NEVADA
STATE ENVIRONMENTAL COMMISSION

DRAFT MINUTES

SEC Regulatory Meeting

TIME	LOCATION
December 4, 2019 9:00 a.m.	Richard H. Bryan Building 901 S. Stewart Street Carson City, NV

SEC members present:

E. Jim Gans, chair
Tom Porta, vice-chair
Kathryn Landreth
Cary Richardson
Mark Turner
Tony Wasley in at 9:31 a.m.
Tim Wilson

Peggy Roeffer, CRC

Members absent:

Kacey KC
Rich Perry
Jennifer Ott

SEC staff present:

Ian Carr, AGO office
Valerie King, executive secretary
Shanon Pascual, recording secretary

Public present:

Larry Bazel, Clark Co. Regional Flood Control
John Tenner, Clark Co. Regional Flood Control Dan
Fisher, Clark Co. Water Reclamation District
Marlamedade Williams, Strategies 360
Rick Donahue, ECURD
John Solvie, ECURD
Robert McLoughlin, CNLV
Brenda Pohlmann, City of Henderson
Al Jankowiak, COH
Angela Mackinnon, HDR
Catherine LaBounty, HDR

Nevada Division of Environmental Protection staff present:

Mary Siders
Danilo Dragoni
Andrew Tucker
Greg Lovato
Paul Comba
Jeff Kinder
David Dragon
Kristen Burke
Stephanie Simpson
Jennifer Carr
Lisa Kremer
Weston Fettgather
Dave Simpson
Seth Alm
Skylar Jones
Daren Winkelman
Travis Osterhout
Erik Ringle

In these minutes:

Begin summary minutes

1) Call to order, roll call, establish quorum (Discussion)

The meeting was called to order at 9:05 a.m. by Chair Jim Gans. Executive Secretary Valerie King confirmed that the hearing was properly noticed and that a quorum was present.

2) Public comments

There were no public comments.

3) Approval of October 2, 2019, meeting minutes (Action item)

There were no corrections to the October meeting minutes.

Motion: Commissioner Turner moved to approve the minutes. Commissioner Landreth seconded the motion, and it passed unanimously.

Air Penalties

4) Western Gypsum State — Notice of alleged violation (NOAV), no. 2676, 2678, and 2710 (Action item)

Dr. Danilo Dragoni, chief of the Bureau of Water Quality Planning in the Nevada Division of Environmental Protection (NDEP), first introduced Mr. Andrew Tucker, the new supervisor of the Enforcement Branch for the bureau. Mr. Tucker has been working with NDEP for six years, first as an emission inventory specialist, then as part of the air quality modeling group, and finally as an enforcement officer.

Dr. Dragoni then gave an overview of three violations **(Attachment 1)** from a single facility, Western Gypsum State, which operates a gypsum and limestone mine under a class II air quality permit.

NDEP compliance officers were driving by the facility when they noticed large amounts of dust coming from the facility. They stopped to inspect the facility and observed that 17 systems were not controlling dust appropriately. The systems were not properly maintained, were capped off, were shut off, or were

just dripping water. During the inspection, NDEP staff also did a visual opacity test on another system, which showed the system to be 22.5 percent of opacity — three times the 7 percent opacity allowed by the permit.

NDEP did two enforcement conferences with the facility in January 2019 and September 2019 to assess what happened, to hear from the facility, and to decide whether the violations were significant enough to be brought up. During the enforcement conferences, the facility brought no significant information indicating that the violations should not be issued.

Vice-chair Porta asked for more information about the 7 percent limit on opacity. Mr. Tucker responded that the limit is a new source performance standard and a federal requirement.

Mr. Tucker then explained the penalties attached to the violations. He said that NDEP calculates each penalty using the penalty matrix, base penalties, and the penalty calculation worksheet found in the State Environmental Commission packet dated 2015.

Violation #1 (May 2017)**:** The base penalty for a class II source that fails a source compliance test for a new source performance standard limit is $4,000. The multiplier for the extent of the deviations was 1.39, which corresponds to the test result of 139 percent of the permitted limit. The facility had no additional modifiers applied for economic benefit or history of noncompliance in the previous 60 months, so the total **recommended penalty for NOAV 2710 is $5,560.**

Violation #2 (October 2018)**:** NOAV 2676 is for the failure to maintain air pollution controls — in this case water sprays for 17 emission units — as required by the permit. The base penalty for the failure to maintain controls for a class II source is $600. NDEP applied a 17 times multiplier, one for each of the emission units. This was calculated for one day, reflecting the length of time that controls were not maintained. No additional modifiers were applied for economic benefit or history of noncompliance, so the total **recommended penalty for NOAV 2676 is $10,200.**

Commissioner Richardson asked for a definition of an emission unit. Mr. Tucker replied that an emission unit is a source of emissions. It may be a conveyor belt transfer, a screen, a crusher, or similar equipment. In this case, 17 emission units were required to use water sprays to control dust.

Violation #3 (October 2018): NOAV 2678 is for a failed opacity observation for a new source performance standard. The penalty matrix in the main body does not provide a specific base penalty for a failed opacity observation, but the penalty calculation worksheet provides a base penalty of $1,000 for anything that is not explicitly stated in the penalty matrix. NDEP used a multiplier of 1.5 for the volume of the release, resulting in a **total gravity fine of $1,500.** No additional modifiers were applied for economic benefit or history of noncompliance.

Vice-chair Porta noted that the facility in question has had a relatively good history of compliance for the last five years. Dr. Dragoni replied that the facility had no official violations during the past five years, but he added that NDEP compliance officers had issued verbal warnings to the facility in the past after noticing dust. The penalty, however, only accounts for official violations.

Chair Gans asked how long the facility has operated. Mr. Tucker replied that the facility has operated since at least 2007 and that the facility is likely to continue operating in the near future.

Dr. Dragoni added that the facility is now fully in compliance. It passed a retest two months later, and NDEP officers did a full inspection a few months after that and found no issues.

Motion: Commissioner Landreth moved to approve NDEP's recommendation for the penalty assessment for NOAV 2676, 2678, and 2710. Commissioner Wilson seconded the motion, and it passed unanimously.

Regulatory Petitions

5) **Permanent Regulatory Petition R043-19: Bureau of Water Quality Planning – Selenium** (Action item)

Mr. Paul Comba, chief of the Bureau of Water Quality Planning in the Nevada Division of Environmental Protection (NDEP), introduced agenda item 5. He began with an overview of the Triennial Review process. The Triennial Review process results in a plan of work NDEP will complete over the coming three years related to water quality protection. It identifies what new or revised criteria have been finalized by the U.S. Environmental Protection Agency (EPA), and it evaluates whether the science behind the recommended criteria makes sense. NDEP also looks at various water basins and river systems in Nevada to identify whether their beneficial uses and water quality standards need evaluated. NDEP identifies programmatic or policy documents that need to either be updated or developed, holding public meetings to explain what actions for water quality protection NDEP will address over the next three years. At that point, the public, stakeholders, and permittees provide input on whether NDEP's plan needs revised.

After NDEP has created its plan, it explains to the EPA why it is not adopting certain recommended criteria. The EPA reviews NDEP's proposed standards to evaluate whether the revised numbers are supported by science and are appropriate for Nevada waters.

Mr. Comba then explained that the regulatory petition at hand was tabled in the October 2019 State Environmental Commission (SEC) meeting based on comments by several southern Nevada entities that the proposed selenium numbers are not appropriate for waters in the Las Vegas Valley, which have high natural background levels of selenium. He said that, although the original petition had some flexibility built into it for adjusting selenium standards, NDEP has since compromised further based on discussions with southern Nevada stakeholders. Specifically, the compromise involves an interim period for developing more appropriate selenium water quality standards for waters in the Las Vegas Valley.

Mr. Comba then explained how the petition addressed an additional concern over the application of the Tributary Rule to waterways that connect to the Las Vegas Wash. The Tributary Rule was incorporated in the Nevada Administrative Code (NAC) in the late 1970s, providing protection to tributaries of a designated water body that has adopted water quality standards. While tributaries may not have water quality standards, the waterway to which they connect might, so the Tributary Rule allows those water quality standards to be applied upstream to protect the main waterway.

Mr. Comba continued, stating that NDEP's Triennial Review plan often changes based on priorities or issues that come about after the Triennial Review. The application of the Tributary Rule to tributaries of the Las Vegas Wash falls within that category. He said that he hoped NDEP would both discuss the issue internally and with southern Nevada stakeholders to develop a strategy to investigate and evaluate which waterways are tributaries to the Las Vegas Wash. More importantly, he said they would discuss whether the tributaries can support aquatic life, which is the basis of NDEP's selenium regulatory petition.

Chair Gans asked whether a three-year interim period to collect information would be acceptable to the EPA. Mr. Comba said that it's difficult to predict until NDEP formally submits the regulatory petition to the EPA.

Chair Gans then asked what might happen if the EPA did not allow it. Mr. Comba replied that it may mean that NDEP would have to consider developing a variance regulation, which is how the EPA would

categorize NDEP's proposal. Mr. Comba said that there are really two issues — NDEP needs approval on both the state level through the SEC and on the federal level by the EPA, primarily because the Las Vegas Wash is under the jurisdiction of the Clean Water Act.

Chair Gans asked if Lake Mead, being a federal body of water, affected the issue. Dr. Mary Siders, a water quality scientist at NDEP, affirmed his question, saying that Lake Mead would be part of the waters that NDEP assess. However, the exemption in the petition providing more time to develop site-specific standards applies, chiefly, to the wash.

Dr. Siders then began NDEP's official presentation **(Attachment 2)**. The EPA is required to periodically review scientific data that accumulates over time and update its standards based on the new information. The last time the EPA came out with criteria for selenium was in 1987, and those old criteria didn't address bioaccumulation, which is the mechanism by which selenium moves through the food chain. Selenium moves through the food chain via egg tissue, causing deformities in fish and birds that eat those fish.

Dr. Siders stated that NDEP needs to adopt the criteria to protect different beneficial uses of Nevada's waters, in this case aquatic life. The EPA provides NDEP with these criteria because it employs ecotoxicologists who evaluate data from numerous studies. NDEP reviews the EPA's water quality standards, Nevada's water quality standards, the new criteria that have been released by the EPA every three years. NDEP then decides which standards should be considered for adoption in Nevada. NDEP uses these standards to assess the water quality in water bodies across Nevada, which is compiled into an integrated report that covers nearly 700 distinct water bodies for every standard. NDEP also reports these data to the EPA in a biennial report and uses water quality standards to set limits in discharge permits.

Dr. Sider's explained that the petition was triggered in 2016 after the EPA released a four-part criterion for selenium to protect aquatic life. The last time the EPA updated selenium numbers was in 1987, which NDEP adopted in 1990. Since it has been 30 years since the last update, the current standards don't address bioaccumulation or new scientific data that has been collected.

Chair Gans asked for an explanation of bioaccumulation. Dr. Siders answered that bioaccumulation is new to selenium. The previous values were based on calculations of uptake through the water. The EPA determined that organisms acquire selenium by eating, causing the selenium to move up the food chain from phytoplankton to the tropic level. Selenium is especially toxic to organisms that lay eggs because of the way that it metabolizes through maternal tissues, leaching into forming eggs. Dr. Siders said that selenium has a narrow distance between sufficiency and toxicity. It is an essential micronutrient, but organisms can have too much of it.

Dr. Siders then talked about the major sources of selenium. Most naturally occurring minerals contain different metals and inorganic substances. Selenium leaches from such minerals but becomes mobilized by human actions. Selenium tends to accumulate in the arid soils of Las Vegas and Nevada, in general, so irrigating Nevada's soils moves selenium into surface water systems. If influenced by irrigation, selenium accumulates in soils near the surface. Selenium is very mobile in alkaline oxidizing environments. The U.S. Fish and Wildlife Service expressed a concern in the lower Colorado River primarily because of irrigation of desert soils.

Dr. Siders said that the new four-part criterion for selenium is unusual because it has values for both fish tissue and the water column. It will also apply to all waters in Nevada that have aquatic life as a beneficial use in order to protect downstream waters. Referencing Mr. Comba's earlier comments on tributaries, she said the best approach for meeting the new standard is to examine waters downstream that support fish to see if those fish meet the criterion for fish tissue. She said that NDEP examined data

from storm water flowing into the Las Vegas Wash and found that they meet the proposed criteria.

Chair Gans asked whether there are different levels of tributaries. Dr. Siders said that designated waters have standards, so applying the Tributary Rule involves looking at those waters that have a set of standards. Nevada has designated standards for the Las Vegas Wash, so those standards would apply. Lake Mead has separate standards, which would probably be assessed independently. She said that only two states — Nebraska and Idaho — have adopted the selenium criterion so far, so it's not entirely clear how the EPA will interpret its implementation so far.

Mr. Comba added that Nevada's Tributary Rule, under the NAC, applies all the way up the watershed, beginning where the water starts. Multiple tributaries would fall underneath the Tributary Rule, including tributaries to tributaries. The NAC definition notes that there must be a surface, hydrologic connection for the majority of the year, which eliminates storm water flow from the current Tributary Rule. Additionally, storm water flow might be exempted because the NAC also excludes extreme flows — seven consecutive days of flow as a maximum or minimum in a 10-year period.

Dr. Siders continued, stating that EPA selenium tables are complex. There are numbers for fish tissue and the water column, and all of the numbers are based off egg ovary data. The table includes an egg ovary number, which is a bit higher than the accompanying whole-body or muscle number. In addition, the new table no longer includes acute and chronic criteria, which are common factors in other standards. Instead, the selenium table includes something for lentic systems (which are still waters, like lakes) and lotic systems (which are flowing waters, like rivers). When applying the standards to waterbodies, the fish tissue number has primacy over the water column number. In other words, the water column number can exceed the standard as long as the fish tissue number meets the standard. In order of primacy, the egg ovary number trumps the whole-body muscle number, which similarly trumps the water column number. The first step one must complete for a waterbody that exceeds the water column number is to collect and examine data on fish tissue.

Dr. Siders then shared background information on how the selenium criterion was developed. The EPA examined an exhaustive list of studies that looked at different trophic levels. After examining tissue, sediment, and water data, the EPA derived a bioaccumulation factor of 4.87, a number they arrived at by using the national average of 15.1 milligrams of selenium per kilogram dry weight for egg ovary tissue and a value for lotic flowing waters of 3.1.

Dr. Siders said it was important to understand this calculation because Nevada has sturgeon-free waters, and the EPA provides a method for recalculation — called the recalculation procedure — when this is the case. This method looks at sensitive species — like sturgeon — that were used in deriving the numbers and allows states to remove species and recalculate the values. Sturgeon is the most sensitive species in the EPA study, but Nevada doesn't have sturgeon or related fish, which prompted NDEP to recalculate using the EPA's methodology, providing a higher number. As a result, NDEP derived a number of 19 per egg ovary, 13.1 for fish muscles, and 9.5 for whole-body, numbers that have already been accepted by the EPA for Idaho.

Dr. Siders also said that Appendix K in the EPA's 807-page document on the matter includes a detailed discussion on how to develop site-specific values, which gives Nevada flexibility when developing site-specific numbers. Several technical documents on developing site-specific standards are also available.

Chair Gans asked whether there are specific steps NDEP must take when someone asks that a site-specific standard be developed. Dr. Siders replied that she would recommend that people hire an experienced ecotoxicologist and submit a sampling and analysis plan, which NDEP would have to approve prior to the work. She said that approach would allow NDEP staff to provide support on certain aspects of sampling.

Dr. Siders noted that the EPA actually rejected a proposed site-specific standard in Idaho, saying the state needed to collect more data to develop a site-specific bioaccumulation factor. Idaho had collected fish data but needed to collect both fish and water at the same time to develop a number. While the EPA approved most of Idaho's proposed standard, then, the EPA disapproved one bit and required more work.

Commissioner Landreth asked whether the onus was on the permittee to propose a site-specific standard. Dr. Siders said that is the case.

Mr. Comba reminded everyone that a site-specific number would come before the SEC for approval, only going to the EPA if it applied to a water covered by the Clean Water Act.

Dr. Siders continued her presentation, saying that NDEP did extensive outreach and held several public workshops since September 2017 — about a year after the EPA released its new aquatic criterion. NDEP held five stakeholder meetings. Dr. Siders also gave two presentations at professional conferences, one in Las Vegas and one in Reno. NDEP also hosted two sets of public workshops. NDEP had its Triennial Review one year ago before holding public workshops for the Colorado River selenium and cadmium petitions, the second of which was approved at an earlier SEC meeting in 2019.

Vice-chair Porta asked whether the EPA set a time limit for states to adopt a new standard. Dr. Siders replied that she didn't think there was a time limit. NDEP, she said, took up the issue because 30 years have passed since selenium was updated in 1990, making it prudent to incorporate the latest scientific literature.

Commissioner Turner asked whether the type of irrigation — like sprinkling versus flood irrigation — influences selenium concentrations differently. Dr. Siders said that she wasn't sure, stating that any water that is not taken up by plants leaches selenium. It is especially an issue in desert and phosphate-rich soils.

Chair Gans asked whether high alkaline soil was a factor in deserts leaching more selenium. Dr. Siders replied that the state of the dissolved selenium matters most, especially how it travels in oxy-alkaline environments. Selenium is very mobile because it travels as an oxyanion, which carries a net negative charge. Because soils have more cationic exchange sites than anion exchange sites, they tend to hold metals like cadmium better, which stick to the soil because of their positive charge. Substances like selenium, uranium, sulfate, and arsenic, on the other hand, do not stick, which is why such substances tend to accumulate in low-lying playas.

Dr. Siders said that tributaries entering the Las Vegas Wash exceed the current criterion for selenium based on assessments since 2006. However, because the Las Vegas Wash is an effluent-dominated system — flowing with low-selenium wastewater from treatment plants — it has lower selenium levels and meets the numbers being proposed, on average.

Vice-chair Porta said his main concern is how the EPA would understand the petition, if adopted by the SEC, in terms of the tributary rule. Dr. Siders replied that NDEP has an assessment tool it uses to assess Nevada's 697 water bodies. After using the tool to compare the old and new selenium standards, NDEP found that only an additional 14 water bodies became listed for selenium across the entire state. Since the tributaries for the Las Vegas Wash do not meet the current selenium standard, nothing will change around the wash in terms of listing.

Mr. Comba advised the commissioners to keep in mind that NDEP assesses "upland tributaries" based on water chemistry data. However, it has not necessarily investigated whether they truly are tributaries to the Las Vegas Wash. To do that, NDEP would need to gather additional data on flow and aquatic life. Mr. Comba stressed that such a study is a parallel effort but also a separate issue that will require

further investigation by NDEP and additional collaboration with southern Nevada stakeholders. Such a task would involve developing a strategy and gathering supporting information to justify to the EPA why those certain upland tributaries should not be treated as such. Since the NAC does not have standards for the tributaries, the standards for the Las Vegas Wash are extended to the tributaries. If a site-specific number were developed for the Las Vegas Wash, it would then apply to the tributaries.

Dr. Siders then commented on a few complications the EPA encountered when creating the new selenium standard. Selenium occurs in several forms, including selenite and selenate, and the EPA determined that selenite is much more toxic than the selenate. A study funded by NDEP in the early 2000's found that the Las Vegas Wash is dominated by the less toxic form; it is 99% selenate. Because the wash is dominated by selenate, fish in the wash could be adapted to higher values than what NDEP measures. Furthermore, sulfate and selenate are similarly sized ions, creating a competitive ion effect. As a result, the presence of sulfate makes selenate less bioavailable, much like increased hardness makes cadmium less available. The higher the hardness (calcium and magnesium), the lower the toxicity and bioavailability of cadmium. Sulfate behaves similarly. Another study done in the Las Vegas Wetlands Park suggests that the site-specific selenium numbers could be considerably higher than the EPA's nationwide bioaccumulation factor just based on the presence of selenate and sulfate.

Dr. Siders said that NDEP added language to the petition that gives an additional three years to create site-specific standards. In the interim, NDEP's proposal keeps the existing standards for the Las Vegas Wash. NDEP's proposal revolves around three water body segments. One is upstream of the confluence of the wastewater treatment discharge, an area with high selenium. Once treated wastewater enters the wash, however, the numbers drop considerably, extending down the second segment to the Historic Lateral. Another reach extends from the Historic Lateral to the confluence of Lake Mead. Importantly, the wash does not go into Lake Las Vegas but is piped underneath and is not included as part of the wash.

Dr. Siders said that the Lake Mead Water Quality Forum formed a selenium subcommittee in 2000. Additionally, Jim Pollard from the University of Nevada, Las Vegas (UNLV) did a study when the wetlands park was being developed to gather selenium data. These studies found that whole-body fish numbers were high from 2000-2004 before the treated effluent was released into the wetlands park. The fish responded to the change surprisingly quickly, and by 2007 tissue concentrations fell below the 9.5 whole-body number. Dr. Siders cautioned that she wouldn't recommend using these numbers in an assessment because she doesn't have details on how the study was performed, but she said the numbers are encouraging. She said it does not matter what is in the water as long as fish tissue samples — collected according to the EPA methods — are below 9.5.

Vice-chair Porta said that he remembers the study because he was part of the Lake Mead Water Quality Forum at the time. He commented that the saying, "a solution to pollution is dilution," is true in this case. More water and more effluent in the wash helped the fish.

Vice-chair Porta then asked whether anyone had examined fish tissue more recently. Dr. Siders replied that she was not aware of any such studies.

In response to a question from Chair Gans, Dr. Siders said that the EPA considers high sulfate to be 100 milligrams per liter. The wash has about 1,700 milligrams of sulfate per liter, which is a high number. But Dr. Siders said that she has seen numbers of 3,500 in shallow groundwater, which potentially mitigates the effect of selenate — the less toxic form of selenium — and makes the national bioaccumulation values less appropriate. To respond to factors like this, the EPA specifically allows for site-specific numbers.

Dr. Siders said someone might simply collect fish tissue to see if it meets the standard. If it does, then a

site-specific standard, something allowed by the EPA, may be a good way to delist the waters.

Chair Gans commented that the wash is dominated by effluent. He asked whether population growth in Las Vegas would make the numbers even better in 12-13 years. Dr. Siders replied that the study was done to see how much selenium the wastewater treatment plants remove. They remove, on average, 52% of the selenium that goes in, reducing selenium averages from three to 1.4 when it exits the plant. She also commented that the new standard is for dissolved selenium; the old standard is for total selenium.

Chair Gans asked whether there were plans to do another study in 2020. Dr. Siders replied that NDEP may do it, but would likely encourage another entity to do it.

Vice-chair Porta asked whether the whole-body concentration trumps the water column standard. Dr. Siders answered that he is correct.

Vice-chair Porta then asked how NDEP would determine if a water meets the standard it did not do such studies or look at the fish. He said that it would seem prudent for NDEP to take samples and potentially remove the water from the impaired list if selenium truly isn't affecting its fish and aquatic life. Mr. Comba replied that it's really the purview of permittees or entities on whether they can meet the new selenium number. NDEP will bring forth what resources it has and may have additional grant funding to help develop a site-specific number.

Vice-chair Porta commented that permittees might not necessarily be the cause of selenium in the wash. He asked why the onus would be on permittees. Dr. Siders replied that NDEP has funded multiple studies and is happy to work cooperatively. She said that NDEP doesn't typically calculate site-specific numbers for everyone. She said that while selenium is naturally occurring, humans mobilize it in the Las Vegas Valley by irrigating lawns and golf courses.

Dr. Siders said that NDEP will do everything in its power to help people succeed, whether that's by funding or reviewing submissions. She again pointed out that preliminary results are encouraging, which may eliminate the need for a study or to calculate a bioaccumulation factor. One might merely sample the fish and the water at the same time, generating new water column numbers that may be considerably higher.

Vice-chair Porta said that the new science behind the selenium standard is a great asset from an impaired water standpoint. Dr. Siders replied that NDEP has considerable flexibility in prioritizing how to respond to impaired waters. In this case, it's clear that looking at an alternative study would be the way to go, providing an opportunity to delist waters that would otherwise remain listed when based on water chemistry alone.

Chair Gans commented that NDEP could almost force the issue back on permittees based on the petition at hand. Mr. Comba replied that the vision is a mesh of collaboration between permittees and NDEP.

Dr. Siders also said that NDEP's revised petition provides flexibility. NDEP requests a sampling and analysis plan and remains open to discussions about funding, as evident in previous studies funded by NDEP.

Commissioner Landreth asked how many water bodies out of the 697 in Nevada are currently listed as impaired. Dr. Siders responded that about 35 percent are impaired for some cause, not just for selenium. She said that the new standard would both result in listings for 14 additional water bodies and delisting for two.

Vice-chair Porta asked for clarification about the timing of the petition, especially about the need to move forward with the standards now instead of waiting until after studies have been conducted. He

asked how the EPA might react to Nevada's standards. Mr. Comba replied that NDEP believes the current proposal for a statewide standard is good for all Nevada waters, except for southern Nevada and the Las Vegas Valley. He said that adopting the standard as proposed makes sense as it applies to 90 percent of Nevada and is based on good science, but he acknowledged that water bodies in the Las Vegas Valley are unique.

Dr. Siders said that adopting the standard now gives a little push for actually getting the work done.

Vice-chair Porta asked for confirmation that waters impaired for selenium would stay on the list until additional data is gathered. Dr. Siders said that he is correct. She said that developing site-specific numbers would likely result in higher numbers, but such a result depends on completing the appropriate studies.

Chair Gans commented that the proposal before the commissioners effectively buys stakeholders three years' time. It will keep the current selenium standards in place in the Las Vegas Wash and provide a three-year window for completing the appropriate studies that use fish tissue data to potentially remove waters from the impaired water list.

Ms. Jennifer Carr, deputy administrator for NDEP, said that adopting the proposal now is better from a timing perspective, allowing for quick delisting as soon as the studies are complete. Waiting to adopt the standards until after studies are complete would delay delisting due to the rulemaking process.

Dr. Siders commented that while the standard and issue is complex, NDEP's proposal provides flexibility and promotes helpful collaboration between stakeholders and NDEP.

Chair Gans asked about the economics of the proposal. Dr. Siders said that the study done in the 2000s estimated that it would cost many millions of dollars to feed runoff through the water treatment plants to remove selenium. She said that the proposal gives stakeholders flexibility to avoid such a steep cost by providing a new opportunity to delist waters. NDEP does not expect a large impact for small businesses because selenium levels are low in discharges.

Vice-chair Porta then asked for NDEP's perspective on the other 14 waters that would be listed as a result of the proposal. Mr. Comba replied that NDEP's goal is to prioritize important water quality issues to address once NDEP's integrated report is finalized. He said that it would behoove NDEP to dedicate resources to work with the Nevada Department of Wildlife (NDOW) to sample fish for selenium. Funding, however, is always an issue.

Vice-chair Porta commented that most states are driven by litigation on impaired waters. Dr. Siders suggested that the ability to sample fish for selenium depends on funding but is an option if it's a priority for citizens concerned about its effect on fish.

Mr. Comba added that Nevada's universities are a good resource. He said that Dr. Pollard employed UNLV graduate students to complete the Wetlands Park project. Dr. Siders also added that the project was funded by the county because the Clark County Wetlands Park was part of an environmental impact statement. She said that Dr. Pollard found the fish unaffected, surprisingly, which supports the idea that the national bioaccumulation factor provided by the EPA will not apply.

Vice-chair Porta asked if NDEP or NDOW has received any reported issues regarding selenium toxicity. Mr. Comba replied that he has not heard of any such reports.

Chair Gans asked what NDEP added to section 1 of the petition. Dr. Siders said that NDEP is creating a separate regulation for selenium as part of NAC Chapter 445A. Section 1 would be specific to the four-part selenium criterion to protect aquatic life. Mr. Comba added that the first subsection of Section 1 contains additional language that provides an interim period for developing site-specific numbers for the

two reaches of the Las Vegas Wash. In the meantime, the existing standards would apply until a hard date of December 20, 2022. If December 2022 is approaching and a study is 90 percent complete, NDEP will come back before the SEC and adjust the date to provide more time to finish the last 10 percent.

Chair Gans asked if any other waters are cited besides the Las Vegas Wash. Mr. Comba said that is correct.

Vice-chair Porta asked why NDEP does not extend the three-year period to the other 14 water bodies that will be impacted. Dr. Siders replied that NDEP did not receive comments about those water bodies. Mr. Comba clarified that the petition allows any permittee to develop site-specific numbers but only allows the Las Vegas Wash to retain the old standards for the three-year period.

Dr. Siders added that she predicts the impact to be negligible. NDEP's water quality assessments are based on sufficient but limited data, and water bodies are removed from and added to the impaired waters list every time NDEP does its assessment. She said that NDEP feels the language in the petition provides sufficient flexibility, allowing stakeholders to complete studies as needed.

Speaking on future scenarios, Ms. Carr said the best course of action may be to assess resources and work with NDOW to evaluate whether Nevada may delist waters for selenium. She said a site-specific standard would only be needed if egg ovary or fish tissue data didn't comply with the new standards, something that applies to the Humboldt, the Walker, and any other water body.

Ms. Carr said that, in this case, there were significant concerns by parties in Las Vegas about a number of scientific and legal issues. As a result, those parties are currently motivated to develop a site-specific standard. The Pollard report indicates that NDEP may not need to develop different numbers for the Las Vegas Wash despite original indications. She said that a standard based on fish tissue is new, quite different from simply collecting water samples.

Vice-chair Porta asked if NDEP planned to develop a fish sampling program as more standards based on fish tissue become common. Ms. Carr explained that NDEP's next biennial budget is being prepared, but she said that it is too soon to tell if sampling will be incorporated into it.

Vice-chair Porta commented that fish sampling — rather than the previous gold standard of water column sampling — will be beneficial in evaluating whether fish are actually being harmed.

Commissioner Wasley commented that the potential for bioaccumulation is based on the number of atrophic levels in the system and the longevity of organisms in the water body. On the one hand, Lake Mead and the Colorado River System have more trophic levels and long-living fish species, creating a greater opportunity for accumulation. On the other hand, many waters in Nevada host short-lived species and have less dynamic or complicated trophic systems, decreasing the opportunity for accumulation.

Chair Gans then gave a brief summary of the specifics of the petition, and Dr. Siders affirmed his understanding, though she said the Legislative Council Bureau may shuffle parts of the petition around for organizational purposes.

Reading from section 2 of the petition, Vice-chair Porta asked for clarification on the language "the standards for selenium are exceeded." Dr. Siders said that fish samples would be used to see if the standards are exceeded, which trumps the other standards.

Mr. John Tenner with the Clark County Regional Flood Control District thanked NDEP for working with his district to try to solve the problem. He said that his district had had many amiable and productive discussions with NDEP over the last six months, and he said he especially appreciates NDEP's flexibility with the three-year timeframe and willingness to extend the deadline if needed. Mr. Tenner then said

that his district plans on working closely with NDEP to make sure it meets NDEP's needs.

Mr. Larry Bazel, also with the Clark County Regional Flood Control District, thanked NDEP for being responsive to the district's concerns.

Mr. Bazel made a few general comments about the issues involved in the petition. Selenium comes from surfacing groundwater, and the washes are dry and without fish in the upper valley. The lower wash, however, receives surfacing groundwater. He said that no one has taken a serious look at how lawn watering raises the water table and increases the outflow of surfacing groundwater. He stressed that the effect is not created by permitted discharges.

Mr. Bazel then pointed to two areas of concern — the Lower Las Vegas Wash and the tributaries. The Lower Las Vegas Wash is roughly the last 10 miles of the Las Vegas Wash, including the Wetlands Park. Those areas have flow with high quality wastewater, which dilutes the groundwater containing selenium. Based on the current standard of 5, the Lower Las Vegas Wash is not currently listed as impaired, but it may become listed once the proposed standard of 3.9 goes into effect. The three-year buffer, he suggested, prevents the Lower Las Vegas Wash from being listed in the meantime, preventing unnecessary complications.

Mr. Bazel said that small tweaks may enable the Lower Las Vegas Wash to remain in compliance. The EPA allows for a number of recalculation procedures, and the district is committed to such efforts. He said that the district is following Dr. Siders' advice to budget for an ecotoxicologist in the next fiscal year, enabling work to begin in June 2021. He cautioned that things always take longer than expected.

Mr. Bazel said that while the district doesn't always agree with NDEP, NDEP is always responsive. He said that the district expects to work closely with NDEP over the next three years to do what is necessary to keep the wash in compliance with the proposed selenium standards.

Regarding the tributaries, Mr. Bazel said that selenium concentrations are too high for a site-specific adjustment. He said that the district is interested in some other kind of regulatory exclusion to address the exceedances.

Mr. Bazel said the concept of the Tributary Rule is that some waters don't have designated water quality standards. In Las Vegas, the two lower wash segments have standards, and Mr. Bazel stated that the rest of the valley does not have or need water quality standards because it's made up of dry, concrete-lined channels. In the past, the EPA has said that the dry channels around Las Vegas are waters of the United States. According to the Tributary Rule, those dry channels are classified for fishing and swimming and everything else Lake Mead is classified for since its standards extend up the watershed. Mr. Bazel argued that such a standard doesn't make sense.

Mr. Bazel said that the tributaries in the Las Vegas Valley matter now because of the listing for selenium. Theoretically, he said, NDEP should prepare a total maximum daily load that explains how the tributaries will come into compliance with these standards, but there is no reasonable way of doing that. The goal, then, is to find a way to get the tributaries delisted.

Mr. Bazel noted that most of the concrete-lined channels near Las Vegas have few, if any, fish and have perennial flow from surfacing groundwater with high selenium concentrations. He said he supports talking with the EPA to find a way around the standards that passes legal muster and protects the environment as best as possible. He suggested using photographs of the concrete channels to help the EPA understand that they aren't real waterways, even if they are technically considered such.

Mr. Bazel then responded to comments that were made during the meeting. First, he pointed out that southern Nevada entities are still collecting data, which indicates that the Lower Las Vegas Wash is

dominated by nonnative, aquarium catfish that have been released into the water. He said that new issues will have to be worked out if a tweak can't be found.

Mr. Bazel then made a few comments that the EPA ought to approve NDEP's criteria to avoid implying that all issues must be resolved before moving forward with new standards or changes. Mr. Bazel said he is hopeful that the EPA will agree with NDEP's proposal because there is no time limit on implementing new standards.

Mr. Bazel said that while it's theoretically NDEP's obligation to create standards, NDEP does not always have the resources. He said that southern Nevada entities are searching for simple ways of tweaking the standard for the Lower Las Vegas Wash — not to do things that have never been done before that may be expensive or ultimately rejected by the EPA.

Mr. Bazel concluded by saying that southern Nevada entities are willing to work with NDEP to solve problems as it has done in the past. In the case of the tributaries, he argued, it will involve legal, regulatory, and practical work.

The third speaker was Mr. Dan Fisher from the Clark County Water Reclamation District, who stressed the importance of the three-year period to conduct studies. He asked that the SEC add a caveat to the petition preventing later rulemaking and approval processes from interfering with that exception. Ms. Carr replied that the EPA lacks authority to amend state law. It may comment and suggest that NDEP remove the exception, but it cannot amend it itself.

Vice-chair Porta then asked whether the EPA has authority to adopt its own regulations for Nevada. Ms. Carr said that was likely correct, but pointed out that that too would have to go through the Federal Register, which is also a public process.

Chair Gans asked the Las Vegas stakeholders whether they wanted to amend the petition in some way. Mr. Bazel replied that the district supports the petition as is.

Commissioner Wasley thanked NDEP for working with NDOW — which supports the petition — saying that it was a good opportunity to coordinate across state agencies.

Chair Gans also thanked the Las Vegas stakeholders for contributing to the process.

Motion: Commissioner Wilson moved to approve and adopt the permanent regulatory petition, R043-19 as proposed. Commissioner Wasley seconded the motion, and it passed unanimously.

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6) **Administrator's briefing to the commission** (Discussion)

Mr. Greg Lovato, administrator of the Nevada Division of Environmental Protection (NDEP), summarized recent greenhouse gas emission reduction policies established by Governor Steve Sisolak and by Senate Bill (SB) 254, especially what they mean for NDEP.

The bulk of the work for NDEP falls to experts in the Bureau of Air Quality Planning, who have published Nevada's greenhouse gas inventory every four years since 2008, most recently in 2016. In March 2019, Governor Sisolak joined the U.S. Climate Alliance, a coalition composed of governors from 24 states that have committed to implementing policies that advance the goals of the 2015 Paris Climate Agreement.

The primary goal of the Paris agreement is to keep the global average temperature below a 2 degrees Celsius increase from pre-industrial levels, with a goal to limit the increase to below 1.5 degrees Celsius. After the Trump administration announced its intent in early 2017 to withdraw from the Paris agreement, states began to form the U.S. Climate Alliance. By joining the alliance, governors from these

states, including Governor Sisolak, have made a public commitment to pursue proportional greenhouse gas emission reduction consistent with the previous U.S. commitment to the Paris agreement. This equates to reductions between 26 and 28 percent below 2005 emission levels in the US.

To date, NDEP has begun participating in work groups with other climate alliance states to understand best practices for conducting emission inventories and projections. The second step this year was the passage and approval of SB 254 in June. SB 254 increases the frequency of the state greenhouse gas report from every four years to annually. The law also requires that the report include a statement of policies, including regulations that could achieve a 28 percent reduction from statewide 2005 emission levels by 2025 and a 40 percent reduction by 2030. The report will include a quantification of reductions needed in each of the six greenhouse gas emission sectors to achieve these goals. NDEP has subdivided these into seven sectors, including electricity production, transportation, industry, commercial and residential, agriculture, land use and forestry, and waste emissions from land uses such as landfills.

NDEP's primary role is to conduct the emissions inventory and quantify emission projections. The Nevada Department of Conservation and Natural Resources and the Governor's Office of Energy, supported by NDEP, are leading the effort to identify policies, along with the Nevada Public Utilities Commission, the Nevada Department of Transportation, and the Nevada Department of Motor Vehicles. The first report is due in December 31, 2019.

On November 22, Governor Sisolak signed Executive Order 2019-22, which augments the efforts of SB 254 by requiring that a state climate strategy be delivered to the governor by December 1, 2020. In addition to the statement of policies required by SB 254, the state climate strategy will include specific policy and budget recommendations to reduce greenhouse gas emissions, mitigate effects of climate change, and further Nevada's resilience to climate change. The executive order also outlines policy areas related to carbon emission reduction, including market-based mechanisms, transportation, electrification and demand management, building code energy efficiency, and approaches to enhance climate resiliency through conservation, restoration, and management of forests, rangelands, and water resources.

Because such policies may have a significant budgetary and economic impact — areas in which NDEP has limited expertise and experience as a pollution control agency with scientific and engineering expertise — NDEP will continue to support these efforts by serving as the primary source for quantifying and projecting emissions in Nevada. NDEP is also actively pursuing foundation grant funding to help provide resources for additional policy analysis and coordination.

Mr. Lovato said that as the reports and policies are developed, regulations may be brought before the SEC that relate to greenhouse gas reduction as a result of the actions taken by the State of Nevada. The first report — scheduled for release on December 31, 2019 — will identify policies rather than include recommendations and decisions, providing a framework of policies that might help Nevada achieve its goals.

Mr. Lovato said that NDEP's greenhouse gas inventory employs a combination of data sources that are collected by the U.S. Energy Information Administration, the U.S. Department of Agriculture, and others, along with Nevada-specific sources related to the energy sector. It also uses estimates on population and growth. Most of the data is run through the U.S. Environmental Protection Agency's State Inventory Tool. NDEP adjusts data from these sources using information specific to Nevada, especially for the electrical generation sector because of Nevada's unique renewable portfolio standard.

Mr. Lovato then said that understanding how each of Nevada's emission sectors contributes will help policymakers understand what type of policies may be most effective in reducing greenhouse gases. For example, understanding which portions of the transportation sector contribute most to greenhouse gas

emissions will help Nevada understand where to make investments.

Vice-chair Porta asked if NDEP has seen a reduction or halt of data collection from the federal government. Mr. Lovato replied that NDEP has not seen a reduction. The data sources are for many other purposes beyond greenhouse gas emissions, and NDEP extrapolates from those data sources using established methodologies to calculate carbon emissions.

Dr. Dragoni said that NDEP has not seen any slowdown in the amount of data that federal agencies record. Emission calculation methodologies reapply data on a federal level to each state or region.

Vice-chair Porta said he wanted to make sure NDEP feels it has a database upon which to form the report's policies and decisions. Mr. Lovato replied that NDEP has deep experience in air quality planning, including three current employees that have helped write the report in the past. He said that NDEP is exerting tremendous effort in interpreting the data and making sure it's appropriate for Nevada.

Mr. Lovato then said that there is strong support among the states who are a part of the U.S. Climate Alliance, so Nevada isn't the only state moving forward with emission reductions. As a result, Nevada has resources to analyze best practices and to see works and doesn't work. NDEP is coordinating and reaching out as part of completing this task.

Chair Gans asked why only half of the states have signed on to greenhouse gas efforts. Mr. Lovato said that it is primarily related to the politics of individual states. NDEP wants to join other state agencies to analyze and provide options in a nonpolitical setting.

7) Public comments

There were no public comments.

8) Adjournment

Chair Gans thanked everyone for their participation and adjourned the meeting at 11:46 a.m.

ATTACHMENTS

ATTACHMENT 1: Western States Gypsum NOAV 2676, 2678, 2710

ATTACHMENT 2: PowerPoint—Regulatory Petition R043-19

ATTACHMENT 3: Map for R043-19

ATTACHMENT 1:

Western States Gypsum NOAV
2676, 2678, 2710

AGENDA ITEM #4: Air Penalty Presentation

Western States Gypsum

Western States Gypsum (WSG) operates a gypsum and limestone mine northwest of Mound House, Nevada. The facility operates under Class II Air Quality Operating Permit No. AP1499-0504.03 (Operating Permit) issued by the Nevada Division of Environmental Protection (NDEP) on August 13, 2012.

NDEP is recommending to the State Environmental Commission that penalties be assessed for Notices of Alleged Violation (NOAV) Nos. 2710, 2676, and 2678 in the amounts of $5,560.00, $10,200.00, and $1,500.00 respectively. The total recommended penalty for the three NOAVs is **$17,260.00**.

Background information about the violations for each NOAV, and a brief description of the basis for each penalty is presented below. The violations presented in this document represent WSG's first air quality violations within the last sixty months.

Recommended Penalty No. 1 - $5,560.00 for NOAV No. 2710

WSG conducted source compliance testing, for particulate emissions (PM/PM_{10}), for System 33 – Plant B Vibration Fluid Bed Dryer B-10 (S2.005) on May 10, 2017. S2.005 is subject to federal requirements under the New Source Performance Standards (NSPS) for Calciners and Dryers[1], which limits PM/PM_{10} emissions to 0.057 grams per dry standard cubic meter (g/dscm). The source compliance testing showed that S2.005 was emitting PM/PM_{10} at a rate of 0.079 g/dscm which is 139% of the NSPS limit.

On September 10, 2019, NDEP held an enforcement conference with WSG to discuss the failed source test and to determine if issuance of NOAV No. 2710 was warranted. WSG did not provide evidence demonstrating that the emission limits had not been exceeded, so NDEP determined that issuance of NOAV No. 2710 was warranted. No appeals were filed for NOAV No. 2710.

NDEP staff calculated the recommended penalty using the base penalty of $4,000.00 from the penalty matrix for one event of a failed source test for an NSPS limit with an adjustment factor to the base penalty of 1.39 to account for the extent of deviation. The recommended penalty for NOAV No. 2710 is **$5,560.00**.

Recommended Penalty No. 2 - $10,200.00 for NOAV No. 2676

NDEP conducted an inspection of WSG on October 30, 2018. NDEP staff observed that the facility was operating seventeen emission units without controlling emissions as required by the Operating Permit. The permit-required controls listed in Table 1 were found to damaged, turned off, or otherwise ineffective. Reference photos of some of the issues that were observed have been included on pages five and six of this document.

[1] Subpart UUU of Title 40 of the Code of Federal Regulations part 60 – Standards of Performance for Calciners and Dryers in Mineral Industries

Table 1 – Unmaintained Emissions Controls

System	Emission Unit	Required Control	System	Emission Unit	Required Control
4	PF1.006	Water sprays	50	PF1.060	Water sprays
11	PF1.014	Water sprays	51	PF1.061	Water sprays
12	PF1.015	Water sprays	51	PF1.062	Water sprays
13	PF1.016	Water sprays	51	PF1.063	Water sprays
18	PF1.024	Water sprays	52	PF1.064	Water sprays
19	PF1.025	Water sprays	52	PF1.065	Water sprays
49	PF1.057	Water sprays	53	PF1.066	Water sprays
50	PF1.058	Water sprays	53	PF1.067	Water sprays
50	PF1.059	Water sprays			

On January 31, 2019, NDEP held an enforcement conference with WSG to determine if issuance of NOAV No. 2676 was warranted. The enforcement conference provided an opportunity for WSG to provide evidence to contest the alleged violations. During the conference, NDEP reminded WSG that an effective water spray must create a fine spray of water droplets over the areas where particulate emissions are released. No evidence was provided by WSG that the violations did not occur. NDEP determined that issuance of NOAV No. 2676 was warranted. No appeals were filed for NOAV No. 2676.

NDEP staff used the penalty worksheet to calculate the recommended penalty using the base penalty of $600.00 from the penalty matrix for one event of failure to maintain emission control devices for each seventeen emission units. The recommended penalty for NOAV 2676 is **$10,200.00**.

Recommended Penalty No. 3 - $1,500.00 for NOAV No. 2678

During the inspection of WSG that was conducted on October 30, 2018, NDEP staff performed an EPA Method 9 (Method 9) visible emissions observation to determine the opacity for the secondary crushing circuit screen (system 17 – PF1.023). Readings were taken every fifteen seconds for six minutes, the twenty-four readings were then averaged as required by Method 9. The readings are presented in Table 2 and the field observation form has been included in Appendix A of this document. The average opacity during the Method 9 was determined to be 22.5% which exceeds the permitted opacity of 7%.

Table 2 - Method 9 Opacity Readings

Minute	Seconds			
	0	15	30	45
1	20%	15%	20%	25%
2	25%	20%	30%	25%
3	25%	20%	25%	20%
4	30%	30%	30%	20%
5	20%	20%	20%	25%
6	15%	20%	20%	20%
	Six Minute Average:			**22.5%**

The enforcement conference held on January 31, 2019, provided an opportunity for NDEP and WSG to discuss the Method 9 observations, the alleged opacity violation and to determine if issuance of NOAV No. 2678 was warranted. WSG did not provide evidence that the violation did not occur and NDEP determined that issuance of NOAV 2678 was warranted. No appeals were filed for NOAV No. 2678.

NDEP staff calculated penalties using the base penalty of $1,000.00 from the Penalty Worksheet for one instance of exceeding the permitted opacity limit by a relatively low amount in accordance with the guidelines on page three of the Penalty Worksheet. The recommended penalty for NOAV 2678 is **$1,500.00.**

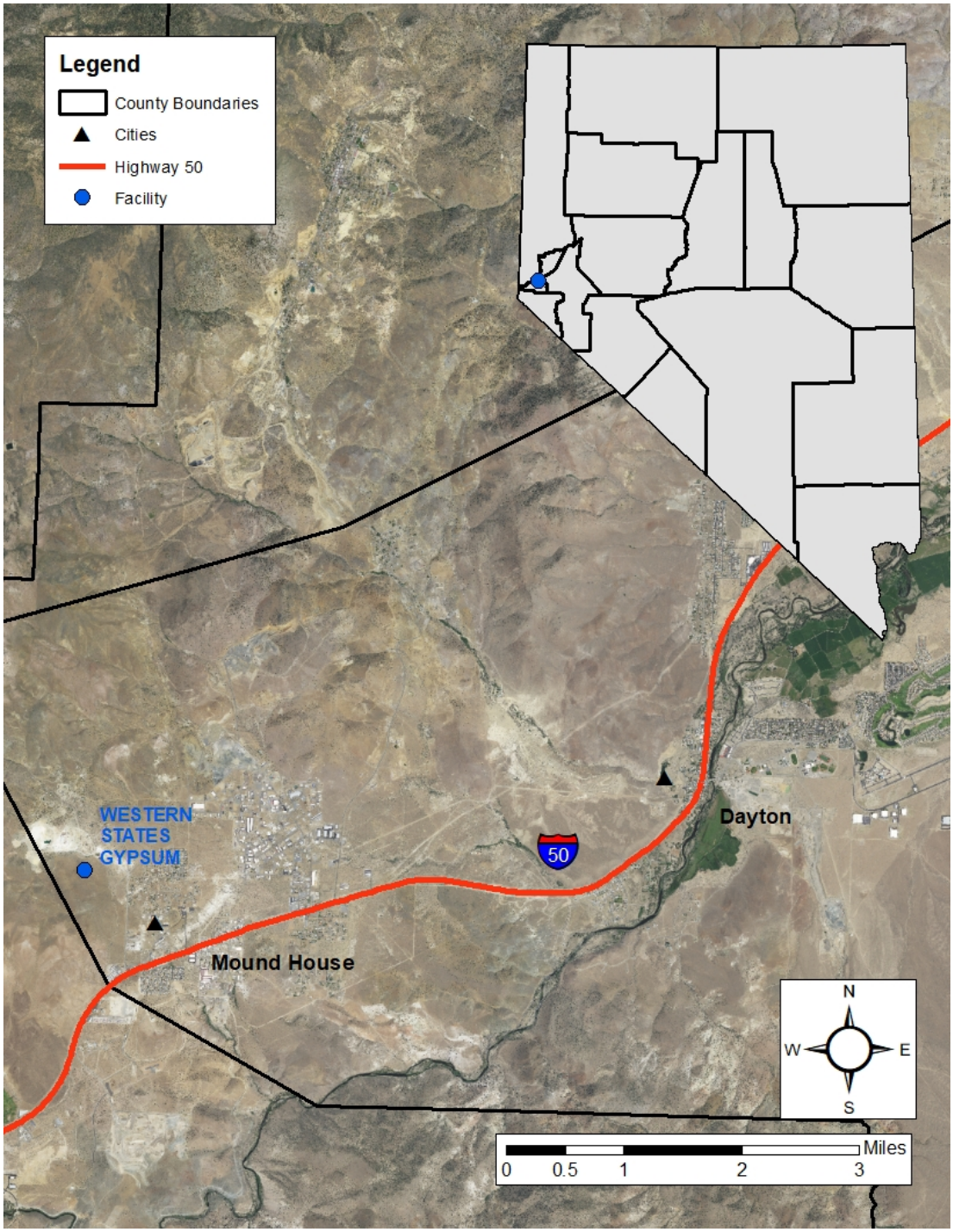
AGENDA ITEM #4 Continued: Facility Location

Western States Gypsum

Physical Address: 145 Linehan Road, Moundhouse, Lyon County, Nevada 89706

Coordinates: North 4,345.000 KM, East 268.070 KM – UTM Zone 11 (NAD 83)

Figure 1 – Map Showing the Location of WSG and the Surrounding Areas



AGENDA ITEM #4 Continued: Photos for Reference

Photo 1 - Water Supply Line for Waters Sprays Capped Off

Photo 2- Water Sprays Not Operating

Photo 3 - Valve Closed for Water Supply Line for Water Sprays

Photo 4 – Spray has not Been Formed Over the Area Where Particulates are Emitted From

Appendix A

EPA
VISIBLE EMISSION OBSERVATION FORM 1

Form Number						Page	Of
Continued on VEO Form Number							

Method Used (Circle One): (Method 9) 203A 203B Other: _____

Company Name	Art Wilson		
Facility Name			
Street Address			
City	Dayton	State NJ	Zip

Process	Screening	Unit #	Operating Mode
Control Equipment			Operating Mode

Describe Emission Point: secondary crushing circuit - 1" screen

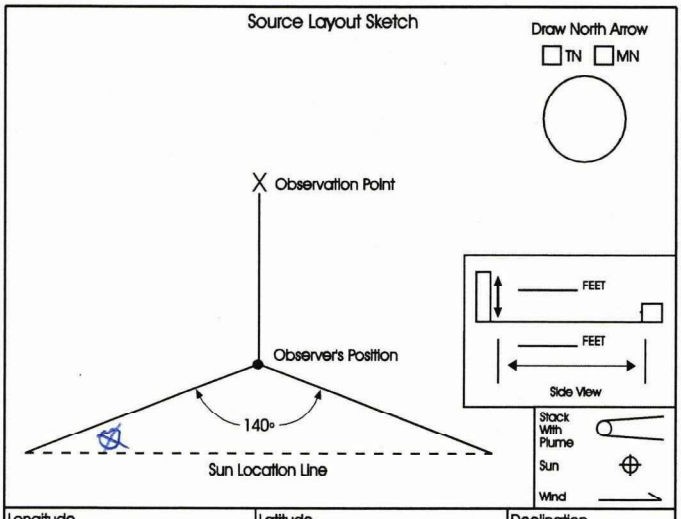
Height of Emiss. Pt. Start	End	Height of Emiss. Pt. Rel. to Observer Start	End 20 ft
Distance to Emiss. Pt. Start 50 ft	End	Direction to Emiss. Pt. (Degrees) Start	End

Vertical Angle to Obs. Pt. Start 30°	End	Direction to Obs. Pt. (Degrees) Start	End
Distance and Direction to Observation Point from Emission Point Start		End	

Describe Emissions Start: white gypsum dust	End		
Emission Color Start: white	End	Water Droplet Plume: Attached ☐ Detached ☐ None ☐	

Describe Plume Background Start: ~~clear~~ brown mountain/power pole	End		
Background Color Start	End	Sky Conditions Start: clear	End
Wind Speed Start: calm	End	Wind Direction Start: ~~calm~~	End
Ambient Temp. Start: 50 °F	End	Wet Bulb Temp.	RH Percent

Source Layout Sketch



Longitude	Latitude	Declination

Additional Information

Observation Date	10/30/18	Time Zone		Start Time	443	End Time	449

Min \ Sec	0	15	30	45	Comments
1	20	15	20	25	
2	25	20	30	25	
3	25	20	25	20	
4	30	30	30	20	
5	20	20	20	25	
6	15	20	20	20	
7					
8			ave = 22.5		
9					
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27					
28					
29					
30					

Observer's Name (Print)	Ryan Clark	
Observer's Signature	Ryan Clark	Date 10/30/18
Organization		
Certified By		Date

VEOF1.1

STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY PLANNING
901 SOUTH STEWART ST., SUITE 4001
CARSON CITY, NEVADA 89701-5249

NOTICE OF ALLEGED AIR QUALITY VIOLATION NO. 2676

Person(s) to Whom Served: Scott Lusty, General Manager

Company Name: Art Wilson Co., D.B.A. Western States Gypsum

Address: P.O. Box 20160, Carson City, NV 89721

Permit Number: AP1499-0504.03 **FIN:** A0739

Site of Alleged Violation: 145 Linehan Road, Moundhouse, NV 89706

Date of Observations: 10/30/2018 **Time**: 4:15 pm - 5:30 pm

It is alleged that the following regulation was violated by the person named in this notice:

Nevada Administrative Code (NAC) 445B.275 Violations: Acts constituting; notice.
1. Failure to comply with any requirement of NAC 445B.001 to 445B.3689, inclusive, any applicable requirement or any condition of an operating permit constitutes a violation. As required by NRS 445B.450, the Director shall issue a written notice of an alleged violation to any owner or operator for any violation, including, but not limited to:

(c) Failure to construct or operate a stationary source in accordance with any condition of an operating permit;

It is alleged that the following act or practice constitutes the violation:
Failure to operate and maintain controls.

Evidence:
Art Wilson Company d.b.a. Western States Gypsum (WSG) operates a gypsum and limestone mine under the requirements of Class II Air Quality Operating Permit AP1499-0504.03 (Operating Permit) issued by the Nevada Division of Environmental Protection (NDEP) on August 13, 2012.

On October 30, 2018, NDEP observed that the facility was operating without the permit-required water sprays in an operational condition for seventeen emission units. Table 1 provides further detail of the seventeen uncontrolled emission units.

Table 1: Emission Units Observed Operating Without Required Air Pollution Controls

System	Emission Unit	Description	Required Control Device
4	PF1.006	Three deck screen A-2	Water sprays
11	PF1.014	Two Deck Screen A-4	Water sprays
12	PF1.015	Return conveyor C-8 discharge to transfer conveyor C-6	Water sprays
13	PF1.016	Stacker Conveyor C-9 discharges to the fines output stockpile	Water sprays
18	PF1.024	Conveyor C-11 discharges into a vertical shaft impact crusher	Water sprays
19	PF1.025	Vertical shaft impact crusher B3	Water sprays
49	PF1.057	Loader transfer to vibrating grizzly feeder	Water sprays
50	PF1.058	Vibrating grizzly feeder and discharge to impact crusher P-22	Water sprays
50	PF1.059	30" x 80' conveyor P-26 and discharge to impact crusher P-22	Water sprays

NOAV NO. 2676

Evidence Continued:

50	PF1.060	Impact crusher P-22 and discharge to crusher discharge conveyor P-1	Water sprays
51	PF1.061	Crusher discharge conveyor P1 and discharge to 3-deck screen P-23	Water sprays
51	PF1.062	Conveyor P-31 and discharge to 3-deck screen P-23	Water sprays
51	PF1.063	3-deck screen P-23 and discharge to 30" x 80' conveyor P-25, 30" x 60' conveyor P-24, 30" x 50' conveyor P-32, or 30" x 80' conveyor P-26	Water sprays
52	PF1.064	30" x 50' conveyor P-32 and discharge to VSI crusher P-30	Water sprays
52	PF1.065	VSI crusher P-30 and discharge to 30" x 60' conveyor P-31	Water sprays
53	PF1.066	30" x 60' conveyor P-24 and discharge to stockpile	Water sprays
53	PF1.067	30" x 80' conveyor P-25 and discharge to stockpile	Water sprays

On November 19, 2018, NDEP staff met with WSG at the facility site to address some questions in regards to a permitting action that was being worked on, and to verify that WSG had returned to compliance. At that time, WSG was operating in compliance with the air pollution control requirements of the Operating Permit.

On January 31, 2019, NDEP held an enforcement conference with WSG to determine whether issuance of Notices of Alleged Air Quality Violation (NOAV) and Order Nos. 2676 and 2678 were or were not warranted. During the enforcement conference WSG did not provide evidence that NOAV 2676 did not happen.

On November 10, 2019, NDEP provided WSG a second opportunity to address any remaining questions or concerns about the alleged violations.

Based on the information provided by WSG, NDEP has determined that formal issuance of NOAV No. 2676 is warranted.

In accordance with **NAC 445B.281 Violations: Classification; administrative fines**, failure to comply with the permitted opacity limits constitutes a major violation. This NOAV and Order in addition to NOAV Nos. 2678 and 2710, sent under the same cover, represents WSG's first air quality violation within the last 60 months.

ORDER NO. 2676

ORDER

Under the authority of **Nevada Revised Statute (NRS) 445B.100 to 445B.640,** inclusive, the person named in this notice is ordered:

_____ **To pay the following administrative fine in accordance with 445B.281.1**: _____

_____ **To take corrective action**: _____

_____ **To conduct a Supplemental Environmental Project specified by the BAPC**

_____ **This notice is a warning.**

__X__ **To pay the penalty amount assessed by the State Environmental Commission.**

Signature _____

Issued by: Danilo Dragoni, PhD
Chief
Bureau of Air Quality Planning

Phone: 775-687-9340 **Date**: September 19, 2019

DD/ajt

Certified Mail No.: 9171 9690 0935 0218 7436 35

This order becomes final unless appealed within ten (10) days after receipt of this notice. The person named in this order may appeal this notice by submitting a written request for a hearing to the Chairman of the Environmental Commission, 901 South Stewart Street, Suite 4001, Carson City, Nevada 89701-5249.

STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY PLANNING
901 SOUTH STEWART ST., SUITE 4001
CARSON CITY, NEVADA 89701-5249

NOTICE OF ALLEGED AIR QUALITY VIOLATION NO. 2678

Person(s) to Whom Served: Scott Lusty, General Manager

Company Name: Art Wilson Co., D.B.A. Western States Gypsum

Address: P.O. Box 20160, Carson City, NV 89721

Permit Number: AP1499-0504.03 **FIN:** A0739

Site of Alleged Violation: 145 Linehan Road, Moundhouse, NV 89706

Date of Observations: 10/30/2018 **Time**: 4:15 pm - 5:30 pm

It is alleged that the following regulation was violated by the person named in this notice:

Nevada Administrative Code (NAC) 445B.275 Violations: Acts constituting; notice.
1. Failure to comply with any requirement of NAC 445B.001 to 445B.3689, inclusive, any applicable requirement or any condition of an operating permit constitutes a violation. As required by NRS 445B.450, the Director shall issue a written notice of an alleged violation to any owner or operator for any violation, including, but not limited to:

(c) Failure to construct or operate a stationary source in accordance with any condition of an operating permit;

It is alleged that the following act or practice constitutes the violation:
Failure to comply with the permitted opacity limits.

Evidence:
Art Wilson Company d.b.a. Western States Gypsum (WSG) operates a gypsum and limestone mine under the requirements of Class II Air Quality Operating Permit AP1499-0504.03 issued by the Nevada Division of Environmental Protection (NDEP) on August 13, 2012.

On October 30, 2018, NDEP staff conducted an EPA Reference Method 9 visible emission test on the screen for the secondary crushing circuit (System 17 - PF1.023) for six minutes. NDEP staff observed an opacity coming from the screen of 22.5% which is 321% of the permitted opacity limit of 7%.

Table 1: Method 9 Opacity Observations

Minute	Seconds			
	0	15	30	45
1	20%	15%	20%	25%
2	25%	20%	30%	25%
3	25%	20%	25%	20%
4	30%	30%	30%	20%
5	20%	20%	20%	25%
6	15%	20%	20%	20%
	Six Minute Average:			**22.5%**

NOAV NO. 2678

On November 19, 2018, NDEP staff met with WSG at the facility site to address some questions in regards to a permitting action that was being worked on, and to verify that WSG had returned to compliance. At that time, WSG was operating in compliance with the opacity limits for System 17 - PF1.023.

On January 31, 2019, NDEP held an enforcement conference with WSG to determine whether issuance of Notices of Alleged Air Quality Violation (NOAV) and Order Nos. 2676 and 2678 were or were not warranted. During the enforcement conference WSG did not provide evidence that NOAV 2678 did not happen. Based on the information provided by WSG, NDEP has determined that formal issuance of NOAV No. 2678 is warranted.

On November 10, 2019, NDEP provided WSG a second opportunity to address any remaining questions or concerns about the alleged violations.

In accordance with **NAC 445B.281 Violations: Classification; administrative fines**, failure to comply with the permitted opacity limits constitutes a major violation. This NOAV in addition to NOAV Nos. 2676 and 2710, sent under the same cover, represents WSG's first air quality violation within the last 60 months.

ORDER NO. 2678

ORDER

Under the authority of **Nevada Revised Statute (NRS) 445B.100 to 445B.640,** inclusive, the person named in this notice is ordered:

_____ **To pay the following administrative fine in accordance with 445B.281.1**: _____

_____ **To take corrective action**: _____

_____ **To conduct a Supplemental Environmental Project specified by the BAPC**

_____ **This notice is a warning.**

__X__ **To pay the penalty amount assessed by the State Environmental Commission.**

Signature _____

Issued by: Danilo Dragoni, PhD
Chief
Bureau of Air Quality Planning

Phone: 775-687-9340 **Date**: September 19, 2019

DD/ajt

Certified Mail No.: 9171 9690 0935 0218 7436 35

This order becomes final unless appealed within ten (10) days after receipt of this notice. The person named in this order may appeal this notice by submitting a written request for a hearing to the Chairman of the Environmental Commission, 901 South Stewart Street, Suite 4001, Carson City, Nevada 89701-5249.

STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY PLANNING
901 SOUTH STEWART ST., SUITE 4001
CARSON CITY, NEVADA 89701-5249

NOTICE OF ALLEGED AIR QUALITY VIOLATION NO. 2710

Person(s) to Whom Served: Scott Lusty, General Manager
Company Name: Art Wilson Co., D.B.A. Western States Gypsum
Address: P.O. Box 20160, Carson City, NV 89721
Permit Number: AP1499-0504.03 **FIN:** A0739

Site of Alleged Violation: 145 Linehan Road, Moundhouse, NV 89706
Date of Observation: 5/10/2017 **Arrival**: n/a **Departure**: N/A

It is alleged that the following regulations were violated by the person named in this notice:

Nevada Administrative Code (NAC) 445B.275 Violations: Acts constituting; notice.
1. Failure to comply with any requirement of NAC 445B.001 to 445B.390, inclusive, any applicable requirement or any condition of an operating permit constitutes a violation. As required by NRS 445B.450, the Director shall issue a written notice of an alleged violation to any owner or operator for any violation, including, but not limited to:

(c) Failure to construct or operate a stationary source in accordance with any condition of an operating permit;

It is alleged that the following act or practice constitutes the violation:
Exceeded permitted emission limit during source testing.

Evidence:
Art Wilson Company d.b.a. Western States Gypsum (WSG) operates an aggregate plant facility under the requirements of Class II AQOP AP1499-0504.03 issued August 13, 2012.

On May 10, 2017, WSG conducted permit required source testing on System 33 - Plant B Vibrating Fluid Bed Dryer B-10 (S2.005). Test results indicate that System 33 had an average PM/PM_{10} emission rate of 7.12 lb/hr, which is 126% of the permitted emission rate of 5.67 lb/hr. System 33 is also subject the New Source Performance Standards – Subpart UUU – Standards of Performance for Calciners and Dryers in Mineral Industries (40 CFR Part 60.730 through 60.737) which limits particulate emissions to 0.057 g/dscm. The test results indicate that System 33 had an average PM/PM_{10} emission rate of 0.079 g/dscm which is 139% of the Subpart UUU limit.

On September 10, 2019, Nevada Division of Environmental Protection held an enforcement conference with WSG. During the enforcement conference WSG was given the opportunity to provide evidence that the alleged violation had not occurred or provide evidence of mitigating factors.

Based on the information provided by WSG, NDEP has determined that formal issuance of NOAV No. 2710 is warranted.

In accordance with **NAC 445B.281 Violations: Classification; administrative fines**, failure to comply with permitted emission limits constitutes a major violation. This NOAV and Order in addition to NOAV Nos. 2676 and 2678, sent under the same cover, represents WSG's first air quality violation within the last 60 months.

ORDER NO. 2710

ORDER

Under the authority of **Nevada Revised Statute (NRS) 445B.100 to 445B.640,** inclusive, the person named in this notice is ordered:

_____ **To pay the following administrative fine in accordance with 445B.281.3**: **$** _____

_____ **To take corrective action**: _____

_____ **To appear for an enforcement conference at**: 901 S. Stewart St. Suite 4001, Carson City, Nevada, 89701
Date: _____ **Time**: _____

_____ **To conduct a Supplemental Environmental Project specified by the BAPC**

_____ **This notice is a warning.**

__X__ **To pay the penalty amount assessed by the State Environmental Commission.**

Signature _____
Issued by: Danilo Dragoni, PhD
Chief
Bureau of Air Pollution Control

Phone: 775-687-9340 **Date**: September 19, 2019

DD/ajt

Certified Mail No.: 9171 9690 0935 0218 7436 35

This order becomes final unless appealed within ten (10) days after receipt of this notice. The person named in this order may appeal this notice by submitting a written request for a hearing to the Chairman of the Environmental Commission, 901 South Stewart Street, Suite 4001, Carson City, Nevada 89701-5249.

ATTACHMENT 2:

PowerPoint Presentation on R043-19

PROPOSED REGULATION OF THE

STATE ENVIRONMENTAL COMMISSION

LCB File No. R043-19

August 28, 2019

EXPLANATION – Matter in ***italics*** is new; matter in brackets **[**~~omitted material~~**]** is material to be omitted.
Matter in ***italics*** is new to LCB Draft Regulation File No. R043-19.

AUTHORITY:§§1 and 2, NRS 445A.425 and 445A.520.

A REGULATION relating to water quality standards; revising the water quality standards for selenium for the support of aquatic life; and providing other matters properly relating thereto.

Legislative Counsel's Digest:

Existing law authorizes the State Environmental Commission to adopt regulations to establish standards of water quality. (NRS 445A.425) Under existing law, the Commission must base its water quality standards on water quality criteria which numerically or descriptively define the conditions necessary to maintain the designated beneficial use or uses of the water. Further, the water quality standards must reflect water quality criteria which define the conditions necessary to support, protect and allow the propagation of fish, shellfish and other wildlife if these objectives are reasonably attainable. (NRS 445A.520)

Section 1 of this regulation revises the water quality standards for selenium for the support of aquatic life. **Section 1**, with limited exception, provides the 30-day average for flowing waters is not to exceed 3.9 micrograms per liter more than once every 3 years and the 30-day average for still waters is not to exceed 1.9 micrograms per liter more than once every 3 years. The criterion value for intermittent exposure of selenium in water is a calculated value which, with limited exception, may not be exceeded more than once every 3 years.

Section 1 also provides that samples of fish tissue, if available, shall take precedent over water column data. The standards for selenium in fish tissue as provided in this regulation are based on the type of sample used. **Section 1** provides, with limited exception, selenium levels in: (a) fish egg or ovary tissue must not exceed 19 milligrams per kilogram of dry weight; (b) whole body tissue of fish must not exceed 9.5 milligrams per kilogram of dry weight; and (c) muscle tissue of fish must not exceed 13.1 milligrams per kilogram of dry weight.

Section 2 of this regulation makes a conforming change.

Section 1. Chapter 445A of NAC is hereby amended by adding thereto a new section to read as follows:

1. The standards for selenium prescribed in this section for the support of aquatic life are applicable to the waters specified in NAC 445A.123 to 445A.2234, inclusive. The criterion values for selenium are calculated to reflect the lack of sturgeon or related fish species in the waters of this State and maintain the conditions necessary to support, protect and allow the propagation of fish species found in the waters of this State. See references a and b.

The standards for selenium for the support of aquatic life in the Las Vegas Wash, NAC 445A.2156 and NAC 445A.2158, are 20 ug/L (1 hour average) and 5 ug/L (96 hour average) until a site-specific value is adopted or December 31, 2022, whichever occurs first.

2. If the standards for selenium are exceeded at a site, the Commission will review and may adjust the standards for the site if:

(a) The standards are not economically controllable; or

(b) Site-specific values for fish and water have been derived through a technically defensible study (see references a and b) and results have been approved by the Division.

3. If data from fish tissue are available, such data shall take precedence over data obtained from a water sample. If data from fish egg or ovary tissue are available, such data shall take precedence over data from whole body tissue or fish muscle tissue.

4. Any sampling of fish tissue must be performed in accordance with EPA protocols. See references a and b.

5. Any person or entity wishing to develop site-specific values for fish tissue and water shall submit a proposed sampling and analysis plan to the Division. The plan must be approved by the

Division before the study to derive site-specific values for fish tissue and water is conducted.

6. Except as provided in subsection 2, the criterion values for selenium in fish tissue are instantaneous values that may not be exceeded. The criterion values for selenium in fish tissue are:

Type of Tissue Analyzed	*Criterion Value (mg/kg dry weight)*
Fish Egg or Ovary Tissue	*19*
Fish Whole Body Tissue	*9.5*
Fish Muscle Tissue	*13.1*

7. Except as provided in subsection 2, the criterion values for dissolved selenium in the water column for aquatic life is:

Exposure Duration and Category of Water	*Criterion Value (µg/L)*
30-day average, lentic water	*1.9*
30-day average, lotic water	*3.9*
Intermittent, lentic water	*$1.9 - C_{bkgd}(1 - f_{int})/f_{int}$*
Intermittent, lotic water	*$3.9 - C_{bkgd}(1 - f_{int})/f_{int}$*

➥ *The 30-day average and intermittent concentration limits for selenium may be exceeded only once every 3 years. See reference a.*

8. Nothing in this section authorizes a person to take fish without complying with applicable provisions of law related to fishing in this State.

9. As used in this section:

(a) "C_{bkgd}" means the average daily ambient concentration integrated over 30 days.

(b) "f_{int}" means the fraction of any 30-day period during which there are elevated concentrations of selenium.

(c) "Fish muscle tissue" means tissue collected from a skinless and boneless fillet.

(d) "Lentic water" means a standing body of water such as a lake or reservoir.

(e) "Lotic water" means a flowing or moving body of water such as a stream or river.

References:

a. U.S. Environmental Protection Agency, Pub. No. EPA 822-R-16-006, Aquatic Life Ambient Water Quality Criterion for Selenium - Freshwater, June 2016.

b. U.S. Environmental Protection Agency, Pub. No. EPA 820-F-16-007, Technical Support for Fish Tissue Monitoring for Implementation of EPA's 2016 Selenium Criterion (Draft), September 2016.

Sec. 2. NAC 445A.1236 is hereby amended to read as follows:

445A.1236 1. Except for waters which have site-specific standards for toxic materials or as otherwise provided in this section, the standards for toxic materials prescribed in subsection 2 are applicable to the waters specified in NAC 445A.123 to 445A.2234, inclusive ~~[.]~~ ***, and section 1 of this regulation.*** The following criteria apply to this section:

(a) If the standards are exceeded at a site and are not economically controllable, the Commission will review and may adjust the standards for the site.

(b) If a standard does not exist for each designated beneficial use, a person who plans to discharge waste must demonstrate that no adverse effect will occur to a designated beneficial use. If the discharge of a substance will lower the quality of the water, a person who plans to discharge waste must meet the requirements of NRS 445A.565.

(c) If a criterion is less than the detection limit of a method that is acceptable to the Division, laboratory results which show that the substance was not detected shall be deemed to show compliance with the standard unless other information indicates that the substance may be present.

2. The standards for toxic materials are:

Chemical	Municipal or Domestic Supply (µg/L)	Aquatic Life[1,2] (µg/L)	Irrigation (µg/L)	Watering of Livestock (µg/L)
INORGANIC CHEMICALS[3]				
Antimony	146[a]	-	-	-
Arsenic	50[b]	-	100[c]	200[d]
1-hour average	-	340[f,(4)]	-	-
96-hour average	-	150[f,(4)]	-	-
Barium	2,000[b]	-	-	-
Beryllium	0[a]	-	100[c]	-
Boron	-	-	750[a]	5,000[d]
Cadmium	5[b]	-	10[d]	50[d]
1-hour average	-	$(1.136672-\{\ln(\text{hardness})(0.041838)\})*e^{(1.0166\{\ln(\text{hardness})\}-3.924)}$ f,(4)	-	-
96-hour average	-	$(1.101672-\{\ln(\text{hardness})(0.041838)\})*e^{(0.7409\{\ln(\text{hardness})\}-4.719)}$ f,(4)	-	-
Chromium (total)	100[b]	-	100[d]	1,000[d]
Chromium (VI)	-	-	-	-
1-hour average	-	16[f,(4)]	-	-
96-hour average	-	11[f,(4)]	-	-
Chromium (III)	-	-	-	-
1-hour average	-	$(0.316)*e^{(0.8190\{\ln(\text{hardness})\}+3.7256)}$ f,(4)	-	-
96-hour average	-	$(0.860)*e^{(0.8190\{\ln(\text{hardness})\}+0.6848)}$ f,(4)	-	-
Copper	-	-	200[d]	500[d]
1-hour average	-	$(0.960)*e^{(0.9422\{\ln(\text{hardness})\}-1.700)}$ f,(4)	-	-
96-hour average	-	$(0.960)*e^{(0.8545\{\ln(\text{hardness})\}-1.702)}$ f,(4)	-	-
Cyanide	200[a]	-	-	-
1-hour average	-	22[f,(5)]	-	-

Chemical	Municipal or Domestic Supply (µg/L)	Aquatic Life[1,2] (µg/L)	Irrigation (µg/L)	Watering of Livestock (µg/L)
96-hour average	-	5.2[f,(5)]	-	-
Fluoride	-	-	1,000[d]	2,000[d]
Iron	-	-	5,000[d]	-
96-hour average	-	1,000[f]	-	-
Lead	50[a,b]	-	5,000[d]	100[d]
1-hour average	-	(1.46203-{ln(hardness)(0.145712)})* e (1.273{ln(hardness)} - 1.460) f,(4)	-	-
96-hour average	-	(1.46203-{ln(hardness)(0.145712)})* e (1.273{ln(hardness)} - 4.705) f,(4)	-	-
Manganese	-	-	200[d]	-
Mercury	2[b]	-	-	10[d]
1-hour average	-	1.4[f,(4)]	-	-
96-hour average	-	0.77[f,(4)]	-	-
Molybdenum	-	-	-	-
1-hour average	-	6,160[g]	-	-
96-hour average	-	1,650[g]	-	-
Nickel	13.4[a]	-	200[d]	-
1-hour average	-	(0.998) * e (0.8460{ln(hardness)} + 2.255) f,(4)	-	-
96-hour average	-	(0.997) * e (0.8460{ln(hardness)} + 0.0584) f,(4)	-	-
Selenium	50[b]	~~[ ]~~ ***See section 1 of this regulation***	20[d]	50[d]
~~[1-hour average]~~	-	~~[20a]~~	-	-
~~[96-hour average]~~	-	~~[5.0f]~~	-	-
Silver	-	-	-	-
1-hour average	-	(0.85) * e (1.72{ln(hardness)} - 6.59) f,(4)	-	-
Sulfide (undissociated hydrogen sulfide)	-	-	-	-
96-hour average	-	2.0[f]	-	-
Thallium	13[a]	-	-	-
Zinc	-	-	2,000[d]	25,000[d]
1-hour average	-	(0.978) * e (0.8473{ln(hardness)} + 0.884) f,(4)	-	-
96-hour average	-	(0.986) * e (0.8473{ln(hardness)} + 0.884) f,(4)	-	-
ORGANIC CHEMICALS				
Acrolein	320[a]	-	-	-
1-hour average	-	3[f]	-	-
96-hour average	-	3[f]	-	-
Aldrin	0[a]	-	-	-
1-hour average	-	3.0[f]	-	-
alpha-Endosulfan	-	-	-	-
1-hour average	-	0.22[f]	-	-
96-hour average	-	0.056[f]	-	-
beta-Endosulfan	-	-	-	-
1-hour average	-	0.22[f]	-	-
96-hour average	-	0.056[f]	-	-
Benzene	5[b]	-	-	-
Bis (2-chloroisopropyl) ether	34.7[a]	-	-	-
Chlordane	0[a]	-	-	-
1-hour average	-	2.4[f]	-	-
96-hour average	-	0.0043[f]	-	-
Chloroethylene (vinyl chloride)	2[b]	-	-	-
Chlorpyrifos	-	-	-	-
1-hour average	-	0.083[f]	-	-

Chemical	Municipal or Domestic Supply (µg/L)	Aquatic Life[1,2] (µg/L)	Irrigation (µg/L)	Watering of Livestock (µg/L)
96-hour average	-	0.041[f]	-	-
2,4-D	100[a,b]	-	-	-
DDT & metabolites	0[a]	-	-	-
4,4'-DDT	-	-	-	-
1-hour average	-	1.1[f,(6)]	-	-
96-hour average	-	0.001[f,(6)]	-	-
Demeton	-	-	-	-
96-hour average	-	0.1[f]	-	-
Diazinon	-	-	-	-
1-hour average	-	0.17[f]	-	-
96-hour average	-	0.17[f]	-	-
Dibutyl phthalate	34,000[a]	-	-	-
m-dichlorobenzene	400[a]	-	-	-
o-dichlorobenzene	400[a]	-	-	-
p-dichlorobenzene	75[b]	-	-	-
1,2-dichloroethane	5[b]	-	-	-
1,1-dichloroethylene	7[b]	-	-	-
2,4-dichlorophenol	3,090[a]	-	-	-
Dichloropropenes	87[a]	-	-	-
Dieldrin	0[a]	-	-	-
1-hour average	-	0.24[f]	-	-
96-hour average	-	0.056[f]	-	-
Di-2-ethylhexyl phthalate	15,000[a]	-	-	-
Diethyl phthalate	350,000[a]	-	-	-
Dimethyl phthalate	313,000[a]	-	-	-
4,6-dinitro-2-methylphenol	13.4[a]	-	-	-
Dinitrophenols	70[a]	-	-	-
Endosulfan	75[a]	-	-	-
Endrin	0.2[b]	-	-	-
1-hour average	-	0.086[f]	-	-
96-hour average	-	0.036[f]	-	-
Ethylbenzene	1,400[a]	-	-	-
Fluoranthene (polynuclear aromatic hydrocarbon)	42[a]	-	-	-
Guthion	-	-	-	-
96-hour average	-	0.01[f]	-	-
Heptachlor	-	-	-	-
1-hour average	-	0.52[f]	-	-
96-hour average	-	0.0038[f]	-	-
Heptacholor Epoxide	-	-	-	-
1-hour average	-	0.52[f]	-	-
96-hour average	-	0.0038[f]	-	-
Hexachlorocyclopentadiene	206[a]	-	-	-
Isophorone	5,200[a]	-	-	-
Lindane	4[b]	-	-	-
1-hour average	-	0.95[f]	-	-
Malathion	-	-	-	-
96-hour average	-	0.1[f]	-	-
Methoxychlor	100[a,b]	-	-	-
96-hour average	-	0.03[f]	-	-
Mirex	0[a]	-	-	-
96-hour average	-	0.001[f]	-	-
Monochlorobenzene	488[a]	-	-	-
Nitrobenzene	19,800[a]	-	-	-

Chemical	Municipal or Domestic Supply (µg/L)	Aquatic Life[1,2] (µg/L)	Irrigation (µg/L)	Watering of Livestock (µg/L)
Nonylphenol	-	-	-	-
1-hour average	-	28[f]	-	-
96-hour average	-	6.6[f]	-	-
Parathion	-	-	-	-
1-hour average	-	0.065[a]	-	-
96-hour average	-	0.013[a]	-	-
Pentachlorophenol	1,010[a]	-	-	-
1-hour average	-	$e^{1.005(pH) - 4.869}$[f]	-	-
96-hour average	-	$e^{1.005(pH) - 5.134}$[f]	-	-
Phenol	3,500[a]	-	-	-
Polychlorinated biphenyls (PCBs)	0[a]	-	-	-
96-hour average	-	0.014[f]	-	-
Silvex (2,4,5-TP)	10[a,b]	-	-	-
Tetrachloromethane (carbon tetrachloride)	5[b]	-	-	-
Toluene	14,300[a]	-	-	-
Toxaphene	5[b]	-	-	-
1-hour average	-	0.73[a]	-	-
96-hour average	-	0.0002[a]	-	-
Tributyltin (TBT)	-	-	-	-
1-hour average	-	0.46[f]	-	-
96-hour average	-	0.072[f]	-	-
1,1,1-trichloroethane (TCA)	200[b]	-	-	-
Trichloroethylene (TCE)	5[b]	-	-	-
Trihalomethanes (total)[7]	100[b]	-	-	-

Footnotes:

(1) One-hour average and 96-hour average concentration limits may be exceeded only once every 3 years. See reference a.

(2) "Hardness" is expressed as mg/L $CaCO_3$; and "e" refers to the base of the natural logarithm whose value is 2.718.

(3) The standards for metals are expressed as total recoverable, unless otherwise noted.

(4) This standard applies to the dissolved fraction.

(5) This standard is expressed as free cyanide.

(6) This standard applies to DDT and its metabolites (i.e., the total concentration of DDT and its metabolites should not exceed this value).

(7) The standard for trihalomethanes (TTHMs) is the sum of the concentration of bromodicholoromethane, dibromocholoromethane, tribromomethane (bromoform) and trichloromethane (chloroform). See reference b.

References:

a. U.S. Environmental Protection Agency, Pub. No. EPA 440/5-86-001, *Quality Criteria for Water* (Gold Book) (1986).

b. Federal Maximum Contaminant Level (MCL), 40 C.F.R. §§ 141.11, 141.61 and 141.62 (1992).

c. U.S. Environmental Protection Agency, Pub. No. EPA 440/9-76-023, *Quality Criteria for Water* (Red Book) (1976).

d. National Academy of Sciences, *Water Quality Criteria* (Blue Book) (1972).

e. Not used to avoid confusion with “e” as a natural logarithm.

f. U.S. Environmental Protection Agency, *National Recommended Water Quality Criteria*, May 2009.

g. Nevada Division of Environmental Protection, *Aquatic Life Water Quality Criteria for Molybdenum,* Tetra Tech, Inc., (June 2008).

ATTACHMENT 3:

Map for R043-19

Where are the waterbody segments in the LV Wash to which the added green-line sentence applies?