

Leland Meyers, Central Davis Sewer District
Via email

1. The document mentions the use of compliance schedules for stipulation of sampling requirements. Compliance schedules indicate a deviation from compliance. Since these are, rather, investigations I believe compliance schedules should be not used. As such the investigations should be either external to the UPDES permit or in a separate investigation section. Central Davis Sewer District prefers the use external agreements, but could agree to a separate section in the permit.
2. The requirement on page 6 discusses a temperature rise limitation of 4-degrees C. There does not appear to be a basis for this increase especially in a shallow ecosystem. More justification for this should be provided or the requirement removed.
3. Chronic WET testing may be used for investigation but acute WET testing should still be used in the compliance monitoring section of the permit. While this may be more costly if chronic testing is used for investigation, Central Davis Sewer District believes it is more appropriate.
4. Consideration in the interim method should be given for reasonable potential when requiring the use of chronic criteria for investigation. A facility with a low or no reasonable potential are more likely to be impacted by false positives rather than actual toxicity.
5. Page 12 discusses toxic units. Reference is made to use of a TU of 1.0. Consideration should be given to a TU for a maximum daily limit of 1.6. This is discussed in EPA's 2004 Guidance for WET testing in Appendix B.
6. Central Davis Sewer District can basically agree to and comply with the most or all of the requirements in the draft document as long as they are applied uniformly to all dischargers and not waived for less than significant differences.

Via email

COMMENTS ON THE PROPOSED INTERIM APPROACH FOR UPDES PERMITTING FOR DISCHARGE TO GREAT SALT LAKE

Dear Mr. Bittner,

Thank you for seeking and accepting comments on your review draft: *Interim Approach for UPDES Permitting for Discharges to Great Salt Lake*. Chevron has recognized that a robust approach to reasonable potential analysis is required during every UPDES permit renewal, but when few or no numeric water quality criteria exist for the receiving water, classic methods don't appear to be available.

The use of surrogate numeric criteria, though, does allow methods similar to those promoted by EPA in the Technical Support Documents for Water Quality-Based Toxics Control¹. Using existing Utah Class 3 water quality criteria for aquatic life as surrogate criteria is a logical choice. Although some may argue that using these criteria is not appropriate because they don't represent aquatic life in the Great Salt Lake, you point out that these criteria are likely to be overprotective, not underprotective. You also give dischargers an opportunity to recalculate the criteria based on the species that are actually present, if they don't test out using Class 3 criteria. This is just one example of the flexibility the approach provides. We agree that failure to screen out at any particular level does not imply that water quality standards will not be protected; rather, it means further investigation is required. A discharger can start fairly simply, and if he or she doesn't screen out, he or she can use progressively more rigorous scientific methods (even though they may demand more resources) to demonstrate no reasonable potential. This seems logical, scientifically sound, and fair to all parties.

Some may argue that, indeed, a failure to screen out using this interim approach is not equivalent to a demonstration by UDWQ that reasonable potential exists. That demonstration is required to support the need for water quality-based effluent limitations. While this may be a legitimate concern (depending on the circumstances), one may presume that the agency will be accorded a good deal of deference in an appeal process if dischargers contest a finding of reasonable potential based on their failure to screen out using this approach.

Chevron supports the statement that this interim approach does not apply to nutrients. The case for why one cannot make the same sort of analysis for nutrients is very ably presented by Brown and Caldwell in a report for the National Association of Clean Water Agencies by Brown and Caldwell². There are many reasons given in this report as to why the approach for nutrients would have to be much different than the approach for toxics.

¹ Also known as the TSD. EPA /50/2-90-001, March 1991, Chapter 3.

² *Review of USEPA Methods for Setting Water Quality-Based Effluent Limits for Nutrients*, June 2014
http://www.insideepa.com/sites/insideepa.com/files/documents/oct2014/epa2014_1865.pdf

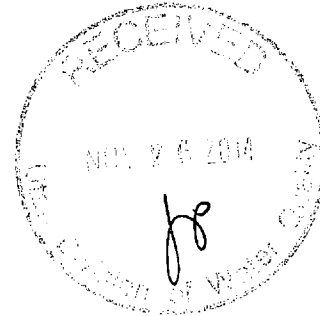


DWQ-2014-015780

Chris E

**PARR BROWN
GEE & LOVELESS**
ATTORNEYS AT LAW

November 24, 2014



Walt Baker, Director
Division of Water Quality
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY
195 North 1950 West
P.O. Box 144870
Salt Lake City, Utah 84114-4870

Re: Comments of Compass Minerals Ogden ("Compass") on "Interim Methods for Evaluating Use Support for Great Salt Lake, Utah Pollution Discharge Elimination System ("UPDES") Permits"

Dear Mr. Baker:

Compass appreciates this opportunity to submit comments on the above-referenced guidance ("Guidance") document dated October 14, 2014.

Among other things, the Guidance recommends the use of whole effluent toxicity ("WET") testing of the permitted effluent discharges to Great Salt Lake. Based on prior meetings and discussions with Division of Water Quality ("DWQ") personnel, it is the understanding of Compass that the requirement to perform WET testing under the Guidance will not be imposed on Compass by DWQ for the reason that Compass' effluent is saline. The saline effluent would kill any species used in the WET test regardless of any toxins present in the water.

Compass seeks confirmation of this understanding as part of the process by DWQ to finalize the subject Guidance.

Please feel free to contact Rodney Smith at 801-732-3251 with any questions.

Sincerely,

/s/ Steve Christiansen
Steve Christiansen

cc: Joe Havasi
Rodney Smith
Denise Hubbard

Comments on Interim Methods for Evaluating Use Support for Great Salt Lake UPDES Permits
Submitted via email by Theron Miller, PhD
Jordan River/Farmington Bay Water Quality Council
November 24, 2014

General comment:

Historically, chronic WET tests for some POTWs have resulted in occasional false positives (i.e. immediate retests most often passes and examples where the TIE/TRA procedures are followed has very seldom resulted in identifying a pollutant that consistently occurs in the discharge at potentially toxic concentrations). This has resulted in inconclusive and costly WET testing and priority pollutant analysis. This “cat chasing its tail” may go on for years and could cost 10s to 100s of thousands of dollars. Hence, the notion that chronic WET testing will be able to identify toxicants or define effluent limits that provide clear or expected results is optimistic at best. Secondly, these suspect results will be exacerbated by the use of receiving water as dilution water. As further explained below, salinity was the driver in defining the four main subclasses of Class 5. Consequently, dilution water may range from 5X the salinity of the ocean (hence marine species are not appropriate), to perhaps 0.2X the salinity of the ocean (Willard Spur and the south part of Farmington Bay). Moreover, even these regions of Bear River and Farmington Bays can experience 5X ocean salinity (South Arm salinity) under normal lake elevations. The point is: and as mentioned in the strategy document, dilutions with receiving water will likely be incompatible with test organisms or will not represent actual lake conditions or salinity ranges for which they are intended. There appears to be too many complicating factors when trying to perform representative chronic testing for GSL species and ecosystems. In lieu of trying to perform chronic WET testing, a more thorough assessment of species assemblages and ecosystem processes that occur among the various salinity ranges is suggested to be the necessary first step developing criteria for the various subclasses. This will also establish the appropriate taxa lists for the various subclasses under the various salinity regimes and seasons. These more complete lists can then be used in the recalculation procedures where appropriate or for the identification of candidate species for future toxicity testing.

On Page 1 the Document states: Specifically, these methods apply to discharges to Class 5 Great Salt Lake (Classes 5A, 5B, 5C, 5D, and 5E) (UAC R317-2-6). These methods also apply to discharges to Class 3E when the Class 3E water discharges to Class 5.

The appropriateness of this statement is questioned. Because 3E waters are only regulated by narrative standards, it looks as though DWQ could create and enforce “defacto” standards for 3E waters (Waters that, by definition, are already severely habitat limited and hence cannot support typical diverse and sensitive taxa). This issue could be logically ameliorated if the compliance point

for the pollutant in question is at the “mouth” of (for example), the Northwest Oil Drain. Further, the Northwest Oil Drain discharges to a short zone that would logically (under current low lake elevations) be characterized as 5E prior to entering 5D (Farmington Bay open water). As Salt Lake City Public Utilities must pass acute WET testing, it can be assumed that there is no reasonable potential for toxicity in the Drain itself. Further, the short distance that the NW Oil Drain travels across sheetflow wetlands creates habitat unique to Class 5E (i.e. shallow, warm, gently-flowing) wetlands. This class supports its own unique assemblage of macroinvertebrates and vegetation that are uniquely different from Class 5D. Therefore, this reveals the cumbersome and daunting task of identifying appropriate species that may be used in the species deletion method or selection of endemic species that could be used for site-specific toxicity testing and criteria development. For example, even though the South end of Farmington Bay is generally less saline than the mid to north regions during low lake levels, it can be equally saline as the south arm when the lake elevation is normal (and 5E wetlands virtually disappear). As noted in the document, this presents a great challenge for the selection of appropriate test species. Further, under low lake levels, water from the NW Oil Drain and the discharge from the FBWMA leaves the south end of the lake and mixes with the more saline portions to the north within a few hours to a couple of days. This mixing process may result in salinity ranges near fresh water at the outlet of the Northwest Oil Drain to nearly 2X the salinity of the ocean near the causeway outlet (near the North Davis Sewer District outfall). Considerable dialogue between DWQ and stakeholders and scientists needs to occur in order to design reasonable and representative sampling and testing procedures (notwithstanding the limitations listed above). One approach may be to monitor the macroinvertebrate community that occurs in the short 5E section to ensure that adequate abundance of known waterfowl and shorebird prey items exist in these important wetlands. Biological data for these unique 5E wetland exists since 2005, including macroinvertebrate samples, shorebird nesting and hatching success and stomach analysis (food chain organisms; Cavitt 2007, Miller and Hoven 2007). These data can be used for direct comparison with future monitoring and assessment data to determine whether 5E wetlands that receive discharges are supporting their assigned beneficial uses.

Page 3 of the document states: The species currently identified as being residents of Great Salt Lake suggest that the recalculation procedures will be applied to existing freshwater numeric criteria that will be supplemented with any available more recent toxicity data.

Comment: DWQ needs to reveal the taxa list and locations where collected in supporting this statement. From personal experience, I believe this statement may be too general, if not inaccurate. It suggests, in fact, that only Farmington Bay or Bear River Bay taxa are currently being tabulated. Otherwise, there would be no species/family overlap because of the extreme salinity of the North and South arms of the lake. But even if the list is generated from samples from Farmington and Bear River Bays, these taxa most likely, have only been dominant for the last few years (since 1999), when the lake has been near record low levels. For example, Farmington Bay, which receives many of the discharges to which this document is intended, experiences wide fluctuations in salinity. In turn, this salinity dominates the environmental factors which dictate

conditions under which any particular species will flourish, or even survive. While some brackish and freshwater species do flourish in Farmington Bay during low lake levels and/or high inflows (i.e. most of the last several years), the current conditions are not representative of (salinity) conditions under normal (higher lake elevations). Therefore, complete and appropriate taxa list(s) would include those taxa that occur within at least two and perhaps three salinity ranges. This is a daunting task that would require different flow and lake elevation scenarios. At a minimum, the species list needs to be revealed to stakeholders and researches working on the lake for complete review of suggested species for the recalculation procedure.



NORTH DAVIS SEWER DISTRICT

November 21, 2014

State of Utah
Department of Environmental Quality
Division of Water Quality
P.O. Box 144870
Salt Lake City, Utah 84114-4870

ATTN: Chris Bittner

SUBJECT: Comments on Interim Methods for Evaluating Use Support for Great Salt Lake
UPDES Permits

Dear Chris:

The North Davis Sewer District (District) respectfully submits the following comments to the Utah Division of Water Quality (DWQ) on the draft document titled "Interim Methods for Evaluating Use Support for Great Salt Lake UPDES Permits" (Document):

1. The potential cost of gathering, analyzing, and submitting the data needed to comply with the requirements and processes described in the Document is significant and an unnecessary burden on the residents of our District. Development of our Pretreatment Program, including the evaluation for establishing local limits, along with the many years of successfully passing acute whole effluent toxicity (WET) testing should be sufficient validation that the District's current level of treatment is protecting the environment and protecting the beneficial uses of Great Salt Lake (Lake).
2. We do not agree with the statements and assumptions made in the last paragraph of page 3 which state, "The available toxicity data for brine shrimp and limited data for brine flies suggest that these species are relatively tolerant of metals. Therefore, freshwater criteria are broadly appropriate as screening values for discharges to Great Salt Lake." There is not sufficient data available to deduce the conclusion made for applying freshwater criteria. The ecosystem of the Lake is unique and the application of freshwater criteria is not appropriate or scientifically justified.
3. The statement in the last sentence of the second paragraph on page 7 which states that, "... ocean WET test organisms may be a viable alternative for situations where dilution water is available" is not scientifically justified.
4. Performing Risk Assessments requires specialized expertise and is costly. Development of our Pretreatment Program, including the evaluation for local limits, along with the many years of successfully passing acute WET testing should be sufficient validation that the District's current level of treatment is protecting the environment and protecting the beneficial uses of the Lake.

5. The Document states that chronic WET testing results are to be interpreted as indicators on page 8. The District's position is that chronic WET testing should be used for monitoring purposes only and not a limit that could cause a permit violation. Is this the intent of the statement on page 8? In support of our position that chronic WET testing be for monitoring purposes only, its inclusion in the Self-Monitoring and Reporting Requirements table on page A-2 should be clarified with a footnote stating that it is not a permit limit and cannot be construed to cause a violation of permit conditions or requirements.

Thank you for your fair and sincere consideration of these comments. Please feel free to contact me if you have any questions or comments.

Sincerely,

NORTH DAVIS
SEWER DISTRICT



Kevin R. Cowan, P.E.
District Manager

JEFFRY T. NIERMEYER
DIRECTOR

SALT LAKE CITY CORPORATION

DEPARTMENT OF PUBLIC UTILITIES
WATER SUPPLY AND WATERWORKS
WATER RECLAMATION AND STORMWATER

RALPH BECKER
MAYOR

November 24, 2014

Mr. Walt Baker, P.E.
Utah Division of Water Quality
Utah Department of Environmental Quality, Third Floor
195 North 1950 West
Salt Lake City, Utah 84116

DELIVERED VIA EMAIL to Mr. Chris Bittner - cbittner@utah.gov

Subject: Salt Lake City comments regarding the *Interim Methods for Evaluating Use Support for the Great Salt Lake, Utah Pollution Discharge Elimination System (UPDES) Permits*.

Dear Mr. Baker,

Salt Lake City Department of Public Utilities (City) appreciates the opportunity to provide comments regarding the *Interim Methods for Evaluating Use Support for the Great Salt Lake, Utah Pollution Discharge Elimination System (UPDES) Permits*, hereafter referred to as the Interim Approach. Currently there are many unknowns and uncertainties regarding the scientific research and the Great Salt Lake. Therefore, the City will continue to support the Utah Division of Water Quality (DWQ) in their efforts to develop science-based criteria for the Great Salt Lake.

Use Support Evaluations

In the Interim Approach, the DWQ stated that "*freshwater criteria are broadly appropriate as screening values for discharges to the Great Salt Lake.*" The City agrees with this broad assumption of freshwater criteria as screening values and applauds the DWQ for compiling a species list of resident species for the Great Salt Lake that may ultimately be used in support of derivation of specific Great Salt Lake science-base numeric criteria. The City recently (2013) completed a screening evaluation of the effluent from the Salt Lake City Water Reclamation Facility with comparison to Class 3 criteria and will continue to work with the DWQ during our upcoming permit cycle to further characterize our receiving water.

Interim Whole Effluent Toxicity (WET) Testing

The Interim Approach presents an interim policy for WET testing specific to the Great Salt Lake. The Interim Approach states,

"Until the chronic WET test organisms are concluded to represent the Great Salt Lake biota, the chronic WET testing endpoints of survival, growth, and reproduction are not considered an absolute determinant of the potential toxicity of the effluent for the Great Salt Lake but are instead interpreted as indicators."

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The Interim Approach further states,

“Using test organisms that are not representative of the biota in the receiving waters introduces the potential for errors when interpreting the WET test results. These errors could result in decisions that are either under- or over-protective of the receiving waters.”

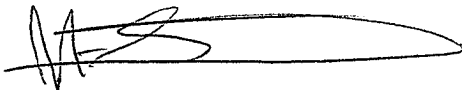
The City does not agree with broad implementation of Chronic WET testing prior to the development of a DWQ list of specific Great Salt Lake chronic and acute WET test organisms. However, the City looks forward to the DWQ developing the list of specific Great Salt Lake chronic and acute WET test organisms and will assist, as possible, in the development of the list. Should chronic WET Testing be implemented, the City agrees with the DWQ approach of using the results as indicators and that the testing is to be used as a screening tool and not for determining reasonable potential for toxicity or non-compliance with the permit.

Mixing Zones for Great Salt Lake

Because of the unique nature of the Great Salt Lake (e.g., as stated in the Interim Approach - large variance in lake level, shallow depth, more buoyant fresh water influent, wind shear, and water current) the City agrees that analysis of mixing zones requires more sophisticated mixing zone models.

The City agrees that the Great Salt Lake requires additional investigation and study prior to implementation of final numeric criteria. The City will continue to support the DWQ in their efforts to establish science-based criteria for the Great Salt Lake.

Sincerely yours,



Jesse A. Stewart
Water Quality & Treatment Administrator

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Cc: Jeff Niermeyer, Director of Salt Lake City Public Utilities
Tom Ward, Deputy Director of Salt Lake City Public Utilities
Dale Christensen, Manager, Salt Lake City Water Reclamation Facility
file

Via email

U.S. Fish & Wildlife Service, Utah Ecological Services Field Office and Region 6 Office (Denver),
integrated comments:

General comments:

- 1) There are several typos in the document, including “UDPES” instead of “UPDES” in the document header and in several other places such as the first sentence in the “Scope” section on page 1. Recommend doing a “search/replace” to edit these.
- 2) There is also a repeated word typo in the Forward section (“This process is intended to document that that...”)
- 3) In general, the Service supports the approach that UDWQ is using to address this issue as well as the larger issue of numeric water quality standards for the Great Salt Lake. However, we also recommend that the Division consider the “Steering Panel- Science Panel” approach most recently utilized for the nutrient assessment of the Willard Spur, to address these issues, both for the development of numeric criteria, and also to develop an approach and the appropriate science for the whole effluent toxicity (WET) testing (whether interim or final) discussed in Step 6 of the proposed interim permitting approach.

Specific Comments:

- 1) **Derivation of Screening Values (Page 3)**—Two comments here. First, it would be helpful to provide more details regarding the “EPA Deletion Process” mentioned here (e.g., in a footnote, or an appendix section). What will be deleted? Why would the “species identified as being residents of the Great Salt Lake suggest that the recalculation procedures will be applied to existing freshwater numeric criteria...”? Secondly, we suggest that UDWQ seek the input of Great Salt Lake resource managers, especially the Utah Division of Natural Resources’ Great Salt Lake Ecosystem Project (GSLEP) to identify and/or concur with the resident species that will be used to support the derivation of numeric criteria.
- 2) **Page 3, third paragraph**—“The available toxicity data for brine shrimp and limited data for brine flies suggest that these species are relatively tolerant of metals.” After reviewing the cited reference (DWQ, 2013; see document for citation), this sentence should be changed to “There is very limited toxicity data available for brine shrimp and brine flies, but there is some indication that these species may be relatively tolerant of metals.”
- 3) **Page 4, first paragraph**-- Typo: “...additional data ~~is~~ are...”
- 4) **Page 6 (Step 2), first paragraph**—“...should not change the receiving water temperatures by more than 4° C (Class 3B requirements).” Is this value based on research? While this may be a regulatory condition, it may or may not be appropriate to the GSL ecosystem. UDWQ should consult with experts (e.g., Gary Belovsky or others working with the GSLEP) to determine if this is appropriate.
- 5) **Step 3 (Page 6)**—“The pollutant effluent concentrations are compared to the receiving water concentrations before mixing.” While I can see that this statement is getting at ruling out pollutants

that are present at less than “ambient” concentrations, I have a concern if “ambient” also includes pollutant concentrations (loads) from other sources. Clarify how this step would work in the presence of other pollutant loadings.

6) **Step 4 (Page 6)**- Second to last sentence, edit: “When a pollutant concentration **after mixing** is less than the criteria...” (add words in bold).

7) **Step 6 (Page 7)**- This step gets at the heart of this guidance, which is WET testing for pollutants that have not been screened out by the previous steps. It seems that the difficulties with WET testing will be the same as the difficulties that already exist for developing numeric criteria, namely the lack of GSL-relevant data. It appears that the logic here is that existing (though potentially not relevant) data will be used to support WET testing while numeric criteria are being developed. If this is the case the approach should be more clearly spelled out, and the benefits and risks of the approach discussed. One question I have is whether it would be possible to screen the pollutants that are currently permitted under existing UPDES permits for discharges to the Great Salt Lake to determine what pollutants would make it to Step 6, in order to determine the number and type of pollutants that might need to be addressed through this proposed approach. It may be that some of these “survivors” might be important enough (e.g., in terms of frequency in discharges, potential toxicity to GSL organisms and impacts to beneficial uses, etc) to be added to the priority list for the development of numeric criteria.

8) **Interim Whole Effluent Toxicity (WET) Testing (page 8)**—First, introductory paragraph below heading. This paragraphs states that “An interim policy is needed until DWQ makes a determination regarding what WET test species are appropriate to represent the Great Salt Lake ecosystem.”, however, there is no discussion of the process or timing for UDWQ to make that determination. How long is it likely that these interim measures will be in place? How will WET test species and methods be developed?

9) **Second bullet, WET Testing (page 8)**—As an example of this concern, it appears that EPA will need to be involved to approve an appropriate test species for the GSL because neither freshwater or marine organisms may be appropriate (or the results of the test may be difficult to interpret for GSL waters). Does DWQ have the ability to select an interim GSL-specific test organism?

10) **Third bullet, WET testing (page 8)**—Apart from concerns regarding the selection of WET test organisms, we agree with the approach (stated several times in the document) of using results from this interim method as “indicators,” in that “...if effects are observed, further investigation is necessary to interpret the results in the context of Great Salt Lake organisms.” However, unless there is reasonable certainty that the organisms being tested will respond similarly to GSL organisms, and that they are *more* sensitive to the pollutant at issue than GSL organisms, it may not be sufficiently conservative to judge that “if no effects are observed, then no effects are predicted for Great Salt Lake organisms. This is the primary reason that it seems there should be more consideration of, and stakeholder/scientific input to the WET test approach, and also to the consideration of which pollutants might cause a discharger to have to implement WET testing (such that potentially those pollutants should be added to the list of pollutants subject to GSL organism toxicity testing).

11) **Whole Effluent Toxic Control Program Figure 1 (page 9)**—This flow chart should have “yes” and “no” (left and right, respectively) on the lines coming from the box in the right-hand column labeled “No chronic toxicity for twelve consecutive months (5)”

12) **Page 10, Third Paragraph**—There are the same concerns here regarding the interpretation of an “absence of effects” condition as expressed in comment 10, above. It seems at a minimum that UDWQ must demonstrate that the test organisms used for a GSL WET test are at least, if not more,

sensitive to the pollutant(s) being tested than GSL organisms in order for this approach to be protective.

13) **“Pollutant causing effects identified?” (Page 12-13)**-- To what extent is the process outlined in this step transparent to resource management agencies and the public? At what point do they get a chance to review/weigh in on this evaluation & decision? If the opportunity for comment is not until the very end of the process (i.e., notification of a board decision), this makes it very difficult to evaluate and contribute to the discussion leading up to this decision. This is another reason that the Steering Panel/Science Panel approach is recommended—both to ensure that issues and ideas are identified up front, and to ease the implementation of the policy and regulations at the end of the process.

14) **“Great Salt Lake aquatic life uses protected?”, second paragraph (page 13)**—The statement “Standard WET testing organisms may be more sensitive than the aquatic life community in the Great Salt Lake.” should be backed up with a citation at a minimum, and a discussion preferably. This is the primary issue involved in whether or not “no effects observed” is an indicator of no effects anticipated to GSL aquatic life community (see comments 10 and 12, above).

15) **Mixing Zones (page 14), third paragraph**—What is the definition of a “critical dry period” as used in the second-to-last sentence of this paragraph? Does this account for periods of extended (e.g., multi-year) drought? This would also be a concern for transitional waters that would normally have standing water even during critical dry periods, where extended drought could result in even these wetlands having standing water. Would mixing zones which would normally be allowed in these areas not be allowed during this kind of drought condition?

16) **Visual Plumes (VP) (page 16)**—While it is noted that the model used for this analysis is only available on the Windows XP platform, it should also be noted that Microsoft quit supporting the XP platform in April 2014. Maybe there should be a footnote that mentions this model should not be used unless it is updated to a more current platform.

17) **Appendix A: Recommended UPDES Permit Text**—because of issues discussed above, it seems that the question of what are appropriate GSL-specific test organisms (or surrogates) for WET testing for GSL discharges should be resolved. In the absence of that decision, the certainty of the permit conditions to protect GSL designated uses is difficult to determine.



WESTERN RESOURCE ADVOCATES

November 24, 2014

Chris Bittner
Environmental Scientist
Division of Water Quality
195 North 1950 West
Salt Lake City, Utah 84116

Dear Chris:

Before offering specific comments on this proposal, we reiterate how pleased FRIENDS of Great Salt Lake (FRIENDS) is to see the Division of Water Quality (DWQ) take this approach to Utah Pollution Discharge Elimination System (UPDES) permitting for Great Salt Lake. FRIENDS has long been a critic of the subjective nature of decision making inherent in using narrative standards alone as a means of protecting Great Salt Lake's water quality, and this interim approach should allow DWQ to make those decisions based on best available sound science. As you state in the introduction, in spite of DWQ's best efforts, it will be quite some time before specific numeric water quality standards for Great Salt Lake are developed and implemented. However, these interim methods allow DWQ to take a conservative approach to evaluating the potential harm that a discharge could cause to Great Salt Lake as a means of ensuring that that discharge will not impair the Lake's ecosystem. While we applaud this effort as a welcome and necessary change to current practice, we offer the following comments on this proposal.

Transitional Wetlands

As you know, FRIENDS has stated in the past that it is inappropriate to allow for a mixing zone in any transitional wetlands. As FRIENDS has noted, no mixing is possible in transitional wetlands when the only water source within the discharge zone emanates from the discharge itself. Until the discharge reaches the open water of Great Salt Lake there is no justification for allowing the mixing zone. Unfortunately, it is not clear whether this proposal addresses those concerns. What does DWQ mean by "critical dry periods" and "standing water" when discussing mixing zones? Draft Interim Approach at 14. Is the agency referring to standing Lake water or standing water from the discharge? Please clarify. Further, rather than using the average Lake elevation over the previous five years to determine the boundary of Great Salt Lake open waters, DWQ should use the lowest Lake level over the past five years for the purposes of the mixing analysis.

Permit Process

In general, FRIENDS hopes that the permitting process will remain open and transparent, even as the permittee is working through the interim evaluation process. As the process for evaluating potential impacts for a discharge unfolds, when scientific uncertainty arises DWQ

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should consider involving the broader scientific community to address that uncertainty. Although it would be difficult to organize on a permit-by-permit basis, DWQ should consider assembling a science panel from various disciplines to address these issues on an as-needed basis.

Scope

In this section of the draft interim approach, DWQ focuses on R317-2-7.2 when referring to the relevant narrative standards that apply to Great Salt Lake. However, it would be more appropriate to focus on R317-2-7, Water Quality Standards, including the Narrative Standards, when discussing protection of Great Salt Lake's uses. *Id.* at 1. Alternatively, please clarify if it is your intention that the proposed guidance interprets only the 7.2 standard and not other applicable, "non-numeric" water quality standards.

Data Gaps

When addressing data gaps during permit renewals, DWQ should require the permittee to fill those gaps as expeditiously as possible rather than allowing a full permit cycle to lapse. Draft Interim Approach at 3.

Pollutant Loading and Cumulative Impacts

It appears that the proposed guidance assumes that pollutant loading and the cumulative impact of discharges are not relevant to assessing whether a discharge will threaten designated uses. For example, the guidance states relative to the effluent under consideration that "[w]hen a pollutant concentration is less than the criteria, the concentrations can be concluded to be protective of the use." *Id.* at 7. Certainly, there are situations where the cumulative effect of several discharges emitting effluent in concentrations less than the Class 3 criteria could impair beneficial uses. Please explain how the proposed guidance will ensure that, cumulatively, discharges will not adversely impact designated uses and will guarantee that loading of pollutants in Great Salt Lake will not impair those uses.

Background Concentrations

Similarly, the proposed guidance states: "By definition, pollutant concentrations less than ambient do not degrade water quality." *Id.* at 6. As an initial matter, it is important to note that the goal of the proposed guidance is to protect beneficial uses. To be applicable to the guidance, this statement would have to read: "By definition, pollutant concentrations less than ambient will not impair beneficial uses." Has there been a determination that all Great Salt Lake beneficial uses are being met? If so, please explain how such a conclusion could be reached without reference to water quality standards or lake-wide analysis. Plainly, if background concentrations are not protecting beneficial uses, the discharge of effluent of the same concentration as background would not, by definition, be deemed as protective of beneficial uses. Finally, it is important to note that Utah's Antidegradation policy states that Level II review is not necessary only where "the proposed concentration-based effluent limit is less than or equal to the ambient concentration in the receiving water **during critical conditions.**" Utah Admin. Code R317-2-

3.5.b.1(a). The proposed guidance fails to refer to “critical conditions” or explain how the guidance address how beneficial uses or water quality are maintained during critical conditions.

Antidegradation Review

It is unclear how the proposed guidance relates to required anti-degradation review. After all, antidegradation review is intended to maintain high water quality where it exists. Will DWQ assume that for all pollutants, Great Salt Lake water quality is “better than the established standards?” Moreover, antidegradation review is in part based on a determination of whether “existing uses will be maintained and protected.” Utah Admin. Code R317-2-3.5 (“A Level I review is conducted to insure that existing uses will be maintained and protected.”). Please explain how this determination would be made in light of the proposed guidance.

Freshwater Criteria as Screening Values

While we agree that freshwater criteria are generally appropriate as screening values for discharges into Great Salt Lake, that statement does not account for situations where there is bioaccumulation within birds, or the situation where standards for saline waters are more stringent than freshwater criteria. Draft Interim Approach at 3. Please clarify.

Also, please clarify what you mean by the statement: “If pollutant concentrations are less than or equal to the indicators, adverse effects to Great Salt Lake biota are unlikely....” *Id.* at 4.

Page four, first full paragraph, fourth sentence should read: “The final outcome must be that the discharge will not impair the designated and existing uses or lead to a violation of R317-2-7.1.”

WET Testing

WET testing is a vital component of the water quality standards implementation through the NPDES permitting process and supports meeting the goals of the Clean Water Act to “maintain the chemical, physical and **biological integrity of the nation's waters.**” WET testing assesses the aggregate toxic effect of a discharge. WET tests replicate the total effect and actual environmental exposure of aquatic life to toxic pollutants in an effluent without requiring the identification of the specific pollutants. The proposed guidance does not appear to require WET testing in order to establish that the aggregate effect of a discharge will not impair beneficial uses. Please explain how you can ensure that the aggregate effect of a discharge will not impair beneficial uses without requiring WET testing in all instances.

Thank you for this opportunity to comment on the interim UPDES permitting procedures and, as always, thank you for all you do to protect Great Salt Lake.



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November 24, 2014

BY E-MAIL

Chris Bittner
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**Re: Comments on Interim Methods for Evaluating Use Support for Great Salt
Lake UPDES Permits**

Dear Mr. Bittner:

Kennecott Utah Copper LLC (Rio Tinto Kennecott Copper or RTKC) appreciates the opportunity to review and provide the following comments on the Division of Water Quality's (DWQ) draft guidance, "Interim Approach for UPDES Permitting for Discharges to Great Salt Lake" (the Interim Approach).¹ The comments in this letter are specifically limited to the issues raised in the Interim Approach and do not, for example, reflect a review of or concurrence with the other revised Great Salt Lake Water Quality Strategy documents.

Scope. Consistent with its comments on the 2013 draft memorandum, RTKC supports DWQ's recognition that the Interim Approach does not constitute a requirement and that "alternative methods or interpretations are acceptable" subject to a demonstration that those

¹ RTKC has submitted numerous comments on documents directly related to the Interim Approach including: comments submitted March 29, 2013, addressing the February 6, 2013 draft memorandum on the Approach for Determining UPDES Effluent Limits Protective of Great Salt Lake Aquatic Uses, Classes 5A through 5E (referred to as the 2013 draft memorandum which was presented to dischargers in a meeting at DWQ on March 4, 2013 and its foundation described in a February 22, 2013 letter from Walt Baker to RTKC's Paula Doughty); comments submitted April 16, 2014, addressing the March 19, 2014 draft guidance on Great Salt Lake Chronic WET Testing Issues (which draft was presented to dischargers in a meeting at DWQ on March 25, 2014); comments submitted August 21, 2013, addressing the July 22, 2013 Review Draft, Prioritization of Brine Shrimp and Brine Fly Bioassay Test Pollutants for Gilbert Bay, Great Salt Lake Utah (asking to see the corresponding work plans); and earlier comments including those submitted on July 16, 2012, addressing A Great Salt Lake Water Quality Strategy (which strategy RTKC now understands was recently revised along with its core components relative to developing aquatic life numeric criteria for priority pollutants and strategic monitoring and research). RTKC adopts the relevant comments raised in these earlier submittals, by reference.

methods protect aquatic life uses.² Interim Approach at 1. DWQ cites to UAC R317-8-4.2(4)(a)6.a. and b as the foundation for the Interim Approach and illustrative of the steps that could be taken to interpret the lake's narrative water quality criteria. That rule provision addresses, as you know, various options for development of water quality criteria for any constituent present in effluent at a concentration that "causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion." In that regard, RTKC has two specific comments.

First, the cited rule also provides that (where there is reasonable potential) appropriate effluent limits can be established for an indicator parameter (UAC R317-8-4.2(4)(a)6.c.). As such, DWQ should further clarify that the rule as cited is incomplete (and that the rule itself recognizes an alternative approach to effluent limitation development where necessary). Second, since the criteria development (and corresponding permit requirements) would be predicated on a finding of "reasonable potential," it is important that any such finding be well documented, supported by science and not unduly conservative. It follows that DWQ's derivation of screening values is critical to ensuring that any development of water quality criteria be necessary for protecting the beneficial uses of the lake as opposed to triggering additional, unsupported requirements for the regulated community.

Derivation of Screening Values. RTKC recognizes and objects to the fact that the six steps for deriving effluent screening values are all based on the relevance of freshwater criteria. RTKC does not agree that freshwater criteria are "broadly appropriate as screening values for discharges to Great Salt Lake." In fact, RTKC maintains that freshwater criteria are broadly inappropriate as screening values for discharges to the Great Salt Lake. Interim Approach at 3.

As noted in prior RTKC comments, the referenced freshwater standards (and the Environmental Protection Agency's (EPA) marine standards) are not relevant to hypersaline systems like the Great Salt Lake. EPA has long recognized these facts and clarified that the freshwater criteria could not be directly applied to the Great Salt Lake. *See* EPA's 1985 Guidelines for Deriving Numerical National Water Quality Criteria for the Protection Of Aquatic Organisms and Their Uses, Stephen et al. at 2 (recognizing the breadth of applicability of the criteria but also specifying that a few water bodies may be too atypical to use those criteria such as the Great Salt Lake). Since the criteria themselves are not relevant to the lake (and were not developed based on the lake's aquatic uses), use of those criteria for screening discharges to the lake (and evaluating reasonable potential) is similarly inappropriate.

² RTKC recognizes and supports a case-by-case review and reiterates prior admonitions; DWQ should not insert unwarranted degrees of conservatism in such a review. Indeed, as explained below, there is tremendous evidence that existing discharge standards are protecting the beneficial uses of the lake. DWQ should "weigh the evidence" and avoid premature, unsupported requirements especially in light of the ongoing DWQ studies that will shed additional light on appropriate conditions for protecting the lake.

RTKC recognizes that DWQ identifies the freshwater screening levels as conservative and that the constituents warranting follow-up can be further narrowed by site-specific evaluation (described in the draft guidance). The suggested supplemental constituent review is, however, not well documented. For example, step five of the screening approach identifies the potential use of a biotic ligand model for copper and zinc. The suggestion would, however, have uncertain benefits since there is no established method for supporting the associated biotic ligand modeling for discharges to the lake. Similarly, step six of the screening approach suggests other possible site-specific steps but recognizes the short-comings of the approach. Specifically, the Interim Approach provides “[a]ny remaining pollutants that do not meet the screening benchmarks should be evaluated using methods that demonstrate that the uses will not be impaired by the pollutant. No specific guidance is available for how to conduct these evaluations.” Interim Approach at 7. If DWQ is going to recommend the ultra-conservative freshwater screening criteria, there must be more foundation for specifically assessing the constituents that remain after utilizing those criteria. The existing draft guidance falls short.

RTKC continues to maintain that the planned brine shrimp and brine fly bioassay testing will trigger data collection that will answer questions regarding toxicity threshold information. The information will, of course, be directly relevant to the selection of screening levels. In the meantime, other information (including ongoing results from Whole Effluent Toxicity (WET) testing of discharges) can further demonstrate that the beneficial uses of the lake are being protected. RTKC requests that DWQ further clarify the problems with applying fresh water aquatic criteria to the lake and specify examples of the alternative approaches, e.g., the review of WET testing of discharges (which can be supplemented with the information being obtained from the planned lake studies, when available), that are appropriate to supplant reliance on screening effluent against fresh water criteria.

In addition to the threshold approach to screening levels, RTKC generally concurs with DWQ’s stated assertions relevant to the appropriate values that should be screened. Specifically, DWQ maintains that, as part of screening and for quantifying discharge pollutant concentrations (for evaluating maximum estimated concentrations in the effluent), “previous permit limits may be appropriate estimates of the maximum pollutant concentrations if supported by monitoring data.” Interim Approach at 4. Along those lines, RTKC believes that the maximum pollutant concentrations established as permit limits (whether or not supported by monitoring data) should be assessed against the referenced real data relevant to the lake, e.g., the toxicity testing data associated with the brine shrimp and brine fly bioassay testing.³ Some of those data may already exist.

³ DWQ also indicates that while there are no temperature criteria relative to the lake, “effluent should not change the receiving water temperature by more than 4 degrees C (citing the Class 3B fresh water criteria)”. While RTKC recognizes that DWQ allows for exceptions to this recommendation, any reference to a temperature standard (where one has not been promulgated for the receiving waters) is inappropriate.

WET Testing. DWQ also uses the Interim Approach to document its guidance on WET testing specific to Great Salt Lake discharges, i.e., follow-up to the March 2014 discussion draft.⁴ DWQ asserts such a policy is needed pending its determination of what WET test species are appropriate to represent the Great Salt Lake ecosystem. Consistent with RTKC's comments on the WET testing discussion, RTKC continues to maintain that freshwater species are not appropriate for conducting WET testing on discharges to the Great Salt Lake.

As DWQ is aware, RTKC has been conducting acute WET testing on sheepshead minnows for years. RTKC proposed the alternative test organism (which was approved by EPA) to account for the hardness in its effluent. In other words, there is already a track record of using effluent-specific species more relevant to the lake when evaluating discharges to the lake; those same issues need to be considered in the context of any revised WET testing requirements. Indeed, sheepshead minnows may be the logical "interim" WET test species pending authorization of any other, more specific WET test organism.

RTKC also recognizes that DWQ wants to implement chronic WET testing based on the assessment of receiving water dilution; DWQ asserts that chronic WET testing may be implemented if the receiving water dilution is less than 20:1. RTKC did not specifically object to the changes as reviewed last March provided certain clarifications are incorporated into the WET test approach.⁵ While some of RTKC's suggestions have been included in the Interim Approach, additional clarity is needed.

DWQ states that results of any required chronic WET testing will be interpreted as an "indicator".⁶ RTKC believes that DWQ should specify (in light of the potential difficulties in interpreting the results in the context of Great Salt Lake organisms), that any chronic WET testing cannot be used as a basis for any enforcement action or for the assessment or reasonable potential determination. Instead, if the chronic WET test fails the endpoints of survival, growth and reproduction, the permittee has the prescribed options for additional evaluation in order to provide the follow-up beneficial use protection assessment that would be required by DWQ. RTKC supports the concept that permittees can request a reduction in frequency of WET testing

⁴ DWQ also states that "[t]he specific procedures for [WET] testing will be incorporated into upcoming revisions to Utah's (statewide) 1991 WET Guidance." Interim Assessment at ii. RTKC anticipates that those changes will also be noticed for public comment.

⁵ RTKC does, however, have a foundation for objecting to chronic WET testing. EPA took the position (in December of 2000) that the sporadic nature of RTKC's discharge from the tailings impoundment (relative to a different outfall) indicated that chronic WET testing was not warranted. Those same conditions hold true today relative to the nature of the discharges from Outfall 012.

⁶ RTKC agrees with DWQ's conclusion that "an absence of effects during chronic WET testing are presumed to be protective of the Great Salt Lake biota and demonstrate compliance with the Narrative Standards." Interim Assessment at 10.

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November 24, 2014
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after a certain number of tests with no toxicity (a permit modification that occurs without public notice).⁷

Mixing Zones. The Interim Assessment would clarify that (1) mixing zones are not allowed for discharges to “fringe wetlands within the Class 5E Transitional Waters of Great Salt Lake” (based on the notion that there will be no standing water during critical dry periods) and (2) mixing zones are allowed within the Transitional Waters where there is standing water even during critical dry periods (subject to the requirements, e.g., distance limits) for mixing zones in lakes and reservoirs). DWQ suggests that for any purposes of mixing zone evaluation, the lake begins at the average lake elevation over the past five years. RTKC recognizes the tremendous variability in lake levels (and the corresponding changes over time with respect to high water marks); mixing zones should not, however, vary with the lake levels. Instead, RTKC recommends that the mixing analysis for the lake begin where the discharge meets the wet water, i.e., that point where dilution is in progress.⁸ Any discharges that flow across the transitional zones to meet wet water can be assessed on a site-specific basis and subject to appropriate monitoring and other relevant requirements.

On a related issue, RTKC maintains that any modeling for evaluating mixing zones should be assessed on a case-by-case basis taking into account the unique mixing dynamics of the lake (including the distinct questions associated with when mixing occurs in the lake).

Thank you for your consideration of these comments.

Sincerely,

PARSONS BEHLE & LATIMER



Lisa A. Kirschner
Attorney at Law

⁷ RTKC also believes the specific number of tests triggering a request for reduced frequency should not be uniform but should be assessed on a permit-by-permit basis.

⁸ The Interim Assessment cites to EPA’s guidance document recognizing that a mixing zone is “where an effluent discharge undergoes initial dilution . . .” Interim Assessment at 14 (emphasis added). Of course, that concept is codified in rules implementing Utah’s Water Quality Act (cited later in the document). Utah Admin. R317-2-5.