pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

**SOUTHCENTRAL REGIONAL OFFICE**
**CLEAN WATER PROGRAM**

# WATER QUALITY MANAGEMENT PERMIT INTERNAL REVIEW AND RECOMMENDATIONS

| | | | |
|---|---|---|---|
| Application Type | **Renewal** | Application No. | **0605408** |
| Facility Type | **Sewage** | APS ID | **553697** |
| WQM Type | **Land Application** | Authorization ID | **1448078** |

## Applicant and Facility Information

| | | | |
|---|---|---|---|
| Applicant Name | **Bear Creek Management Co.** | Facility Name | **Bear Creek Ski & Recreation Area** |
| Applicant Address | 101 Doe Mountain Lane | Facility Address | 101 Doe Mountain Lane |
| | Macungie, PA 18062-2052 | | Macungie, PA 18062-2052 |
| Applicant Contact | Erin Visco Chapman | Facility Contact | Jordan Force |
| Applicant Phone | (610) 641-7170 | Facility Phone | (610) 682-7100 |
| Client ID | 159772 | Site ID | 544325 |
| SIC Code | 4952 | Municipality | Longswamp Township |
| SIC Description | Trans. & Utilities - Sewerage Systems | County | Berks |
| PA Bulletin Date | May 25, 2024 | | |

Purpose of Application: This is an application for WQM renewal.

## Internal Review and Recommendations

The application submitted by the applicant requests to renew a Water Quality Management (WQM) Part II permit for the Bear Creek Ski and Recreation Area located at 101 Doe Mountain Lane, Macungie, PA 18062 in Berks County, municipality of Longswamp Township. The application for the WQM Part II permit was received by DEP Southcentral Regional Office (SCRO) on July 21, 2023.

The application package included the design engineer's report and a Comprehensive Groundwater Evaluation 2018-2023.

The applicant disclosed the Act 14 requirement to the Berks County Planning Commission and the Longswamp Township Board of Supervisors and the notice was received by the parties on March 14, 2023. A planning approval letter was not necessary as the facility is neither new or expanding.

The purpose of this Fact Sheet is to present the material basis of information used for reviewing the water quality management land application. The water quality management permit was effective January 4, 2019 and expired on January 31, 2024. The application was submitted as a request to renew the water quality management permit.

**Description of the Facility**

Bear Creek Mountain Resort is a four-season destination retreat. The resort has amenities that enable biking, skiing, and hiking.

| Approve | Return | Deny | Signatures | Date |
|---|---|---|---|---|
| X | | | Nicholas Hong, P.E. / Environmental Engineer<br><br>Nick Hong (via electronic signature) | July 17, 2024 |
| X | | | Daniel W. Martin, P.E. / Environmental Engineer Manager<br><br>*Daniel W. Martin* | August 1, 2024 |
| X | | | Maria D. Bebenek, P.E. / Program Manager<br><br>*Maria D. Bebenek* | August 1, 2024 |

The Bear Creek Mountain Resort and Conference Center wastewater treatment plant consists of an on-site wastewater treatment plant and an on-site spray irrigation field. The facility has the ability to reuse treated effluent for snow making but has not done so during the current permit cycle. The purpose of the application is to renew the water quality permit so that the facility can continue to operate their wastewater treatment plant, drip irrigation, and option for snow-making from reclaimed water. No new facilities or process changes were being proposed. The application was not requesting any changes to the current permit.

Bear Creek Mountain Resort and Conference Center is located near Macungie in Berks County, PA. The WWTP and drip irrigation system is located within the Swabia Creek Watershed. The existing plant was constructed in November 2007. The design flow rate is 0.045 MGD.

The treatment lagoons and spray irrigation fields are located 3,000 feet west of the intersection of Doe Mountain Lane and State Road. Wastewater is treated in an on-site wastewater treatment plant. Treated effluent is stored in an on-site storage lagoon. The effluent is disposed via spray irrigation consisting of 3 spray zones with a total area of 7.57 acres. A summary of the total effluent dispersed via spray irrigation for years 2018 to 2022 is shown in Table 1.

Table 1
Total Spray Irrigation Effluent Volume (gallons)
Bear Creek Mountain Resort & Conference Center WWTP
Longswamp Township, Berks County, Pennsylvania

| | Effluent Total | | | | |
|---|---|---|---|---|---|
| Month | 2018 | 2019 | 2020 | 2021 | 2022 |
| January | 490,000 | 526,000 | 245,000 | 385,000 | 538,000 |
| February | 1,102,491 | 455,000 | 315,000 | 350,000 | 245,000 |
| March | 367,497 | 350,000 | 108,000 | 234,000 | 96,000 |
| April | 391,497 | 132,000 | 108,000 | 96,000 | 144,000 |
| May | 144,000 | 60,000 | 156,000 | 216,000 | 120,000 |
| June | 128,000 | 144,000 | 96,000 | 312,000 | 144,000 |
| July | 120,000 | 144,000 | 96,000 | 312,000 | 336,000 |
| August | 120,000 | 168,000 | 120,000 | 264,000 | 216,000 |
| September | 72,000 | 144,000 | 72,000 | 288,000 | 264,000 |
| October | 156,000 | 108,000 | 84,000 | 192,000 | 96,000 |
| November | 48,000 | 108,000 | 48,000 | 108,000 | 96,000 |
| December | 132,000 | 514,000 | 176,000 | 192,000 | 245,000 |
| **Total** | **3,271,485** | **2,853,000** | **1,624,000** | **2,949,000** | **2,540,000** |

The current permit limits allow effluent shall be sprayed evenly over the 3 zones totaling 7.57 acres at a rate not to exceed 1.19 inches/acre/week; or 35,000 gallons per day.

DEP estimates the spray irrigation loading rates for 2023 ranging from 0.13 ac-in/wk to 0.53 ac-in/wk. The loading did not exceed the current NPDES limits of 1.19 inches/acre/week. (Refer to Section on comments from Tom Sweeney).

The design engineer reports confirmed that no changes or upgrades were made or planned for the treatment system.

The most current 12-month DMR Data for the oufalls are summarized in the tables.

**DMR Data for Outfall 001 (from June 1, 2023 to May 31, 2024)**

| Parameter | MAY-24 | APR-24 | MAR-24 | FEB-24 | JAN-24 | DEC-23 | NOV-23 | OCT-23 | SEP-23 | AUG-23 | JUL-23 | JUN-23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flow (MGD) Prior to Irrigation <br/> Average Monthly | 0.01 | 0.009 | 0.009 | 0.018 | 0.012 | 0.009 | 0.009 | 0.011 | 0.013 | 0.013 | 0.017 | 0.014 |
| Flow (MGD) Prior to Irrigation <br/> Daily Maximum | 0.025 | 0.027 | 0.020 | 0.030 | 0.028 | 0.017 | 0.020 | 0.018 | 0.022 | 0.021 | 0.0321 | 0.021 |
| pH (S.U.) Prior to Irrigation <br/> Instantaneous Minimum | 6.83 | 6.79 | 6.69 | 6.5 | 6.05 | 7.01 | 7.08 | 6.90 | 7.05 | 6.71 | 6.62 | 6.74 |
| pH (S.U.) Prior to Irrigation <br/> Instantaneous Maximum | 7.27 | 7.26 | 7.3 | 7.31 | 7.2 | 7.45 | 7.56 | 7.56 | 7.72 | 7.12 | 7.21 | 7.10 |
| BOD5 (mg/L) Prior to Irrigation <br/> Average Monthly | < 2.1 | < 2.0 | 2.2 | 4.9 | < 5.8 | 6.0 | < 2.6 | < 2.1 | 3.0 | < 2.1 | < 2.0 | < 2.8 |
| TSS (mg/L) Prior to Irrigation <br/> Average Monthly | < 4.0 | < 4.0 | < 4.0 | 6.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.3 | < 4.0 |
| Total Dissolved Solids (mg/L) Prior to Irrigation <br/> Average Monthly | 583 | 632 | 631 | 650 | 717 | 676 | 640 | 594 | 526 | 556 | 546 | 611 |
| Fecal Coliform (No./100 ml) Prior to Irrigation <br/> Geometric Mean | < 3.0 | < 1.0 | < 2.0 | < 5 | < 10 | < 1.0 | < 1.0 | < 2.0 | < 1 | < 1 | < 2.0 | < 1 |
| UV Intensity (mW/cm$^2$) Prior to Irrigation <br/> Instantaneous Minimum | 0.416 | 0.321 | 0.205 | 0.688 | 0.941 | 0.163 | 0.131 | 0.074 | 0.024 | 0.055 | 0.02 | 0.021 |
| Total Nitrogen (mg/L) Prior to Irrigation <br/> Average Monthly | 23.8 | 33.2 | 18.9 | 32.6 | 34.5 | 26.6 | 24.2 | 22.4 | 10.29 | 14.83 | 28.1 | 36.2 |
| Ammonia (mg/L) Prior to Irrigation <br/> Average Monthly | < 0.1 | < 0.1 | < 0.1 | 18.5 | < 1.16 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.97 | < 0.1 |
| Nitrate (mg/L) Prior to Irrigation <br/> Average Monthly | 22.2 | 32 | 18.9 | 9.04 | 18.71 | 26.5 | 23.0 | 21.1 | 8.92 | < 14.8 | 25.4 | 35.6 |
| Nitrite (mg/L) Prior to Irrigation <br/> Average Monthly | < 0.1 | < 0.1 | < 0.1 | 0.69 | < 0.92 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.26 | < 0.1 |
| TKN (mg/L) Prior to Irrigation <br/> Average Monthly | 1.67 | 1.21 | < 1.4 | 22.87 | 2.22 | 1.11 | 1.2 | 1.26 | 1.38 | < 0.88 | 2.52 | < 0.87 |
| Total Phosphorus (mg/L) Prior to Irrigation <br/> Average Monthly | 8.04 | 8.04 | 8.93 | 7.97 | 6.74 | 6.0 | 7.56 | 7.21 | 6.92 | 9.06 | 8.83 | 7.5 |

**DMR Data for Outfall 003 (from June 1, 2023 to May 31, 2024)**

| Parameter | MAY-24 | APR-24 | MAR-24 | FEB-24 | JAN-24 | DEC-23 | NOV-23 | OCT-23 | SEP-23 | AUG-23 | JUL-23 | JUN-23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flow (MGD) Average Monthly | 0.024 | 0.024 | 0.024 | 0.027 | 0.03 | 0.024 | 0.024 | 0.024 | 0.024 | 0.024 | 0.024 | 0.024 |
| Flow (MGD) Daily Maximum | 0.024 | 0.024 | 0.024 | 0.035 | 0.035 | 0.024 | 0.024 | 0.024 | 0.024 | 0.024 | 0.024 | 0.024 |

**DMR Data for Outfall 101 (from June 1, 2023 to May 31, 2024)**

| Parameter | MAY-24 | APR-24 | MAR-24 | FEB-24 | JAN-24 | DEC-23 | NOV-23 | OCT-23 | SEP-23 | AUG-23 | JUL-23 | JUN-23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pH (S.U.) Instream Monitoring <br/> Average Monthly | 6.42 | 6.46 | 6.47 | 6.54 | 6.38 | 7.09 | 6.89 | 7.19 | 7.13 | 7.04 | 6.38 | 6.89 |
| BOD5 (mg/L) Instream Monitoring <br/> Average Monthly | 3.9 | < 2 | < 2.0 | < 2.0 | < 2 | < 2.0 | 2.2 | < 2.0 | < 2.0 | < 2.0 | < 2 | < 2 |
| Total Dissolved Solids (mg/L) Instream Monitoring <br/> Average Monthly | 146 | 120 | 128 | 172 | 140 | 188 | 189 | 176 | 245 | 197 | 167 | 174 |
| Ammonia (mg/L) Instream Monitoring <br/> Average Monthly | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Nitrate (mg/L) Instream Monitoring <br/> Average Monthly | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| Nitrite (mg/L) Instream Monitoring <br/> Average Monthly | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| TKN (mg/L) Instream Monitoring <br/> Average Monthly | < 0.7 | < 0.7 | < 0.7 | < 0.7 | < 0.7 | < 0.7 | < 0.7 | < 0.7 | < 0.7 | < 0.7 | < 0.7 | < 0.7 |
| Total Phosphorus (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | 0.14 | | | | | | < 0.1 |
| Total Aluminum (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.1 | | | | | | < 0.1 |
| Total Barium (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | 0.061 | | | | | | 0.048 |
| Total Beryllium (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.0004 | | | | | | < 0.0004 |
| Total Iron (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | 0.179 | | | | | | 0.122 |
| Total Zinc (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.01 | | | | | | < 0.01 |

**DMR Data for Outfall 102 (from June 1, 2023 to May 31, 2024)**

| Parameter | MAY-24 | APR-24 | MAR-24 | FEB-24 | JAN-24 | DEC-23 | NOV-23 | OCT-23 | SEP-23 | AUG-23 | JUL-23 | JUN-23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pH (S.U.) Instream Monitoring <br/> Average Monthly | 6.47 | 6.48 | 6.39 | 6.2 | 6.49 | 7.02 | 6.89 | 7.18 | 7.18 | 7.1 | 6.39 | 6.91 |
| BOD5 (mg/L) Instream Monitoring <br/> Average Monthly | < 2 | < 2.0 | < 2.0 | < 2.0 | < 2 | < 2.0 | 4.0 | < 2.0 | < 2 | < 2 | < 2 | < 2 |
| Total Dissolved Solids (mg/L) Instream Monitoring <br/> Average Monthly | 146 | 109 | 130 | 182 | 115 | 201 | 192 | 172 | 249 | 192 | 172 | 177 |
| Ammonia (mg/L) Instream Monitoring <br/> Average Monthly | < 0.1 | < 0.1 | < 0.1 | < 0.1 | 0.29 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Nitrate (mg/L) Instream Monitoring <br/> Average Monthly | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | 1 | < 1 | 1.45 |
| Nitrite (mg/L) Instream Monitoring <br/> Average Monthly | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| TKN (mg/L) Instream Monitoring <br/> Average Monthly | < 0.7 | < 0.7 | < 0.7 | < 0.7 | 0.73 | < 0.7 | < 0.7 | < 0.7 | < 0.7 | < 0.7 | < 0.7 | < 0.7 |
| Total Phosphorus (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.1 | | | | | | < 0.1 |
| Total Aluminum (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.1 | | | | | | < 0.1 |
| Total Barium (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | 0.06 | | | | | | 0.058 |
| Total Beryllium (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.004 | | | | | | < 0.0004 |
| Total Iron (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | 0.366 | | | | | | 0.361 |
| Total Zinc (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.01 | | | | | | < 0.01 |

**DMR Data for Outfall 104 (from June 1, 2023 to May 31, 2024)**

| Parameter | MAY-24 | APR-24 | MAR-24 | FEB-24 | JAN-24 | DEC-23 | NOV-23 | OCT-23 | SEP-23 | AUG-23 | JUL-23 | JUN-23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pH (S.U.) Instream Monitoring <br/> Semi-Annual Average | | | | | | 6.78 | | | | | | 6.87 |
| BOD5 (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 2.0 | | | | | | < 2 |
| Total Dissolved Solids (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | 195 | | | | | | 269 |
| Ammonia (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.1 | | | | | | < 0.1 |
| Nitrate (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 1 | | | | | | < 1.0 |
| Nitrite (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.1 | | | | | | < 0.1 |
| TKN (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.7 | | | | | | < 0.7 |
| Total Phosphorus (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | 0.14 | | | | | | < 0.1 |
| Total Aluminum (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.1 | | | | | | < 0.1 |
| Total Barium (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | 0.061 | | | | | | 0.069 |
| Total Beryllium (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.0004 | | | | | | < 0.0004 |
| Total Iron (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | 0.31 | | | | | | 0.208 |
| Total Zinc (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.01 | | | | | | < 0.010 |

DMR Data for Outfall 110 (from June 1, 2023 to May 31, 2024)

| Parameter | MAY-24 | APR-24 | MAR-24 | FEB-24 | JAN-24 | DEC-23 | NOV-23 | OCT-23 | SEP-23 | AUG-23 | JUL-23 | JUN-23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pH (S.U.) Instream Monitoring <br/> Semi-Annual Average | | | | | | 6.82 | | | | | | 6.85 |
| BOD5 (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 2.0 | | | | | | < 2.0 |
| Total Dissolved Solids (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | 94.0 | | | | | | 81 |
| Ammonia (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.1 | | | | | | < 0.1 |
| Nitrate (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 1 | | | | | | 1.23 |
| Nitrite (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.1 | | | | | | < 0.1 |
| TKN (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.7 | | | | | | 6.06 |
| Total Phosphorus (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.1 | | | | | | < 0.1 |
| Total Aluminum (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.1 | | | | | | < 0.1 |
| Total Barium (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | 0.069 | | | | | | 0.045 |
| Total Beryllium (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.0004 | | | | | | < 0.0004 |
| Total Iron (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | 0.122 | | | | | | < 0.1 |
| Total Zinc (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.01 | | | | | | < 0.01 |

**DMR Data for Outfall 111 (from June 1, 2023 to May 31, 2024)**

| Parameter | MAY-24 | APR-24 | MAR-24 | FEB-24 | JAN-24 | DEC-23 | NOV-23 | OCT-23 | SEP-23 | AUG-23 | JUL-23 | JUN-23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pH (S.U.) Instream Monitoring <br/> Semi-Annual Average | | | | | | 6.48 | | | | | | 6.70 |
| BOD5 (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 2.0 | | | | | | < 2.0 |
| Total Dissolved Solids (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | 93 | | | | | | 76.0 |
| Ammonia (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.1 | | | | | | < 0.1 |
| Nitrate (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 1.0 | | | | | | < 1 |
| Nitrite (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.1 | | | | | | < 0.1 |
| TKN (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.7 | | | | | | < 0.7 |
| Total Phosphorus (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | 0.11 | | | | | | < 0.1 |
| Total Aluminum (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | 0.332 | | | | | | < 0.1 |
| Total Barium (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | 0.048 | | | | | | 0.033 |
| Total Beryllium (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.0004 | | | | | | < 0.0004 |
| Total Iron (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | 0.492 | | | | | | 0.175 |
| Total Zinc (mg/L) Instream Monitoring <br/> Semi-Annual Average | | | | | | < 0.01 | | | | | | < 0.01 |

**DMR Data for Outfall 501 (from June 1, 2023 to May 31, 2024)**

| Parameter | MAY-24 | APR-24 | MAR-24 | FEB-24 | JAN-24 | DEC-23 | NOV-23 | OCT-23 | SEP-23 | AUG-23 | JUL-23 | JUN-23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pH (S.U.) Groundwater <br/> Average Quarterly | | | 4.84 | | | 5.45 | | | 5.15 | | | 5.57 |
| BOD5 (mg/L) Groundwater <br/> Average Quarterly | | | < 2 | | | < 2.0 | | | < 2.0 | | | < 2.0 |
| Total Dissolved Solids (mg/L) Groundwater <br/> Average Quarterly | | | 226 | | | 209 | | | 250 | | | 239 |
| Ammonia (mg/L) Groundwater <br/> Average Quarterly | | | < 0.1 | | | < 0.1 | | | < 0.1 | | | < 0.1 |
| Nitrate (mg/L) Groundwater <br/> Average Quarterly | | | 3.69 | | | 3.67 | | | 4.18 | | | 3.4 |
| Nitrite (mg/L) Groundwater <br/> Average Quarterly | | | < 0.1 | | | < 0.1 | | | < 0.1 | | | < 0.1 |
| TKN (mg/L) Groundwater <br/> Average Quarterly | | | < 0.7 | | | < 0.7 | | | < 0.7 | | | < 0.7 |
| Total Phosphorus (mg/L) Annual Average | | | | | | < 0.1 | | | | | | |
| Total Chlorides and Sulfates (mg/L) Groundwater <br/> Average Quarterly | | | 90.4 | | | 83.2 | | | 86.4 | | | 76.6 |

**DMR Data for Outfall 502 (from June 1, 2023 to May 31, 2024)**

| Parameter | MAY-24 | APR-24 | MAR-24 | FEB-24 | JAN-24 | DEC-23 | NOV-23 | OCT-23 | SEP-23 | AUG-23 | JUL-23 | JUN-23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pH (S.U.) Groundwater <br/> Average Quarterly | | | 4.77 | | | 5.14 | | | 4.74 | | | 5.28 |
| BOD5 (mg/L) Groundwater <br/> Average Quarterly | | | < 2 | | | < 2.0 | | | < 2.0 | | | < 2.0 |
| Total Dissolved Solids (mg/L) Groundwater <br/> Average Quarterly | | | 78 | | | 187 | | | 167 | | | 122 |
| Ammonia (mg/L) Groundwater <br/> Average Quarterly | | | < 0.1 | | | < 0.1 | | | < 0.1 | | | < 0.1 |
| Nitrate (mg/L) Groundwater <br/> Average Quarterly | | | 1.06 | | | 4.29 | | | 3.69 | | | 2.21 |
| Nitrite (mg/L) Groundwater <br/> Average Quarterly | | | < 0.1 | | | < 0.1 | | | < 0.1 | | | < 0.1 |
| TKN (mg/L) Groundwater <br/> Average Quarterly | | | < 0.7 | | | < 0.7 | | | < 0.7 | | | < 0.7 |
| Total Phosphorus (mg/L) Groundwater <br/> Annual Average | | | | | | < 0.1 | | | | | | |
| Total Chlorides and Sulfates (mg/L) Groundwater <br/> Average Quarterly | | | 34.9 | | | 84.6 | | | 67.3 | | | 52.7 |

**DMR Data for Outfall 503 (from June 1, 2023 to May 31, 2024)**

| Parameter | MAY-24 | APR-24 | MAR-24 | FEB-24 | JAN-24 | DEC-23 | NOV-23 | OCT-23 | SEP-23 | AUG-23 | JUL-23 | JUN-23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pH (S.U.) Groundwater <br/> Average Quarterly | | | 4.47 | | | 5.33 | | | 5.25 | | | 5.62 |
| BOD5 (mg/L) Groundwater <br/> Average Quarterly | | | < 2.0 | | | < 2.0 | | | < 2.0 | | | < 2.0 |
| Total Dissolved Solids (mg/L) Groundwater <br/> Average Quarterly | | | 47 | | | 50.0 | | | 43 | | | 43 |
| Ammonia (mg/L) Groundwater <br/> Average Quarterly | | | < 0.1 | | | < 0.1 | | | < 0.1 | | | < 0.1 |
| Nitrate (mg/L) Groundwater <br/> Average Quarterly | | | < 1 | | | < 1.0 | | | < 1 | | | < 1 |
| Nitrite (mg/L) Groundwater <br/> Average Quarterly | | | < 0.1 | | | < 0.1 | | | < 0.1 | | | < 0.1 |
| TKN (mg/L) Groundwater <br/> Average Quarterly | | | < 0.7 | | | < 0.7 | | | < 0.7 | | | < 0.7 |
| Total Phosphorus (mg/L) Groundwater <br/> Annual Average | | | | | | < 0.1 | | | | | | |
| Total Chlorides and Sulfates (mg/L) Groundwater <br/> Average Quarterly | | | < 11.95 | | | < 10.38 | | | < 11.28 | | | < 10 |

**DMR Data for Outfall 504 (from June 1, 2023 to May 31, 2024)**

| Parameter | MAY-24 | APR-24 | MAR-24 | FEB-24 | JAN-24 | DEC-23 | NOV-23 | OCT-23 | SEP-23 | AUG-23 | JUL-23 | JUN-23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pH (S.U.) Groundwater <br/> Average Quarterly | | | 5.72 | | | 6.47 | | | 6.15 | | | 6.45 |
| BOD5 (mg/L) Groundwater <br/> Average Quarterly | | | 3.9 | | | 5.5 | | | < 2.0 | | | 2.5 |
| Total Dissolved Solids (mg/L) Groundwater <br/> Average Quarterly | | | 400 | | | 368 | | | 350 | | | 388 |
| Ammonia (mg/L) Groundwater <br/> Average Quarterly | | | 0.21 | | | 0.33 | | | 0.23 | | | 0.24 |
| Nitrate (mg/L) Groundwater <br/> Average Quarterly | | | < 1 | | | < 1.0 | | | < 1 | | | < 1.0 |
| Nitrite (mg/L) Groundwater <br/> Average Quarterly | | | < 0.1 | | | < 0.1 | | | < 0.1 | | | < 0.1 |
| TKN (mg/L) Groundwater <br/> Average Quarterly | | | < 3.5 | | | < 0.7 | | | < 3.5 | | | < 3.5 |
| Total Phosphorus (mg/L) Groundwater <br/> Annual Average | | | | | | 0.14 | | | | | | |
| Total Chlorides and Sulfates (mg/L) Groundwater <br/> Average Quarterly | | | 16.05 | | | 16.61 | | | 18.99 | | | 17.4 |

DMR Data for Outfall 505 (from June 1, 2023 to May 31, 2024)

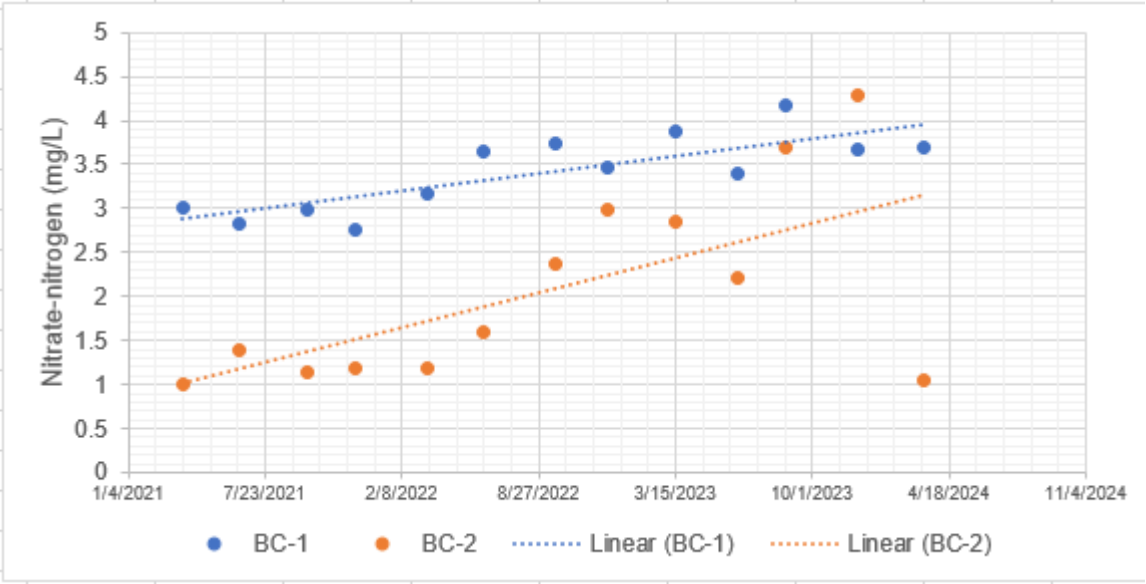
| Parameter | MAY-24 | APR-24 | MAR-24 | FEB-24 | JAN-24 | DEC-23 | NOV-23 | OCT-23 | SEP-23 | AUG-23 | JUL-23 | JUN-23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pH (S.U.) Groundwater <br/> Average Quarterly | | | 5.86 | | | 5.85 | | | 6.24 | | | 6.23 |
| BOD5 (mg/L) Groundwater <br/> Average Quarterly | | | < 2 | | | < 2.0 | | | 5.4 | | | < 2.0 |
| Total Dissolved Solids (mg/L) Groundwater <br/> Average Quarterly | | | 68 | | | 82.0 | | | 116 | | | 102 |
| Ammonia (mg/L) Groundwater <br/> Average Quarterly | | | < 0.1 | | | < 0.1 | | | 0.25 | | | < 0.1 |
| Nitrate (mg/L) Groundwater <br/> Average Quarterly | | | < 1 | | | < 1.0 | | | < 1.0 | | | 1.17 |
| Nitrite (mg/L) Groundwater <br/> Average Quarterly | | | < 0.1 | | | < 0.1 | | | < 0.1 | | | < 0.1 |
| TKN (mg/L) Groundwater <br/> Average Quarterly | | | < 0.7 | | | < 0.7 | | | 1.17 | | | < 0.7 |
| Total Phosphorus (mg/L) Groundwater <br/> Annual Average | | | | | | < 0.1 | | | | | | |
| Total Chlorides and Sulfates (mg/L) Groundwater <br/> Average Quarterly | | | 27.04 | | | 23.7 | | | 25.36 | | | 27.9 |

Zach Richards, Licensed Professional Geologist of DEP, reviewed the groundwater evaluation of the WQM permit.

The following comments were offerred.

Sulfate was not included in the evaluation, though results are continually low in concentration. The spring was also not evaluated but impacts from the system appear minimum based on the last few quarters of data with nitrate-nitrogen near or below the lab reporting limit. Surface water was not evaluated.

The study concluded to pay attention to the two monitoring wells downgradient of the spray site (BC-1 and BC-2) because nitrate-nitrogen concentration appears to be increasing since the first quarter of 2022. The data for the two monitoring wells are in a chart, below. Although a linear fit shows an increase over time, BC-1 appears to have moderated recently and BC-2 has dropped back to pre-2022 levels after reaching its max in the fourth quarter of 2023.




TDS is highest below the storage lagoon (BC-4), with minimal ammonia-N and BOD5. Chloride and nitrate-nitrogen is lower compared to BC-1 and BC-2. This could also be something to keep an eye on but is not an immediate problem as they are still below the smcl and have been stable over the last five years.

Thomas Sweeney, Soil Scientist of DEP, reviewed the land application aspects of the WQM permit.

The following comments were offerred.

1. The engineer report referrers to drip irrigation in several places. This was permitted and is for spray irrigation.
2. The application rates were well below permitted rates. In January 2023, the total acreage used was 4.99 acres. The permitted acres is 7.57 acres. The data for 2023 and 2024 appeared without any issues.

2023

| Month | Z1 | Z2 | Z3 | total | ac-in/week | sludge | GW samples |
|---|---|---|---|---|---|---|---|
| January | 0 | 157,500 | 157,000 | 314,500 | 0.53 | 6,500 | |
| February | 56,000 | 126,000 | 126,000 | 308,000 | 0.35 | 6,500 | |
| March | 80,000 | 80,000 | 80,000 | 240,000 | 0.27 | 6,500 | y |
| April | 80,000 | 80,000 | 80,000 | 240,000 | 0.27 | 0 | |
| May | 80,000 | 80,000 | 80,000 | 240,000 | 0.27 | 6,500 | |
| June | 40,000 | 40,000 | 40,000 | 120,000 | 0.13 | 0 | y |
| July | 80,000 | 80,000 | 80,000 | 240,000 | 0.27 | 0 | |
| Aug | 48,000 | 48,000 | 48,000 | 144,000 | 0.16 | 6,500 | y |
| Sept | 72,000 | 72,000 | 72,000 | 216,000 | 0.24 | 6,500 | |
| Oct | 72,000 | 72,000 | 72,000 | 216,000 | 0.24 | 6,500 | |
| Nov | 88,000 | 88,000 | 88,000 | 264,000 | 0.30 | 0 | |
| Dec | 72,000 | 72,000 | 72,000 | 216,000 | 0.24 | 6,500 | Y |
| **SUM** | | | | **2,758,500** | | **52,000** | |

3. Sewage sludge was being hauled out and reported.
4. Special Condition F.1 requires annual measurement of the sludge level in the lagoon. The facility should be contacted for this information.
5. The facility was submitting monthly surface water (MP 101 and MP 102), quarterly groundwater, and semi-annual surface water sample results in WMS. The Hydro report only seems to evaluate the GW data.

**Inspection**

DEP files show the last inspection at the site was June 20, 2018. Operations staff plan on an inspection of the facility in the near term.

**Enforcement Actions**

The facility did not have any enforcement actions from January 4, 2019 to July 17, 2024.

**Open Violations**

As of July 2024, there were no open violations.

**Summary of Purpose of Outfalls**

001: Effluent sewage discharge for spray irrigation

002: Effluent reuse for snowmaking. Treated sewage effluent contribution to the snowmaking water shall be limited to 10% by volume.

501, 502, 503, 504: Groundwater wells

505: Monitoring for Spring

101, 102, 104, 110, 111: in-stream monitoring

Since there were no violations/enforcement actions, the current permit conditions have been continued to the proposed permit unchanged.

The proposed permit will expire five (5) years from the effective date.

Based on the review in this report, it is recommended that the permit be drafted. DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Any additional information or public review of documents associated with the discharge or facility may be available at PA DEP Southcentral Regional Office (SCRO), 909 Elmerton Avenue, Harrisburg, PA 17110. To make an appointment for file review, contact the SCRO File Review Coordinator at 717.705.4700.