FACTSHEET
(pursuant to NAC 445A.236)

Permittee Name: SILVER OAK DEVELOPMENT LP.

1251 COUNTRY CLUB DRIVE
CARSON CITY, NV 89703

Permit Number: NS0094015

Permit Type: GROUNDWATER DISCHARGE

Designation: GROUNDWATER

New/Existing: EXISTING

Location: SILVER OAK GOLF COURSE, CARSON CITY
1251 COUNTRY CLUB DRIVE, CARSON CITY, NV 89703
LATITUDE: 39.19139340, LONGITUDE: -119.779138
TOWNSHIP: 15 N, RANGE: 20 E, SECTION: 6

Outfall / Well Num	Outfall / Well Name	Location Type	Well Log Num	Latitude	Longitude	Receiving Water
001	POND 1	Internal Outfall		39.192696	-119.781965	GROUNDWATER
013	POND 13	Internal Outfall		39.181474	-119.781883	GROUNDWATER
018	POND 18	Internal Outfall		39.191178	-119.779826	GROUNDWATER
11N	POND 11 NORTH	Internal Outfall		39.186079	-119.778746	GROUNDWATER
11S	POND 11 SOUTH	Internal Outfall		39.184890	-119.778306	GROUNDWATER
15E	POND 15 EAST	Internal Outfall		39.184857	-119.781953	GROUNDWATER
15W	POND 15 WEST	Internal Outfall		39.184218	-119.780954	GROUNDWATER
SUM	EFFLUENT REUSE	External Outfall		39.19134310	-119.779008	GROUNDWATER
W01	MONITORING WELL 1	Monitoring Well		39.183156	-119.781573	GROUNDWATER
W02	MONITORING WELL 2	Monitoring Well		39.183529	-119.776802	GROUNDWATER
W03	MONITORING WELL 3	Monitoring Well		39.192239	-119.779020	GROUNDWATER
W04	MONITORING WELL 4	Monitoring Well		39.196750	-119.780638	GROUNDWATER
W05	MONITORING WELL 5	Monitoring Well		39.192522	-119.777808	GROUNDWATER
W07	MONITORING WELL 7	Monitoring Well		39.181926	-119.781312	GROUNDWATER
W08	MONITORING WELL 8	Monitoring Well		39.183932	-119.781202	GROUNDWATER
W09	MONITORING WELL 9	Monitoring Well		39.181326	-119.779138	GROUNDWATER
W10	MONITORING WELL 10	Monitoring Well		39.185262	-119.777240	GROUNDWATER
W11	MONITORING WELL 11	Monitoring Well		39.189886	-119.778291	GROUNDWATER
W12	MONITORING WELL 12	Monitoring Well		39.191412	-119.780952	GROUNDWATER
W13	MONITORING WELL 13	Monitoring Well		39.193977	-119.778185	GROUNDWATER
W14	MONITORING WELL 14	Monitoring Well		39.199070	-119.786304	GROUNDWATER

Permit History/Description of Proposed Action

The Permittee, Silver Oak Development Company, has applied for the renewal of groundwater discharge permit NS0094015 for the Silver Oak Golf Course located at 1251 Country Club Drive in Carson City,

Nevada. The Permittee proposes to continue to use reclaimed water to irrigate golf course landscaping and fill associated pond areas within the the course's boundary. The daily maximum flow will continue to be limited to 2.0 Million gallons per day (Mgal/d).

This permit was first issued on May 9, 1997. The most recent permit was issued on April 1, 2021 and expired on March 31, 2025; the permit has been administratively continued since.

Facility Overview

Silver Oak Golf Course is a 160-acre, 18-hole course consisting of bent, rye, and blue grasses. The golf course is supplied with secondary treated, denitrified, and disinfected reclaimed water (Outfall SUM) from the Carson City Water Resource Recovery Facility (CCWRRF, Permit NS0090008). Of the total acreage, approximately 151 acres are comprised of irrigated turf, landscape areas, and ponds supplied with reclaimed water. There are seven ponds (Outfalls 001, 013, 018, 11N, 11S, 15E, and 15W) on the golf course, all of which receive reclaimed water and are lined with a 30-mil ultraviolet inhibited PVC liner. The ponds have been constructed to withstand a 100-year storm event while maintaining two feet of freeboard. Reclaimed water is conveyed from the CCWRRF to the golf course via a transmission pipeline that supplies the primary storage pond (Pond 1, Outfall 001). Smaller ponds are supplied through 4-inch laterals originating from the primary pond. Every pond, except for Pond 1, is aerated with at least one submerged diffuser, which aids to supply oxygen consumed when ammonia is oxidized biologically to nitrate. Pond 1 has no mechanical aeration and relies on wind surface mixing.

Thirteen (13) monitoring wells (MWs) (Outfalls W01-W05 and W07-W14) are operating and maintained within the golf course. The depths of these wells range from 60 to 253 feet below ground surface (bgs). M1 continues to report increasing nitrogen levels starting in the late 1990s. Similarly, M4, M7, M8, and M9 have shown an increasing trend in nitrogen levels over the years.

In 2015, the Permittee conducted an investigation of rising nitrogen levels observed in MWs 1, 7, and 12. No specific point source was found. However, the investigation identified several factors that could be contributing to nitrogen in the groundwater. These potential sources include past use of property as a ranch, septic system use in the area, stormwater runoff, and surrounding hydrogeological influences. M6 was properly abandoned in 2015.

The site’s Reclaimed Water Management Plan (RWMP), formerly known as an Effluent Management Plan (EMP), was last reviewed and approved by the Division on June 9, 2021. The Technical, Compliance, and Enforcement (TCE) Branch of the Bureau of Water Pollution Control requires RWMPs be updated every ten (10) years.

Outfall Summary

Outfall SUM – This outfall is the reuse water supply from CCWRRF. It meets the standard for Category B reclaimed water quality per NAC 445A.276.

Outfall 001 – This external outfall is Pond 1 (Irrigation pond) where reuse water from CCWRRF first stored, located at the center of the facility by Hole 1 tee complex and part of Low irrigation zone.

Outfall 013 – This external outfall is Pond 13, located at the south end of facility and part of Carson City Booster irrigation zone.

Outfall 018 – This external outfall is Pond 18, located southwest of the Clubhouse and one of the Low irrigation zone source.

Outfall 11N – This external outfall is Pond 11 North; located south of the Pump station and northwest of Hole 11 tee complex, part of Carson City Booster irrigation zone.

Outfall 11S – This external outfall is Pond 11 South, located south of Pond 11 North and west of Hole 11 tee complex, part of Carson City Booster irrigation zone.

Outfall 15W – This external outfall is Pond 15 West, located northwest of Hole 15 tee complex, part of Carson City Booster irrigation zone.

Outfall 15E – This external outfall is Pond 15 East, located west of Hole 15 tee complex, part of Carson City Booster irrigation zone.

Outfall W01 – This monitoring well outfall is Monitoring Well 1 (M1), located next to City Well 46 and east of Hole 14 tee complex.

Outfall W02 – This monitoring well outfall is Monitoring Well 2 (M2), located northeast of Hole 12 tee complex and downstream of the City Well 48.

Outfall W03 – This monitoring outfall outfall is Monitoring Well 3 (M3), located north of the Clubhouse and downstream of Pond 1.

Outfall W04 – This monitoring well outfall is Monitoring Well 4 (M4), located southeast of Hole 8 tee complex and downstream of M14.

Outfall W05 – This monitoring well outfall is Monitoring Well 5 (M5), located southeast of Practice Range and cross-stream of well M3.

Outfall W07 – This monitoring well outfall is Monitoring Well 7 (M7), located downstream of Pond 13 at the north perimeter of Hole 13 tee complex.

Outfall W08 – This monitoring well outfall is Monitoring Well 8 (M8), located cross-stream of Pond 15 East and south perimeter of Hole 15 tee complex.

Outfall W09 – This monitoring well outfall is Monitoring Well 9 (M9), located downstream of Pond 13 and east of Hole 13 tee complex.

Outfall W10 – This monitoring well outfall is Monitoring Well 10 (M10), located north of Hole 11 tee complex and downstream of Pond 11 South.

Outfall W11 – This monitoring well outfall is Monitoring Well 11 (M11), located north of Hole 10 tee complex and downstream of Pond 18.

Outfall W12 – This monitoring well outfall is Monitoring Well 12 (M12), located at Hole 18 tee complex and upstream of Pond 18.

Outfall W13 – This monitoring well outfall is Monitoring Well 13 (M13), located at Hole 9 tee complex and downstream of M4.

Outfall W14 – This monitoring well outfall is Monitoring Well 14 (M14) located north at Hole 4 tee complex and the most upstream point of the facility.

Effluent Characterization

Nevada State Network Discharge Monitoring Report (NetDMR) data, as reported from April 2021 to December 2025, was reviewed as part of this permit renewal process. The long term average discharge flow rate for Outfall SUM was 0.64 Mgal/d. The permitted daily maximum discharge flow rate for Outfall SUM is 2.0 Mgal/d. There were no reported exceedances for this limit.

The CCWRRF provides secondary treated, denitrified, and disinfected reclaimed water which meets Category B bacteriologically quality standards per NAC 445A.276. Therefore, the reclaimed water should meet, at minimum, a daily maximum fecal coliform of 23 colony forming units (CFU)/100 mL and a 30-day geometric mean of 2.2 CFU/100 mL. The following average values were calculated from data collected in 2021-2025 discharge monitoring reports (DMRs):

Outfall SUM:

- Flow Rate (monthly): 0.64 Mgal/d
- Flow Rate (daily maximum): 0.89 Mgal/d
- Total Nitrogen (monthly): 13.0 mg/L
- Total Nitrogen (annual mass loading): 86.2 lb/year
- Fecal Coliform (daily maximum): 5.1 CFU/100 mL
- Fecal Coliform (30-day geometric mean): 1.3 CFU/100 mL

Dissolved oxygen (DO) is required to be reported for each pond. DO levels for all seven ponds averaged between 1.4 mg/L to 5 mg/L during the reporting period above.

Depth to water level below ground surface (bgs) is required to be reported for each monitoring well. Water level for all 13 wells averaged between 7 feet bgs to 57 feet bgs, where M13 as the shallowest and M1 as the deepest. The following monitoring wells all had total nitrogen levels that averaged below 7.0 mg/L: M3 through M5 and M10 through M14. M1 and M7 presented total nitrogen levels that averaged above 10.0 mg/L, while M2, M8, and M9 are in between.

Total dissolved solids (TDS) concentrations for M5 and M9 have been elevated historically and continue to average higher or equal to 1,000 mg/L during said reporting period. Moreover, TDS values for the rest of monitoring wells averaged between 110 mg/L to 960 mg/L; below the 1,000 mg/L limit for Profile 1.

Pollutants of Concern
Pollutants of concern are any pollutants or parameters that are believed to be present in the discharge and could affect or alter the physical, chemical, or biological condition of the receiving water. Common pollutants of concern for denitrified reclaimed water are fecal coliform and total nitrogen.

Receiving Water
Receiving water is groundwater of the State. Depth to groundwater measured from on-site monitoring wells ranges between 7 feet bgs to more than 57 feet bgs. Fluctuations in the water table can occur due to seasonal variations in precipitation, snow pack, and drought which affects the aquifer in the foothills of the Sierra Nevada.

Compliance History
Reported Fecal Coliform 30-day geometric mean was above the permitted value in 2022 (May and June) and July 2023, and the reported daily maximum Fecal Coliform was above the permitted value once (June 2022). These monitoring data were collected by CCWRRF and outside of the Permittee's control. Otherwise, the facility was in substantial compliance during the April 2020 to December 2025 reporting period.

Proposed Effluent Limitations
The discharge shall be limited and monitored by the Permittee as specified below:

Groundwater Monitoring Wells Table for Sample Location W01 (Monitoring Well 1) To Be Reported Annually

	Discharge Limitations			Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Chloride (as Cl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W01	Annual	DISCRT
Nitrogen, total	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W01	Annual	DISCRT
Solids, total dissolved	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W01	Annual	DISCRT
Water level relative to mean sea level[1]	Daily Maximum	M&R Feet (ft)		Groundwater	W01	Annual	DISCRT
Depth to water level ft below landsurface[2]	Daily Minimum	M&R Feet (ft)		Groundwater	W01	Annual	DISCRT

Notes (Groundwater Monitoring Wells Table):

1. Groundwater elevation (feet AMSL).
2. Depth to groundwater (feet).

Groundwater Monitoring Wells Table for Sample Location W02 (Monitoring Well 2) To Be Reported Annually

	Discharge Limitations			Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Chloride (as Cl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W02	Annual	DISCRT
Nitrogen, total	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W02	Annual	DISCRT
Solids, total dissolved	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W02	Annual	DISCRT
Water level relative to mean sea level[1]	Daily Maximum	M&R Feet (ft)		Groundwater	W02	Annual	DISCRT
Depth to water level ft below landsurface[2]	Daily Minimum	M&R Feet (ft)		Groundwater	W02	Annual	DISCRT

Notes (Groundwater Monitoring Wells Table):

1. Groundwater elevation (feet AMSL).
2. Depth to groundwater (feet).

Groundwater Monitoring Wells Table for Sample Location W03 (Monitoring Well 3) To Be Reported Annually

	Discharge Limitations			Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Chloride (as Cl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W03	Annual	DISCRT
Nitrogen, total	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W03	Annual	DISCRT
Solids, total dissolved	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W03	Annual	DISCRT
Water level relative to mean sea level[1]	Daily Maximum	M&R Feet (ft)		Groundwater	W03	Annual	DISCRT
Depth to water level ft below landsurface[2]	Daily Minimum	M&R Feet (ft)		Groundwater	W03	Annual	DISCRT

Notes (Groundwater Monitoring Wells Table):

1. Groundwater elevation (feet AMSL).
2. Depth to groundwater (feet).

Groundwater Monitoring Wells Table for Sample Location W04 (Monitoring Well 4) To Be Reported Annually

	Discharge Limitations			Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Chloride (as Cl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W04	Annual	DISCRT
Nitrogen, total	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W04	Annual	DISCRT
Solids, total dissolved	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W04	Annual	DISCRT
Water level relative to mean sea level[1]	Daily Maximum	M&R Feet (ft)		Groundwater	W04	Annual	DISCRT
Depth to water level ft below landsurface[2]	Daily Minimum	M&R Feet (ft)		Groundwater	W04	Annual	DISCRT

Notes (Groundwater Monitoring Wells Table):

1. Groundwater elevation (feet AMSL).
2. Depth to groundwater (feet).

Groundwater Monitoring Wells Table for Sample Location W05 (Monitoring Well 5) To Be Reported Annually

	Discharge Limitations			Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Chloride (as Cl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W05	Annual	DISCRT
Nitrogen, total	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W05	Annual	DISCRT
Solids, total dissolved	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W05	Annual	DISCRT
Water level relative to mean sea level[1]	Daily Maximum	M&R Feet (ft)		Groundwater	W05	Annual	DISCRT
Depth to water level ft below landsurface[2]	Daily Minimum	M&R Feet (ft)		Groundwater	W05	Annual	DISCRT

Notes (Groundwater Monitoring Wells Table):

1. Groundwater elevation (feet AMSL).
2. Depth to groundwater (feet).

Groundwater Monitoring Wells Table for Sample Location W07 (Monitoring Well 7) To Be Reported Annually

	Discharge Limitations			Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Chloride (as Cl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W07	Annual	DISCRT
Nitrogen, total	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W07	Annual	DISCRT
Solids, total dissolved	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W07	Annual	DISCRT
Water level relative to mean sea level[1]	Daily Maximum	M&R Feet (ft)		Groundwater	W07	Annual	DISCRT
Depth to water level ft below landsurface[2]	Daily Minimum	M&R Feet (ft)		Groundwater	W07	Annual	DISCRT

Notes (Groundwater Monitoring Wells Table):

1. Groundwater elevation (feet AMSL).
2. Depth to groundwater (feet).

Groundwater Monitoring Wells Table for Sample Location W08 (Monitoring Well 8) To Be Reported Annually

	Discharge Limitations			Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Chloride (as Cl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W08	Annual	DISCRT
Nitrogen, total	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W08	Annual	DISCRT
Solids, total dissolved	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W08	Annual	DISCRT
Water level relative to mean sea level[1]	Daily Maximum	M&R Feet (ft)		Groundwater	W08	Annual	DISCRT
Depth to water level ft below landsurface[2]	Daily Minimum	M&R Feet (ft)		Groundwater	W08	Annual	DISCRT

Notes (Groundwater Monitoring Wells Table):

1. Groundwater elevation (feet AMSL).
2. Depth to groundwater (feet).

Groundwater Monitoring Wells Table for Sample Location W09 (Monitoring Well 9) To Be Reported Annually

	Discharge Limitations			Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Chloride (as Cl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W09	Annual	DISCRT
Nitrogen, total	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W09	Annual	DISCRT
Solids, total dissolved	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W09	Annual	DISCRT
Water level relative to mean sea level[1]	Daily Maximum	M&R Feet (ft)		Groundwater	W09	Annual	DISCRT
Depth to water level ft below landsurface[2]	Daily Minimum	M&R Feet (ft)		Groundwater	W09	Annual	DISCRT

Notes (Groundwater Monitoring Wells Table):

1. Groundwater elevation (feet AMSL).
2. Depth to groundwater (feet).

Groundwater Monitoring Wells Table for Sample Location W10 (Monitoring Well 10) To Be Reported Annually

	Discharge Limitations			Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Chloride (as Cl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W10	Annual	DISCRT
Nitrogen, total	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W10	Annual	DISCRT
Solids, total dissolved	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W10	Annual	DISCRT
Water level relative to mean sea level[1]	Daily Maximum	M&R Feet (ft)		Groundwater	W10	Annual	DISCRT
Depth to water level ft below landsurface[2]	Daily Minimum	M&R Feet (ft)		Groundwater	W10	Annual	DISCRT

Notes (Groundwater Monitoring Wells Table):

1. Groundwater elevation (feet AMSL).
2. Depth to groundwater (feet).

Groundwater Monitoring Wells Table for Sample Location W11 (Monitoring Well 11) To Be Reported Annually

	Discharge Limitations			Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Chloride (as Cl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W11	Annual	DISCRT
Nitrogen, total	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W11	Annual	DISCRT
Solids, total dissolved	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W11	Annual	DISCRT
Water level relative to mean sea level[1]	Daily Maximum	M&R Feet (ft)		Groundwater	W11	Annual	DISCRT
Depth to water level ft below landsurface[2]	Daily Minimum	M&R Feet (ft)		Groundwater	W11	Annual	DISCRT

Notes (Groundwater Monitoring Wells Table):

1. Groundwater elevation (feet AMSL).
2. Depth to groundwater (feet).

Groundwater Monitoring Wells Table for Sample Location W12 (Monitoring Well 12) To Be Reported Annually

	Discharge Limitations			Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Chloride (as Cl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W12	Annual	DISCRT
Nitrogen, total	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W12	Annual	DISCRT
Solids, total dissolved	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W12	Annual	DISCRT
Water level relative to mean sea level[1]	Daily Maximum	M&R Feet (ft)		Groundwater	W12	Annual	DISCRT
Depth to water level ft below landsurface[2]	Daily Minimum	M&R Feet (ft)		Groundwater	W12	Annual	DISCRT

Notes (Groundwater Monitoring Wells Table):

1. Groundwater elevation (feet AMSL).
2. Depth to groundwater (feet).

Groundwater Monitoring Wells Table for Sample Location W13 (Monitoring Well 13) To Be Reported Annually

	Discharge Limitations			Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Chloride (as Cl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W13	Annual	DISCRT
Nitrogen, total	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W13	Annual	DISCRT
Solids, total dissolved	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W13	Annual	DISCRT
Water level relative to mean sea level[1]	Daily Maximum	M&R Feet (ft)		Groundwater	W13	Annual	DISCRT
Depth to water level ft below landsurface[2]	Daily Minimum	M&R Feet (ft)		Groundwater	W13	Annual	DISCRT

Notes (Groundwater Monitoring Wells Table):

1. Groundwater elevation (feet AMSL).
2. Depth to groundwater (feet).

Groundwater Monitoring Wells Table for Sample Location W14 (Monitoring Well 14) To Be Reported Annually

	Discharge Limitations			Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Chloride (as Cl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W14	Annual	DISCRT
Nitrogen, total	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W14	Annual	DISCRT
Solids, total dissolved	Daily Maximum		M&R Milligrams per Liter (mg/L)	Groundwater	W14	Annual	DISCRT
Water level relative to mean sea level[1]	Daily Maximum	M&R Feet (ft)		Groundwater	W14	Annual	DISCRT
Depth to water level ft below landsurface[2]	Daily Minimum	M&R Feet (ft)		Groundwater	W14	Annual	DISCRT

Notes (Groundwater Monitoring Wells Table):

1. Groundwater elevation (feet AMSL).
2. Depth to groundwater (feet).

Re-use Discharge Limitations Table for Sample Location Sum (External Outfall) To Be Reported Monthly

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Flow rate	Daily Maximum	<= 2.0 Million Gallons per Day (Mgal/d)[1]		Prior to Reuse	SUM	Continuous	METER
Flow rate	Monthly Average	M&R Million Gallons per Day (Mgal/d)[1]		Prior to Reuse	SUM	Continuous	METER
Nitrogen, total[2]	Daily Maximum		M&R Milligrams per Liter (mg/L)	Prior to Reuse	SUM	Monthly	DISCRT
Coliform, fecal general[2]	Daily Maximum		<= 23 Colony Forming Units per 100ml T (CFU/100mL)[3]	Prior to Reuse	SUM	Weekly	DISCRT
Coliform, fecal general[2]	30 Day Geometric Mean		<= 2.2 Colony Forming Units per 100ml T (CFU/100mL)[3]	Prior to Reuse	SUM	Weekly	DISCRT

Notes (Re-use Discharge Limitations Table):

1. Monthly application rates in the RWMP should be used as a guide.
2. Sample results may be obtained from CCWRRF (Permit NS0090008) and reported by the Permittee.
3. CFU/100 mL or MPN/100 mL.

Re-use Discharge Limitations Table for Sample Location Sum (External Outfall) To Be Reported Annually

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Nitrogen, total[1]	Annual Mass Loading[2]	M&R Pounds per Year (lb/yr)[2]		Beneficial Reuse	SUM	Annual	CALCTD

Notes (Re-use Discharge Limitations Table):

1. Annual nitrogen loading and use.
2. The total nitrogen applied (lbs/acre) shall not be greater than the total nitrogen uptake (lbs/acre). The calculations and/or monitoring shall include the total nitrogen in the applied wastewater (monitored by the treatment facility), total nitrogen from fertilizer applications, nitrogen uptake by crop, evapotranspiration rate, precipitation rate and fraction of applied nitrogen removed by denitrification and volatilization. An annual report shall be submitted on the fourth quarter of every year which demonstrates compliance with this limitation.

Ponds / Rapid Infiltration Basins for Sample Location 001 (Pond 1) To Be Reported Monthly

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Oxygen, dissolved (DO)	Monthly Average		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point	001	Monthly	DISCRT
Oxygen, dissolved (DO)	Monthly Minimum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point	001	Monthly	DISCRT

Ponds / Rapid Infiltration Basins for Sample Location 013 (Pond 13) To Be Reported Monthly

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Oxygen, dissolved (DO)	Monthly Average		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point	013	Monthly	DISCRT
Oxygen, dissolved (DO)	Monthly Minimum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point	013	Monthly	DISCRT

Ponds / Rapid Infiltration Basins for Sample Location 018 (Pond 18) To Be Reported Monthly

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Oxygen, dissolved (DO)	Monthly Average		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point	018	Monthly	DISCRT
Oxygen, dissolved (DO)	Monthly Minimum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point	018	Monthly	DISCRT

Ponds / Rapid Infiltration Basins for Sample Location 11N (Pond 11 North) To Be Reported Monthly

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Oxygen, dissolved (DO)	Monthly Average		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point	11N	Monthly	DISCRT
Oxygen, dissolved (DO)	Monthly Minimum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point	11N	Monthly	DISCRT

Ponds / Rapid Infiltration Basins for Sample Location 11S (Pond 11 South) To Be Reported Monthly

	Discharge Limitations			Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Oxygen, dissolved (DO)	Monthly Average		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point	11S	Monthly	DISCRT
Oxygen, dissolved (DO)	Monthly Minimum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point	11S	Monthly	DISCRT

Ponds / Rapid Infiltration Basins for Sample Location 15E (Pond 15 East) To Be Reported Monthly

	Discharge Limitations			Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Oxygen, dissolved (DO)	Monthly Average		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point	15E	Monthly	DISCRT
Oxygen, dissolved (DO)	Monthly Minimum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point	15E	Monthly	DISCRT

Ponds / Rapid Infiltration Basins for Sample Location 15W (Pond 15 West) To Be Reported Monthly

	Discharge Limitations			Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Oxygen, dissolved (DO)	Monthly Average		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point	15W	Monthly	DISCRT
Oxygen, dissolved (DO)	Monthly Minimum		M&R Milligrams per Liter (mg/L)	Internal Monitoring Point	15W	Monthly	DISCRT

Summary of Changes From Previous Permit
The following changes were done to maintain consistency with similar permitted facilities in Nevada:

- Chloride has been added as a required constituent for all monitoring wells.
- Discharge limitation base for both *Water level relative to mean sea level* and *Depth to water level ft below land surface* required for all Monitoring Wells are adjusted to "Daily Maximum" and "Daily Minimum" respectively.
- Discharge limitation base for *Nitrogen, total* required for Outfall SUM to be reported monthly is adjusted to "Daily Maximum".

In addition, the coordinates of the facility was adjusted to reflect the actual location of the golf course.

Technology Based Effluent Limitations
Technology based effluent limitations are not applicable to this permit.

Water Quality Based Effluent Limitations
Water quality based effluent limitations are not applicable to this permit.

Proposed Water Quality Based Effluent Limits (monthly/weekly/daily)
Water quality based effluent limitations are not applicable to this permit.

Basis for Effluent Limitations
There are currently no specific water quality standards that have been formally adopted by the State for groundwater. However, the Division has the discretion to implement effluent limitations outside water quality standards per NAC 445A.243, which states, “In establishing an effluent limitation to carry out the policy of this State set forth in Nevada Revised Statutes (NRS) 445A.305, consideration must be given to, but is not limited by the following: ... (2) the need for standards that specify by chemical, physical, biological or other characteristics the extent to which pollution by various substances will not be tolerated.”

Total nitrogen is required to be monitored due to the reclaimed water not being fully denitrified and to assist in the development of the Permittee's nitrogen loading limits. Similar elevated nitrogen level trends continue to be observed in monitoring wells 1 and 7, while 12 and 14 have recently shown decreasing levels of nitrogen throughout the last five years. The Permittee conducted a Nitrogen Investigation in 2016 and did not find any significant contributor to the high levels of nitrogen in the wells; however, the investigation provided some possible contributing factors:

- Septic Systems:
  High concentrations of septic systems in the Timberline, Coombs Canyon, and the Lakeview

subdivisions located in the foothills upgradient from the golf course are a potential contributor to nitrogen in wells on the valley floor. There are over 375 septic systems located on lots ranging from 0.4 acres to 1 acre upgradient from the golf course.

- Past Property Use:
  Waste disposal via an outhouse or septic tank or from feed lots from a ranch located in the area in the early to mid-part of the 1900's may be a source of residual nitrogen which could be contributing to elevated levels in monitoring wells 1 and 7.
- Existing Subsurface Conditions:
  Soil samples collected within a fifty foot radius of the groundwater monitoring wells showed a subsurface organic soil horizon with elevated nitrogen in the area northwest of monitoring well 1.
- Hydrogeological Influences:
  The golf course is located on an alluvial fan. Transport of upgradient nitrogen from septic tanks may be carried by subsurface flows to the golf course. Faulting in the area may also cause complex drainage patterns.
- Stormwater and Seasonal Runoff:
  Seasonal runoff and stormwater combined with high infiltration rates on the alluvial fan may further flush nitrogen contamination from upgradient septic tanks into the subsurface of the monitoring wells.

Fecal coliform and chloride are required to be monitored in order to assess the quality of reclaimed water being applied and for the protection of human health and the environment. Groundwater monitoring is required to ensure that the use of reclaimed water does not degrade groundwater of the State. Lastly, the presence of dissolved oxygen (DO) in ponds will help in keeping algae alive, thus preventing foul odor production and upseting customers and resident around the course.

Anti-backsliding
None of the proposed permit limits were changed to a less restrictive limit compared to those in the previous permit. No backsliding will be caused by changing limitation bases as it does not change the frequency of required reporting and allows for this permit to adhere to current Division reporting standards.

Antidegradation
The Division has developed an antidegradation regulation that is applied on a statewide basis, and which meets the statutory requirements of Nevada's water pollution control law found at Nevada Revised Statute (NRS) 445A.520 and NRS 445A.565 and is consistent with the federal antidegradation policy found at Title 40 in the Code of Federal Regulations (CFR) § 131.12. The objective of the Division's antidegradation regulation is to prevent degradation of Nevada's surface waters and maintain the unique attributes and special characteristics and water quality associated with high-quality waters. As this permit is for discharges to groundwater, and not surface water, the new antidegradation rule is not applicable.

Special Conditions
See Special Approvals / Conditions Table below:

SA – Special Approvals / Conditions Table

Item #	Description
1	Samples collected from monitoring wells shall be taken, and reported, during the third quarter each year.
2	The Permittee shall continue to submit all Discharge Monitoring Reports (DMRs) electronically through the Bureau of Pollution Control"s (BWPC) Nevada NetDMR system: https://netdmr.ndep.nv.gov/netdmr/public/home.htm

Discharges From Future Outfalls/ Planned Facility Changes
The Permittee does not anticipate any discharges from any future outfalls or any other changes to the facility.

Corrective Action Sites
There are two active Bureau of Corrective Actions (BCA) sites located within one-mile of the golf course. Both of these sites are for the release of gasoline from underground storage tanks and are not anticipated to impact this facility.

Wellhead Protection Program
The permitted facility is located within the 10-year capture zone, 3,000-foot radius Drinking Water Protection Areas (DWPAs) around seven Public Water System (PWS) wells owned by the Carson City Public Works. Additionally, the facility is located within the 10-year capture zone Wellhead Protection Area (WHPA) of those wells. Five of the PWS wells are located southwest and upgradient of the facility. One PWS well is located within the facility. Another well is located northeast and downgradient of the facility. Discharges from this facility are not anticipated to negatively impact the PWS wells.

Schedule of Compliance:

SOC – Schedule of Compliance Table

There are no Schedule of Compliance items

Deliverable Schedule:

DLV– Deliverable Schedule for Reports, Plans, and Other Submittals

Item #	Description	Interval	First Scheduled Due Date
1	Quarterly DMRs	Quarterly	7/28/2026
2	Annual DMRs	Annually	1/28/2027

Procedures for Public Comment:

The Notice of the Division's intent to issue a permit authorizing the facility to discharge to groundwater of the State of Nevada subject to the conditions contained within the permit, is being mailed to interested persons on our mailing list and will be posted on our website at https://ndep.nv.gov/posts. Anyone wishing to comment on the proposed permit can do so in writing until 5:00 P.M. **4/24/2026,** a period of 30 days following the date of the public notice. The comment period can be extended at the discretion of the Administrator.

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator of EPA Region IX or any interested agency, person or group of persons. The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted. Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determined to be appropriate. All public hearings must be conducted in accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

Proposed Determination:

The Division has made the tentative determination to issue/re-issue the proposed 5-year permit.

Prepared by: **Florida Nasategay**
Date: **3/20/2026**
Title: **Associate Engineer**

Legend

- Monitoring Wells
- Pump Stations
- Ponds

Irrigation Zone

- Carson City Booster
- High
- Low

Figure 1.4
Silver Oak Golf Course
Monitoring Well Location Map

0 500 1,000 2,000 3,000 Feet

N

1:8,400
1 inch = 700 feet

RCI Resource Concepts Inc

Document Path: R:\Projects\Silver_Oak_Golf_course\07_129_1\MXDs\wells_aerial_6_24_14.mxd