



Water Protection Bureau
 P.O. Box 200901
 Helena, MT 59620-0901

PERMIT FACT SHEET

MONTANA GROUND WATER POLLUTION CONTROL SYSTEM (MGWPCS)

Permittee:	Wilderness Club
Permit Number:	MTX000194
Permit Type:	Domestic wastewater
Application Type:	Renewal
Facility Name:	Wilderness Club
Facility Location:	Northwest ¼ of Section 32, Township 37 N, Range 27 W, Lincoln County Latitude: 48.92535° Longitude: -115.13519° (Maintenance Offices) Latitude: 48.93117° Longitude: -115.14465° (Country Club)
Facility Address:	1885 Sophie Lake Road, Eureka, MT 59917
Facility Contact:	Larry Newlin, Superintendent
Treatment Type:	Level 2
Receiving Water:	Class I Ground Water
Number of Outfalls:	1
Outfall / Type:	001 / Multi zone subsurface pressurized drainfield
Effluent Type:	Domestic strength wastewater
Mixing Zone:	No mixing zone
Effluent Limit Type:	Water Quality Based Effluent Limit (WQBEL)
Effluent Limits:	Total nitrogen: 8.06 lbs/day
Flow Rate:	Design maximum: 96,650 gallons per day (gpd)
Effluent sampling:	Quarterly, dose tank, EFF-001
Fact Sheet Date:	April 2020
Prepared By:	Darryl Barton

1.0 PERMIT INFORMATION

DEQ issues MGWPCS permits for a period of five years. The permit may be reissued at the end of the period, subject to reevaluation of the receiving water quality and permit limitations. This fact sheet provides the basis for DEQ's decision to renew a MGWPCS wastewater discharge permit for the WILDERNESS CLUB (WC) wastewater treatment system.

1.1 APPLICATION

DEQ received an application for renewal of the permit on September 13, 2019. Renewal fees accompanied the application. DEQ reviewed the submittal and issued a completeness letter on October 25, 2019.

1.2 PERMIT HISTORY

The original Wilderness Club permit became effective in 2008 and was renewed in 2014.

1.3 CHANGES TO THIS PERMIT

The effluent limit for nitrogen has been recalculated to a load limit based on pounds per day total nitrogen. Load limits are appropriate for discharges to ground water since the long-term loading is the greater concern in absence of aquatic life considerations. Additionally, load limits inherently control both the strength and volume of the discharge.

2.0 FACILITY INFORMATION

2.1 LOCATION AND FACILITY

The WILDERNESS CLUB is located about 4 miles northwest of Eureka, 7 miles south of the Canadian border and about a half mile east of Lake Kooconusa (**Figure 1**).

WC is a private residential resort which includes a golf course, horse-back riding, a spa, water park and exercise center, a club house, bar and restaurant. WC occupies 550 acres. WC full build out is 319 units: 271 single family residences, 47 condominiums and one commercial lot. Suites, cottages, and houses are also available to the public on a nightly basis.



Figure 1. Location of WILDERNESS CLUB

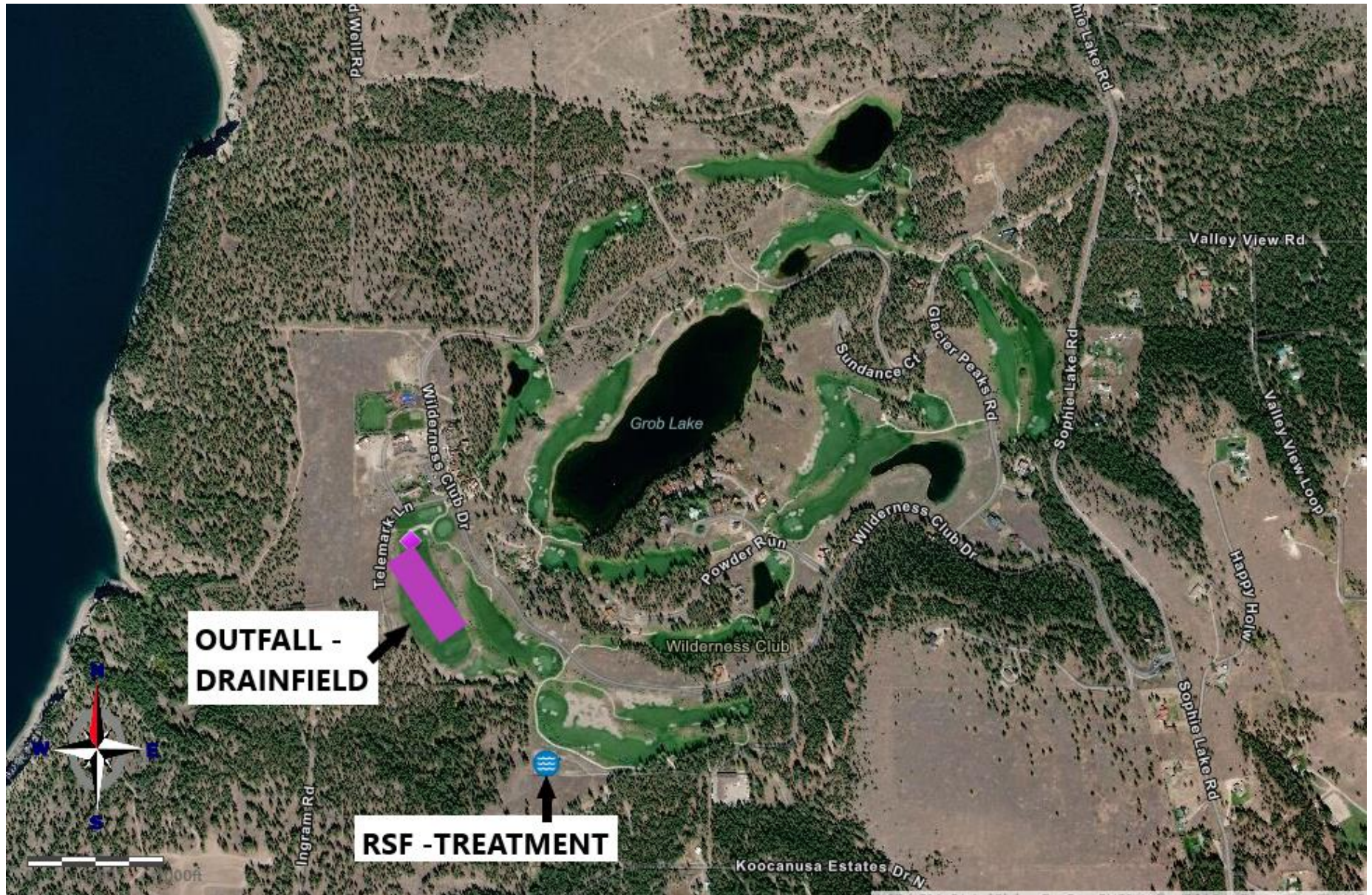


Figure 2. WILDERNESS CLUB Aerial Map



Figure 3. WILDERNESS CLUB Wastewater System

2.3 OPERATIONS

System operations are summarized in **Table 1**.

Table 1: Collection, Treatment, and Disposal System Summary
Inflows
Contributing Sources of Wastewater: Domestic and Commercial Standard Industrial Code(s) (SIC) of contributing sources: 7211 & 71391 - Golf Courses & Country Clubs; Operating resorts, golf facilities combined with accommodations 4952-Sewerage System
Treatment
Large community septic tank (217,500 gallon), 8 recirculating tanks (18,250 gallons each), four recirculating sand filters (RSF), and multi-zoned pressure-dosed drainfield.
Treatment Level: Level II
Location: Latitude: 48.92570°, Longitude: - 115.14058°
Disposal System
Disposal Structure: Outfall 001
Method of Disposal: Multi-zoned pressure-dosed subsurface drainfield
Location: Latitude: 48.92920°, Longitude: -115.14431°
Daily Maximum Design Flow (gpd): 96,650 gallons per day
Effluent Sampling Location: EFF-001: Dose Tank
Flow Monitoring Equipment: FM-001: One Blue-White paddlewheel flow meter located immediately after the dose tank prior to discharge in drainfield

Wastewater for all the residential and commercial operations is collected and treated in a single community treatment system. **Figure 4** provides a flow line diagram showing an overview of the treatment process. **Figure 5** shows the collection and treatment system. The single-family homes, condominiums, and the clubhouse have individual grinder pumps prior to entering the force main. Kitchen waste from the clubhouse, restaurant, and bar flow through grease traps prior to a grinder pump and the force main. A 217,500-gallon septic tank with eight outlets provides primary treatment for all wastewater. From the septic tank the wastewater gravity flows into recirculation tanks (8 total tanks 18,250 gallons each). The recirculation tanks dose the four recirculating sand filters (RSF) which are each divided into six zones. Approximately 75% of the effluent is directed back to the recirculation tank to pass through the RSF again while the other 25% is delivered to the 5,000-gal dose tank. A flowmeter (FM-001) measures the effluent flow leaving the dose tank. From the dose tank the effluent enters the distribution box for discharge into the subsurface drainfield. **Table 1** summarizes the wastewater treatment and disposal system.

Effluent sampling location (EFF-001) is at the dose tank prior to discharge in the drainfield (Outfall 001).

Monitoring and sampling requirements are further discussed in **Section 6**.

LINE DRAWING OF WILDERNESS CLUB WASTEWATER TREATMENT SYSTEM

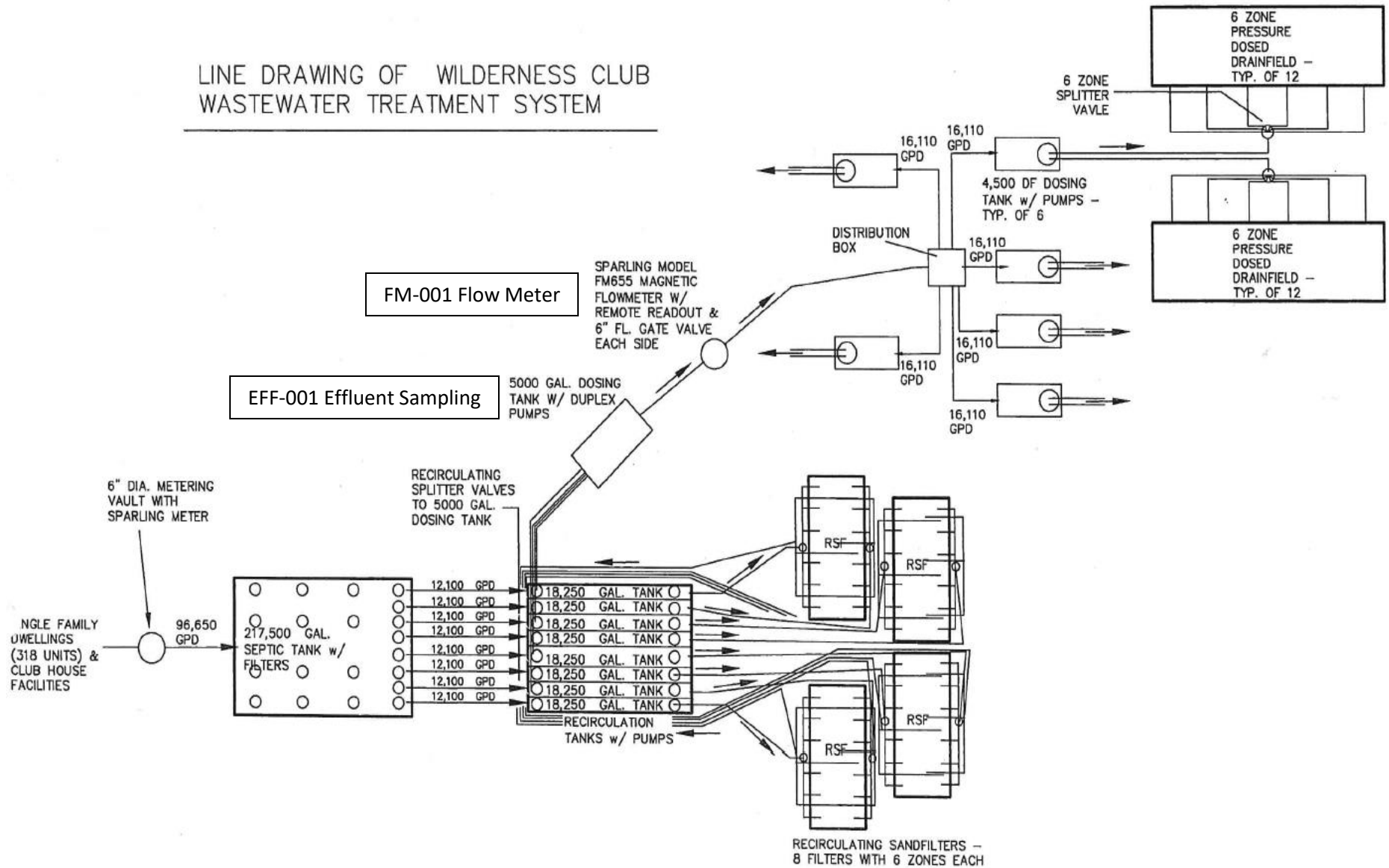


Figure 4. Wastewater Treatment System Line Diagram.

2.4 EFFLUENT CHARACTERISTICS

DEQ requires a permit applicant to disclose the quality of the effluent so that DEQ may evaluate the potential for pollution of state water. During the previous permit cycle, the facility sampled and reported effluent quality criteria to DEQ in the form of discharge monitoring reports (DMRs). These data are summarized in **Table 2**. The majority of the concentrations are reported in units of milligrams per liter (mg/L), which is equivalent to one part per million.

Table 2: Effluent Quality – Outfall 001. Reported DMR Values							
Parameter⁽¹⁾	Location	Units	Minimum	Average	Maximum⁽²⁾	# of Samples	2014 Permit Limit
Biochemical Oxygen Demand (BOD ₅)	EFF-001	mg/L	2.00	9.54	21.00	13	
Flow rate, Discharge	FM-001	gpd	519.00	2522.13	7383.00	15	
Nitrogen, Nitrate + Nitrite (as N)	EFF-001	mg/L	0.08	23.26	56.10	16	
Nitrogen, Total Ammonia (as N)	EFF-001	mg/L	0.40	9.94	44.60	16	
Nitrogen, Total Kjeldahl (as N)	EFF-001	mg/L	1.08	12.66	51.20	16	
Nitrogen, Total (as N)	EFF-001	mg/L	9.53	35.16	63.40	16	26, 10 ⁽³⁾
Total Suspended Solids (TSS)	EFF-001	mg/L	1.00	12.88	78.00	16	

Footnotes:

DMR = Self-Reported Discharge Monitoring Reports
 EFF-001: Effluent sample site located at dose tank
 FM-001: Effluent flow meter located after dose tank
 Period of Record: 06/2015 through 12/2019

(1) Conventional and nonconventional pollutants only, table does not include all possible toxics.
 (2) Maximum value recorded of all quarterly reported Daily Maximum Values.
 (3) Permit limit was set at 26 mg/L for an interim period of 4 years. Then effluent limit became 10 mg/L.

2.5 GEOLOGY

The Natural Resources Conservation Service (NRCS) Soil Survey indicates the area of wastewater dispersal (the drainfield) and the down gradient area, consist of two soil types. Canusa-Felt and Canusa sandy loam are the predominant soils in the outfall discharge area. Soil map and descriptions are found in **Appendix B**.

Wilderness Club is located in the Tobacco Plains valley of the Rocky Mountain Trench extending from the Canadian border to Eureka. Isolated drumlin-like hills and kettle lakes are scattered across the plains. The Kootenai River forms the western boundary and the Whitefish Mountain Range is to the east.

The Rocky Mountain Trench is a narrow northwest trending topographic depression that formed during the Laramide Orogeny as part of the Paleocene or Eocene Epoch. The trench has experienced down-faulting between major longitudinal faults. Precambrian bedrock of the Belt Supergroup forms the walls along the Rocky Mountain Trench and are exposed at or near the surface between depositional basins within the trench area. The Belt Supergroup is composed of metasedimentary rocks mostly composed of fine-grained argillite, impure limestone, and quartzite in this area. Separate depositional basins within the trench area have been filled with nearly 3,000 feet of sediments. These deposits are primarily glacial and fluvial-glacial in nature and include dune sands, lake-

bottom or deltaic deposits, outwash deposits, and till associated with the advance and retreat of the Cordilleran (Pleistocene) ice sheet.

2.6 HYDROGEOLOGY

The permit renewal application indicates no shallow unconfined ground water present near the wastewater treatment facility. So, no groundwater monitoring results have been provided. The wells monitored during the permit cycle reportedly remain dry. Well logs are included in **Appendix A**. A review of 8 wells in the drainfield area shows static water level ranging from 70 to 280 feet depth with an average of 136 feet (Montana Bureau of Mines and Geology Ground Water Information Center: GWIC).

In developing the initial permit there were three wells completed in the drainfield area to determine depth or even the presence of a shallow groundwater table. Three borings were installed in different directions near the drainfield. Shallow groundwater was not found in any of these.

Ground water gradient and hydraulic conductivity were not determined in previous permit cycles due to the lack of a shallow ground water table. Hydraulic gradient and hydraulic conductivity are unavailable at this time.

Two surface water bodies are within one mile of Outfall 001: Grob Lake (≈ 1,500 ft to the east) and Lake Koocanusa (≈ 2,000 ft to the southwest). Ground water flow direction is S45°W, so Lake Koocanusa is the nearest surface water body in the direction of ground water flow.

Well logs show two different ground water depths. Two irrigation wells averaged 13-foot static water level at the time of well installation. Four drinking water wells used for public water supply average a static water level of 67-feet. Important hydrogeologic characteristics are summarized in **Table 3**.

Table 3. Hydrogeologic Summary

Average depth to ground water	13 feet (2 irrigation wells); 67 feet (4 drinking water wells): well logs, GWIC
General ground water flow direction	S45°W
Hydraulic conductivity	Not submitted
Hydraulic gradient	Not submitted
Nearest downgradient surface water	Lake Koocanusa, 2,000 feet

2.7 GROUND WATER MONITORING WELLS

There are 2 monitoring wells on the property MW-1 and MW-2. Monitoring well construction details are provided in **Table 4**. Driller’s logs for monitoring wells are attached as **Appendix A**.

Table 4. Monitoring Well Summary	
Monitoring Well: MW-1	
MBMG GWIC #: 228251	
Status: Constructed on 2/26/2006	
Location:	
Latitude: 48.92842°	Longitude: -115.14643°
Representation: Downgradient of Outfall 001.	
Monitoring Well: MW-2	
MBMG GWIC #: 228254	

Status: Constructed on 7/27/2008	
Location:	
Latitude: 48.92716°	Longitude: -115.14425°
Representation: Downgradient groundwater	

If a DEQ-approved monitoring well is abandoned, destroyed or decommissioned, or is no longer able to be sampled due to fluctuations in the groundwater table, the permittee must install or designate a new well to replace the abandoned, destroyed, decommissioned, or non-viable well.

3.0 WATER QUALITY STANDARDS AND NONDEGRADATION

Part of DEQ's mission is to protect, sustain, and improve the quality of state waters. Water quality standards provide the basis for effluent limits that DEQ applies to discharge permits (**Section 5**). These standards include three components: designated uses, water quality criteria, and nondegradation policy. DEQ protects all designated uses of state water by basing effluent limits on the most restrictive water quality limitations, intended to protect the most sensitive uses.

3.1 DESIGNATED USES

With a specific conductivity of 503 $\mu\text{S}/\text{cm}$ (2008 permit), the receiving water is Class I ground water and therefore a high-quality water of the State. Class I ground waters must be maintained suitable for the following uses with little or no treatment:

- Public and private drinking water supplies
- Culinary and food processing purposes
- Irrigation
- Drinking water for livestock and wildlife
- Commercial and industrial purposes

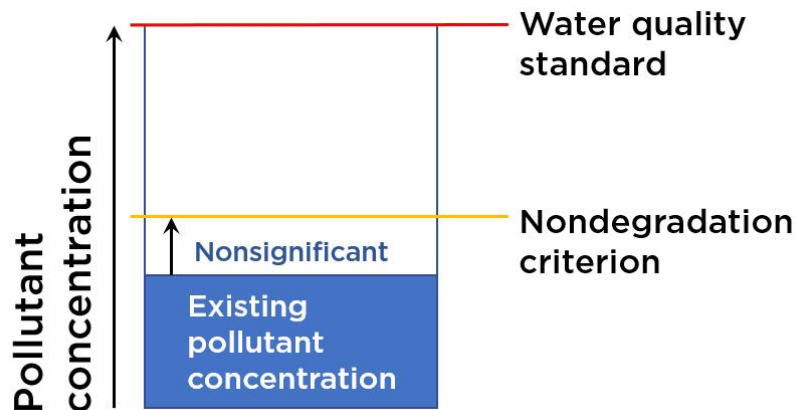
DEQ protects all the assigned beneficial uses by protecting the most sensitive. Drinking water is the most sensitive use of this receiving water.

3.2 WATER QUALITY CRITERIA

Montana has water quality standards for both surface water and ground water. The numeric criteria for each are different because they must support different uses. DEQ writes permits to protect the most sensitive, thereby protecting all uses. DEQ's ground water standard for nitrate is 10.0 mg/L. Class I ground water must be maintained suitable for use as a drinking water supply with little or no treatment, and therefore must meet the corresponding human health standard of 10.0 mg/L total nitrogen. These water quality standards may not be exceeded outside a designated mixing zone (**Section 4**).

3.3 NONDEGRADATION

Montana's nondegradation policy is intended to preserve the existing condition of high-quality state waters. Any water whose existing condition is better than the water quality standards must be maintained in that high quality. Nondegradation policy allows discharges to cause only nonsignificant changes in water quality. Changes in water quality that are deemed significant require an authorization to degrade. An authorization to degrade is not an authorization to pollute; the water quality standard must not be exceeded.



DEQ must determine whether the proposed discharge will result in significant changes in water quality.

3.4 NONSIGNIFICANCE

DEQ has determined that the activity is not considered to be a new or increased source resulting in a change of existing water quality occurring on or after April 29, 1993. DEQ is therefore not required to perform a significance determination. The applicable water quality standards for Class I ground water are summarized in **Table 5**. This permit includes monitoring, reporting, and corrective action requirements to establish, confirm, and maintain compliance with permit limitations.

4.0 MIXING ZONE

A mixing zone is a specifically defined area of the receiving water where water quality standards may be exceeded. DEQ evaluates the suitability according to criteria established in the Administrative Rules of Montana. The mixing zone is then defined in the permit.

The applicant has not requested a mixing zone for this discharge, consistent with previous permit cycles.

5.0 PERMIT CONDITIONS

Discharge permits include conditions that ensure compliance with the Montana Water Quality Act and the regulations used to implement it. These conditions include effluent limits as well as any special conditions that DEQ deems necessary to protect the quality of the receiving water.

Montana's numeric water quality standards are published in Circular DEQ-7. Water quality criteria applicable to this permit are summarized in **Table 5**. The permit establishes effluent limits that will meet water quality standards and nondegradation criteria, thereby protecting beneficial uses and existing high-quality waters. The most restrictive criteria in **Table 5** provide the basis for the effluent limits.

Parameter	Human Health Standard	Beneficial Use Support
Nitrate + nitrite as Nitrogen [N]	10 mg/L	-
Total Nitrogen	-	10 mg/L

This discharge permit includes numeric WQBELs that restrict the strength and volume of the discharge. The ground water nonsignificance criteria provide the basis for the limits. DEQ evaluates and recalculates the limits using updated water quality data as part of every permit renewal cycle. In this way, DEQ protects the receiving water quality by continually assessing cumulative impacts to the receiving water.

5.1 TOTAL NITROGEN EFFLUENT LIMIT

DEQ calculates an effluent limit that protects receiving water quality and beneficial uses according to the following equation:

$$\begin{aligned} \text{Load limit (lbs/day) per outfall} &= \text{effluent flow rate (gpd)} \times [\text{daily maximum concentration (mg/L)} - \text{ambient} \\ &\text{groundwater concentration}] \times (8.34 \times 10^{-6}) \\ &= (96,650 \text{ gpd}) \times (10.0 \text{ mg/L} - 1.0 \text{ mg/L}) \times (8.34 \times 10^{-6}) \end{aligned}$$

Load limit (lbs/day) per outfall = 7.25 lbs/day

The final WQBEL expressed as a concentration is 10 mg/L. Load limits are appropriate for discharges to ground water since the long-term loading is the greater concern in absence of aquatic life considerations. Additionally, load limits inherently control both the strength and volume of the discharge. Average ambient groundwater nitrogen levels for wells in this area is 1.0 mg/L. We subtract 1.0 mg/L from the 10 mg/L to allow 9.0 mg/L. A discharge of 96,650 gallons per day containing 9.0 mg/L total nitrogen is equivalent to 7.25 pounds per day.

5.2 TOTAL PHOSPHORUS EFFLUENT LIMIT

DEQ previously determined (2008) that phosphorous discharged to ground water would reach the surface water (Lake Kocanusa) in 171 years. A phosphorous breakthrough time of more than 50 years is considered insignificant. Therefore, there will not be a phosphorous effluent limit in this permit.

Based on the information presented, DEQ proposes the following numerical effluent limitation in **Table 5**.

Parameter	Units	Daily Maximum ⁽¹⁾
Total Nitrogen (as N)	lbs/day	7.25
Footnotes:		
(1) See definition in Part V of permit.		

6.0 MONITORING AND REPORTING REQUIREMENTS

DEQ requires effluent and ground water monitoring to assure compliance with the effluent limitations and therefore water quality standards. Effluent monitoring and ground water monitoring is required as a condition of this permit. All monitoring and sampling required by this permit must be representative; therefore, the permit identifies specific monitoring locations. Monitoring requirements and rationale are summarized below.

6.1 EFFLUENT MONITORING

This permit includes numeric effluent limitations with specific magnitudes and durations to ensure the discharge will not cause or contribute to an exceedance of an applicable water quality standard (see **Section 3**). Accordingly, the permittee is required to monitor and report at a specified frequency to demonstrate compliance with these limitations. Effluent samples and discharge flow measurements must be representative of the nature and volume of the effluent. The effluent sample location (EFF-001) is located at the dose tank as shown in **Figure 4**. The permittee is required to install, maintain and report flow measurements using a flow-measuring device capable of measurements that are within 10 percent of the actual flow. The flow measuring device (FM-001) is located between the dose tank and the drainfield (**Figure 4**). The flow measuring device must be installed and in operating condition prior to discharge. In reviewing the DMR data for this system it seems that the flow meter is not operating correctly as the flows are at historical lows for the past three quarters. It will be a condition of this permit to get the flowmeter in proper operation. Effluent monitoring and reporting requirements are found in **Table 6**.

Parameter	Monitoring Location	Units	Sample Type ⁽¹⁾	Minimum Sampling Frequency	Reporting Requirements ⁽¹⁾⁽²⁾	Report Frequency	Rationale
Flow Rate ⁽³⁾⁽⁴⁾	Flow Meter	gpd	Continuous	Continuous	Daily Max and Quarterly Average	Quarterly	Permit Compliance/ Effluent Characterization
Biochemical Oxygen Demand (BOD ₅)	Dose Tank	mg/L	Grab	1/Quarter	Quarterly Average	Quarterly	Proper O&M/ Effluent Characterization
Nitrate + Nitrite (as N)	Dose Tank	mg/L	Grab	1/Quarter	Daily Max and Quarterly Average	Quarterly	Permit Compliance/ Proper O&M
Total Ammonia (as N)	Dose Tank	mg/L	Grab	1/Quarter	Daily Max and Quarterly Average	Quarterly	Proper O&M
Total Kjeldahl Nitrogen (as N)	Dose Tank	mg/L	Grab	1/Quarter	Daily Max and Quarterly Average	Quarterly	Permit Compliance
Total Nitrogen (as N) ⁽⁴⁾	Dose Tank	mg/L	Calculate	1/Quarter	Daily Max and Quarterly Average	Quarterly	Permit Compliance
Total Suspended Solids (TSS)	Dose Tank	mg/L	Grab	1/Quarter	Quarterly Average	Quarterly	Proper O&M/ Effluent Characterization

Footnotes:
 NA = Not Applicable
 (1) See definitions in Part IV of the permit.
 (2) Daily Maximum: Report highest measured daily value for the reporting period on Discharge Monitoring Report (DMR) form.
 (3) If no discharge occurs during the reporting period, "No Discharge" shall be recorded on the DMR report form.
 (4) Total Nitrogen is the sum of the Nitrate + Nitrite and Total Kjeldahl Nitrogen parameters.

All analytical methods must be in accordance with the Code of Federal Regulations, 40 CFR Part 136 for each monitored parameter.

6.2 GROUND WATER MONITORING

Ground water monitoring includes both water quality sampling and water level monitoring. There are two wells on the property that were installed to monitor groundwater quality. The wells have been dry throughout the prior permit time frame, so they have not been sampled. There may not be a shallow groundwater table in the vicinity or immediately down gradient of the drainfield. By deepening an existing well or installing a new one we will gain a greater understanding of the hydrogeology of the area.

A public drinking water system well for the town of Rexford sits to the west of the drainfield. It is very important that no contamination from the wastewater system at the Wilderness Club impacts the drinking water within this well. The well is about 900-feet away from the drainfield. Minimum distance for separation of a well and drainfield is 100-feet. The Rexford well had a static water level of 110-feet during the time of installation. Separation distances and soil type found on this site provide conditions for excellent treatment and dispersal of wastewater. Review of water quality monitoring for the Rexford well show nitrate levels of about 0.3 mg/L. This is well below the water quality standard of 10 mg/L. It is also consistent with other wells in the vicinity that contain nitrate levels regularly between 0.20 and 1.80 mg/L. It seems there has been no impact on the water quality of the well as a result of the wastewater system from the Wilderness Club. The nitrate levels of area wells (average 1.0 mg/L) have been used to provide an ambient groundwater nitrogen level in calculating the nitrogen limit for this permit.

Past permits discuss attempts at ground water monitoring. Attempts to monitor groundwater quality around the outfall have been unsuccessful. A condition of this permit is to successfully install or improve a current well so that it can be sampled. Prior attempts stopped short of the water table and created wells that are dry and not useful. This permit requires that a monitoring well be installed that extends into the water table whether it is shallow or down to a depth of 100-feet. A monitoring well improvement plan will need to be completed and submitted to DEQ within 180 days of the effective date of the permit. Following DEQ review and approval, the well improvement will be installed within one year of the effective date of the permit. Then commence monitoring and reporting of water quality in the improved well. This well will be referred to as MW-3. Please continue to monitor wells MW-1 and MW-2 and note if they are still dry. If they are not dry please monitor and report water quality.

Ground water monitoring and reporting requirements are found in the following two tables **Table 7** and **Table 8**. **Table 7** provides a format that can be used in monitoring the ground water wells. **Table 8** lists the ground water monitoring and reporting in a more traditional format that is similar to prior permits.

Table 7: Ground Water Monitoring Requirements

Minimum Sampling Frequency: Quarterly

Required Laboratory Method: 40 CFR 136⁽¹⁾

Ground Water Reporting Requirements⁽²⁾

Cumulative Record of all Individual Monitoring and Sample Results through Term of the Current Permit Cycle

Statistical Summary Report of all Individual Results through Term of the Current Permit Cycle⁽³⁾

Report Action Date: To be Updated Annually on January 1st through the Term of the Permit Cycle.

Each Annual Report must be received by DEQ on or before January 28th.

Analyte / Measurement	Units	Individual Sample Record (Repeat as Necessary)							Permit Cycle Statistical Summary							
		Sample Collection Date	Dry-Well Conditions? (y/n)	Lab Result ⁽⁴⁾	Laboratory Reporting Level	Non-Detect? (y/n)	Laboratory Method	Laboratory Qualifier Code(s) ⁽⁵⁾	Count of Samples Collected	Count of Dry-Well Samples	Lab Results				Count of Non-detects	Average Laboratory Reporting Level
											Minimum	Average	Median	Maximum		
Chloride [as Cl]	mg/L															
Nitrogen, Nitrite + Nitrate [as N]	mg/L															
Nitrogen, Total Kjeldahl [as N]	mg/L															
Nitrogen, Total [as N]	mg/L															
Specific Conductivity @ 25°C	µS/cm															
Total Well Depth	ft-bmp															
Static Water Level	ft-bmp															

Footnotes:

ft-bmp: feet below measuring point.

s.u.: standard units

Monitoring and Reporting will be required regardless of the operational status of the facility or of the condition of the monitoring well.

(1) The listed laboratory analytical method must be used unless written approval by DEQ is received.

(2) The permittee may create their own report in a format that suits their operational and reporting needs. It must however contain all data inputs as shown above and in the respective permit condition.

(3) Each submitted report must cumulate all monitoring events and samples collected to date, starting with the permit effective date and continuing through the term of the permit.

(4) For nondetects, the laboratory reporting level must be entered in as the respective lab result.

(5) Laboratory qualifiers are not common, leave blank if none. Attach a description of all listed codes if any.

Table 8: Ground Water Monitoring and Reporting Requirements

Parameter⁽¹⁾	Monitoring Locations	Units	Sample Type⁽²⁾	Minimum Sampling Frequency	Reporting⁽²⁾⁽³⁾⁽⁴⁾ Requirements	Reporting Frequency
Chloride (as Cl)	MW-1, MW-2, MW-3	mg/L	Grab	Quarterly	Quarterly Average	Quarterly
Nitrate + Nitrite (as N)	MW-1, MW-2, MW-3	mg/L	Grab	Quarterly	Daily Maximum & Quarterly Average	Quarterly
Nitrogen (as N), Total Kjeldahl Nitrogen	MW-1, MW-2, MW-3	mg/L	Grab	Quarterly	Daily Maximum & Quarterly Average	Quarterly
Static Water Level (SWL) ⁽⁵⁾	MW-1, MW-2, MW-3	ft-bmp	Instantaneous	Quarterly	Quarterly Average	Quarterly
Specific Conductivity @ 25°C	MW-1, MW-2, MW-3	µS/cm	Instantaneous	Quarterly	Quarterly Average	Quarterly

Footnotes:

CFU = Colony Forming Units

ft-bmp = feet below measuring point

At no time shall the permittee mark or state "no discharge" on any monitoring well DMR form.

- (1) Parameter analytical methods shall be in accordance with the Code of Federal Regulations, 40 CFR Part 136
- (2) See definitions in Part V of the permit.
- (3) Daily Maximum: Report highest measured daily value for the reporting period on Discharge Monitoring Report (DMR) form.
- (4) The geometric mean must be reported if multiple samples are taken during a reporting period.
- (5) Measuring point for SWL measurements shall be from top of casing and measured to within 1/100th of one foot.

COMPLIANCE SCHEDULE

The actions listed in **Table 8** must be completed on or before the scheduled completion date. A report documenting each respective action must be received by DEQ on or before the scheduled reporting date.

Table 8: Compliance Schedule			
Action	Freq.	Scheduled Completion Date of Action⁽¹⁾	Scheduled Report Due Date.⁽²⁾
Replace or repair flowmeter	Single event	<i>Within 60 days of the effective date of the permit.</i>	<i>Due on or before the 28th day of the month following the completion date</i>
Complete a Monitoring Well Improvement Plan. ⁽³⁾	Single event	<i>Within 180 days of the effective date of the permit.</i>	<i>Due on or before the 28th day of the month following the completion date.</i>
Complete the improvement or installation of the monitoring well. Provide as-built drawings to DEQ.	Single event	<i>Within one (1) year of the effective date of the permit.</i>	<i>Due on or before the 28th day of the month following the completion date.</i>
Commence monitoring and reporting of the improved or newly installed monitoring well.	Single event	<i>Within 90 days of the installation of the well.</i>	<i>Due on or before the 28th day of the month following the completion date.</i>
Footnotes: (1) The actions must be completed on or before the scheduled completion dates. (2) Reports must be received by DEQ on or before the scheduled report due dates. (3) Groundwater monitoring at the downgradient monitoring well must be improved. Either MW-1 or MW-2 must be deepened or there must be the installation of a new monitoring well downgradient of the drainfield (Outfall 001).			

PUBLIC NOTICE

Legal notice information for water quality discharge permits are listed at the following website: <http://deq.mt.gov/Public/notices/wqnotices>. Public comments on this proposal are invited any time prior to close of business on **June 18, 2020**. Comments may be directed to:

DEQWPBPublicComments@mt.gov

or to:

Montana Department of Environmental Quality
Water Protection Bureau
PO Box 200901
Helena, MT 59620

All comments received or postmarked prior to the close of the public comment period will be considered in the formulation of the final permit. DEQ will respond to all substantive comments pertinent to this permitting action and may issue a final decision within thirty days of the close of the public comment period.

All persons, including the applicant, who believe any condition of the draft permit is inappropriate, or that DEQ's tentative decision to deny an application, terminate a permit, or prepare a draft permit is inappropriate, shall raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by the close of the public comment period (including any public hearing). All public comments received for this draft permit will be included in the administrative record and will be available for public viewing during normal business hours.

Copies of the public notice are mailed to the applicant, state and federal agencies, and interested persons who have expressed interest in being notified of permit actions. A copy of the distribution list is available in the administrative record for this draft permit. Electronic copies of the public notice, draft permit, fact sheet, and draft environmental assessment are available at the following website: <http://deq.mt.gov/Public/notices/wqnotices>.

Any person interested in being placed on the mailing list for information regarding this permit may contact the DEQ Water Protection Bureau at (406) 444-5546 or email DEQWPBPublicComments@mt.gov. All inquiries will need to reference the permit number (MTX000194), and include the following information: name, address, and phone number.

During the public comment period provided by the notice, DEQ will accept requests for a public hearing. A request for a public hearing must be in writing and must state the nature of the issue proposed to be raised in the hearing.

APPENDIX A – MONITORING WELL LOGS

APPENDIX B – SOILS INFORMATION



Map Unit Legend			
Kootenai National Forest Area, Montana-Idaho (MT634)			
Kootenai National Forest Area, Montana-Idaho (MT634)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1075	Tetrault-Canusa-Jocko complex, 1 to 20 percent slopes	50.9	18.3%
1111	Canusa-Felt family complex, 0 to 15 percent slopes	137.5	49.4%
1112	Canusa sandy loam, 1 to 20 percent slopes	81.8	29.4%
W	Water	8.2	2.9%
Totals for Area of Interest		278.3	100.0%

Report — Map Unit Description**Kootenai National Forest Area, Montana-Idaho****1111—Canusa-Felt family complex, 0 to 15 percent slopes****Map Unit Setting**

National map unit symbol: 2v5vy

Elevation: 2,510 to 2,660 feet

Mean annual precipitation: 14 to 16 inches

Mean annual air temperature: 43 to 45 degrees F

Frost-free period: 106 to 115 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Canusa and similar soils: 75 percent

Felt and similar soils: 25 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canusa**Setting**

Landform: Dune fields

Down-slope shape: Linear, convex

Across-slope shape: Convex

Parent material: Eolian sands

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material

A - 1 to 4 inches: sandy loam

Bk1 - 4 to 16 inches: sandy loam

Bk2 - 16 to 38 inches: sandy loam

2BCK - 38 to 60 inches: sand

Properties and qualities

Slope: 1 to 15 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

*Capacity of the most limiting layer to transmit water (Ksat): High
(2.13 to 7.09 in/hr)*

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 15 percent

Available water storage in profile: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: A

*Other vegetative classification: ponderosa pine/Idaho fescue-rough
fescue phase (PK142)*

Hydric soil rating: No

Report – Map Unit Description**Kootenai National Forest Area, Montana-Idaho****1112—Canusa sandy loam, 1 to 20 percent slopes****Map Unit Setting**

National map unit symbol: 2v5vz
Elevation: 2,460 to 2,610 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 43 to 45 degrees F
Frost-free period: 107 to 116 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Canusa and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canusa**Setting**

Landform: Dune fields
Down-slope shape: Linear, convex
Across-slope shape: Convex
Parent material: Eolian sands

Typical profile

O_i - 0 to 1 inches: slightly decomposed plant material
A - 1 to 4 inches: sandy loam
Bk₁ - 4 to 16 inches: sandy loam
Bk₂ - 16 to 38 inches: sandy loam
2BCK - 38 to 60 inches: sand

Properties and qualities

Slope: 1 to 20 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (K_{sat}): High
(2.13 to 7.09 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Other vegetative classification: ponderosa pine/Idaho fescue-rough fescue phase (PK142)
Hydric soil rating: No



WILDERNESS CLUB – AREA WELLS

RW - GWIC Water Well: 90542 REXFORD, TOWN WELL 1

W1 - GWIC Water Well: 236193 – WILDERNESS CLUB MONITORING WELL

W2 - GWIC Water Well: 90545 - CHAPMAN, WARREN

W3 - GWIC Water Well: 228254 - THE WILDERNESS CLUB, LLC * WELL # 2

W4 - GWIC Water Well: 90544 – BUTLER, CHUCK

W5 - GWIC Water Well: 243807 - WILDERNESS CLUB - WELL #5

W6 - GWIC Water Well: 235637 - WILDERNESS CLUB-WEST WELL#2

W7 - GWIC Water Well: 235580 - WILDERNESS CLUB-SOUTH WELL#3

W – GWIC Water Well: 228251 -

Gwic Id	Site Name	Td	Swl	Date	Use
228251	THE WILDERNESS CLUB, LLC * WELL # 1	47.00		2/26/2006	MONITOR
243807	THE WILDERNESS CLUB - PWS#4 [THE WILDERNESS CLUB,] * WELL #5	140.00	57.65	3 /10/2008	PWS
243760	THE WILDERNESS CLUB-PWS#3 [THE WILDERNESS CLUB,] * WELL #4	180.00	45.34	4/25/2008	PWS
235580	THE WILDERNESS CLUB-SOUTH WELL#3	58.00	14.15	11/8/2006	IRRIG
235581	THE WILDERNESS CLUB * NORTH WELL #4	54.00	11.37	11/9/2006	IRRIG
228254	THE WILDERNESS CLUB, LLC * WELL # 2 [39.00		7/27/2006	MONITOR
235636	THE WILDERNESS CLUB-EAST WELL#1	320.00	85.00	10/8/2006	PWS
235637	THE WILDERNESS CLUB-WEST WELL#2	310.00	81.00	10/27/2006	PWS
236193	WILDERNESS DEVELOPMENT LLC	80.00		4/24/2007	TEST WELL

APPENDIX C – REFERENCES

40 CFR § 136 – Guidelines Establishing Test Procedures for the Analysis of Pollutants. 2017.

Administrative Rules of Montana, Title 17, Chapter 30, Water Quality:

- Subchapter 2 – Water Quality Permit Fees.
- Subchapter 5 – Mixing Zones in Surface and Ground Water.
- Subchapter 6 – Surface Water Quality Standards and Procedures.
- Subchapter 7 – Nondegradation of Water Quality.
- Subchapter 10 – Montana Ground Water Pollution Control System.
- Subchapter 13 – Montana Pollutant Discharge Elimination System.

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Department of Environmental Quality. 2019. Administrative Record of Montana Ground Water Pollution Control System (MGWPCS) permit application and supplemental materials, Wilderness Club MTX000194.

Department of Environmental Quality, Water Quality Circulars:

- Circular DEQ-2 – Design Standards for Wastewater Facilities.
- Circular DEQ-4 – Montana Standards for On-Site Subsurface Sewage Treatment Systems.
- Circular DEQ-7 – Montana Numeric Water Quality Standards, Required Reporting Values, and Trigger Values.

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