



March 5, 2024

Ron Edwards
Big Sky Water & Sewer District 363
PO Box 160670
Big Sky, MT 59716

RE: Allegations of leakage at Big Sky holding ponds and over-irrigation at Meadow Village Golf Course, Big Sky, MT [CVID #24124]

Dear Mr. Edwards:

On May 10, 2022, the Enforcement Program (ENF) of the Montana Department of Environmental Quality (DEQ) received a complaint alleging Meadow Village Golf Course (Golf Course) in Big Sky, Montana, was being over-irrigated, and the Big Sky Water and Sewer District (District) storage ponds (Ponds) were leaking. This complaint was similar to a previous complaint filed on September 17, 2021[CVID #23540], which was closed on April 22, 2022, as the evidence did not support a conclusion that the Ponds were leaking beyond the design standard as documented in Circular DEQ-2.

The new complaint submitted to DEQ stated:

"Hello, Cottonwood Environmental Law Center, Gallatin Wildlife Association, and Montana Rivers provide the following information in support of a complaint regarding over irrigation of the Meadow Village Golf Course in Big Sky, Montana and the leaking sewage lagoons. 1. Mark Cunnane, an expert for Big Sky Water and Sewer District, admitted that treated sewage is reaching the West Fork of the Gallatin River via over irrigation. Cunnane also admitted the holding ponds are leaking. 2. DEQ employee Terry Campbell stated under oath there is no de minimis exception for leaking holding ponds. 3. Tracer dye was placed in the sewage lagoons and was then used to irrigate the Meadow Village Golf Course. The dye was then found in the Chapel Springs Drain on the golf course. It was also found in the underdrain pipe. 4. Ph. D hydrologist Chris Allen published a "Technical Memorandum" that made the following "Summary": MUNICIPAL WASTEWATER DISCHARGE SUMMARY: The application of municipal wastewater represents one of the largest anthropogenic source of nitrogen, estimated to be approximately 12,000 lbs N per year irrigating three golf courses: Meadow View, Yellowstone Club and Spanish Peaks. Application rates to the golf courses are designed to ensure zero discharge of nutrients to the groundwater, however, research on golf courses used for wastewater disposal indicated that an average of 30% of the applied nutrients from the applied irrigation water can enter groundwater (Devitt, 2008). Applying this assumption to the Upper Gallatin Nutrient Assessment Preliminary Loading Estimate, 1,900 lb N/yr in the West Fork could be attributable to leaching of nutrients from irrigation water."

The complainant provided a transcript of a deposition from Mark Cunnane that occurred on September 23, 2021; a copy of the "Upper Gallatin Nutrient Assessment & Reduction Plan" Technical Memorandum dated October 17, 2020; a copy of a laboratory report sheet, "Fluorometric Analysis Results" from Crawford Hydrology Lab; and a "Partial transcript of Trial with a Jury Testimony of Terry Campbell" in support of their complaint. Prior to filing this complaint, on April 28, 2022, the complainant had previously provided a copy of "Estimation of Leakage from Sewage Ponds Based on Annual Water Budgets" authored by Tom Aley, April 21, 2022, which indicated it replaced previous drafts. In a letter dated May 27, 2022, the complainant provided DEQ with a document that described a proposed plan, including instructions on how to implement that plan, to address the volume of treated wastewater that the complainant believed could be used to irrigate the Meadow Village Golf Course. DEQ also reviewed "Water Balance Study and Data Review for the Sewage Treatment and Disposal System of the Big Sky County Water and Sewer District No. 363, Big Sky, Montana" and "Summary of Leakage Investigations of Big Sky Water and Sewer District No. 363 Holding Pond", both authored by Trever Osorno, Ozark Underground Laboratory, as well as a report regarding irrigation on the Meadow Village Golf Course authored by Barry L. Dutton and dated January 30, 2024.

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DEQ has reviewed the documents and testimony cited by the complainant and has re-reviewed the expert reports developed in the federal litigation. Additionally, as you know, DEQ has conducted additional follow-up with the District over the last several months. The District responded with additional data, including data regarding spray irrigation, nutrient application information, and the golf course lysimeters. The District also notified DEQ that it had identified and repaired a leak found in the Chapel Drain, that the visible parts of the pond liners were inspected and repaired as necessary in late 2023, and that the upgrades to the plant are scheduled to go on-line this month.

DEQ's investigation of the allegations regarding excessive pond leakage found that there is no credible evidence that the Ponds are leaking in excess of state design standards. The reports authored by Aley and Osorno fail to provide credible evidence of leakage because those reports are based on generalized assumptions without supporting data and use outdated, inaccurate averages for precipitation and evaporation calculations rather than actual measured precipitation or evaporation data. Even if those averages and assumptions are assumed to be correct for the sake of argument, the averages of the data across the years reported by Mr. Osorno show that any discrepancy is de minimis and within the relevant design standards under which the Ponds were approved.

DEQ's investigation of the allegations regarding over-irrigation found that the evidence does not support the allegation that the golf course is being over-irrigated. As you know, the Nutrient Management Plan allows 108 pounds of nitrogen per acre per year to be supplied through irrigation with the reclaimed wastewater. The updated data provided by the District for the last five years show nitrogen application to be within the allowed limit. DEQ also reviewed the suggestions by the complainant for calculating irrigation rates proposed by the complainant and Mr. Dutton but concluded that these analyses failed to correctly calculate agronomic rates as required by DEQ-2.

DEQ's investigation found that the evidence did not support the allegation the Ponds were leaking in excess of the design standard; or that the Golf Course is being over irrigated; therefore, I am closing this complaint.

If you have any questions, please contact me at the phone number or email address below.

Sincerely,



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Environmental Enforcement Specialist
Enforcement Program
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