division of Water Quality continues to investigate the impacts of excessive and increasing nutrients in Great Salt Lake (GSL). There is much science and study that must occur before effluent limits for nitrogen are considered for facilities that discharge to that water body. That is because nitrogen-fixing bacteria may convert nitrogen gas into ammonium or nitrate independent of the amount of nitrogen discharged to GSL by POTWs. There is much less debate about curtailing phosphorus levels in GSL as absent steps being taken to reduce phosphorous, its levels will continue to increase in both the GSL water column and sediment.