NEVADA DIVISION OF
ENVIRONMENTAL
PROTECTION

A division of the
Nevada Department of Conservation & Natural Resources

STATE OF NEVADA
Joe Lombardo, *Governor*
Vinson Guthreau, *Director*
Jennifer L. Carr, *Administrator*

901 S. Stewart Street, Suite 4001
Carson City, Nevada 89701
p: 775-687-4670 f: 775-687-5856
ndep.nv.gov

FACTSHEET
(pursuant to NAC 445A.236)

Permittee Name: NV ENERGY

6226 W SAHARA AVE M/S 30
LAS VEGAS, NV 89146

Permit Number: NS2003501

Permit Type: GROUNDWATER DISCHARGE

Designation: GROUNDWATER

New/Existing: EXISTING

Location: SILVERHAWK GENERATING STATION, CLARK
15111 APEX POWER PARKWAY M/S 49, LAS VEGAS, NV 89165
LATITUDE: 36.410694, LONGITUDE: -114.960750
TOWNSHIP: T18S, RANGE: R63E, SECTION: S5

Outfall / Well Num	Outfall / Well Name	Location Type	Well Log Num	Latitude	Longitude	Receiving Water
001	EVAPORATION POND A	External Outfall		36.408678	-114.960826	GROUNDWATER
002	EVAPORATION POND/SURGE POND B	External Outfall	86906	36.408936	-114.960322	GROUNDWATER
003	EVAPORATION POND C- BRINE CONCENTRATOR SURGE	External Outfall	85526	36.409112	-114.959852	GROUNDWATER
SUM	SUM OF 3 EVAPORATION PONDS	External Outfall		36.408678	-114.960826	NOT APPLICABLE

Permit History/Description of Proposed Action

The Permittee, NV Energy, has applied for renewal of groundwater discharge permit NS2003501 for the Silverhawk Generating Station (Silverhawk) located approximately 20 miles northeast of Las Vegas, in the Apex Industrial Park. The facility address is 15111 Apex Power Parkway, North Las Vegas, Clark County, Nevada. Access to the facility is via US-93/Great Basin Highway. The Permittee proposes to continue discharging process wastewater to three evaporation ponds located onsite.

This permit was first issued on November 20, 2001. The most recent permit was issued on July 1, 2021, and expired on June 30, 2026; the permit has been administratively continued since.

Facility Overview

Silverhawk is a natural-gas-fired combined cycle facility located in Clark County, Nevada, approximately 20 miles northeast of Las Vegas, with access from US-93 N/Great Basin Highway. The plant has a net generating capacity of roughly 580 megawatts and operates in a two-by-one combined cycle configuration consisting of two Siemens-Westinghouse combustion turbine generators (CTGs), two heat recovery steam generators (HRSGs) equipped with supplementary duct burners, and one steam turbine generator (STG).

Each CTG produces electrical power and supplies hot exhaust gas to its dedicated HRSG, with air intake supported by filtration and evaporative cooling systems.

The HRSGs convert exhaust gas heat into steam for the STG and are designed for maximum turbine exhaust conditions. Exhaust gases exit the HRSGs after passing through an oxidation catalyst and selective catalytic reduction system for carbon monoxide (CO), volatile organic compounds (VOCs), and nitrogen oxides (NOx) control. The facility rejects power-cycle heat through an air-cooled condenser supported by steam jet air ejectors and a closed-cycle auxiliary cooling system. Silverhawk’s primary water uses include boiler makeup, auxiliary cooling, and evaporative cooling for turbine inlet air. Groundwater from an on-site well supplies raw water needs, while recycled process water undergoes treatment for biological control, scaling, and corrosion. A reverse osmosis system provides demineralized water for boiler makeup, and both well water and demineralized water are used to supply the evaporative cooling systems.

Wastewater produced at the facility originates from several process streams, including auxiliary cooling tower blowdown, evaporative cooler discharge, and limited quantities of brine concentrate (BC) reject water. Additional low-volume wastewater sources include service water drains, general washdown flows, and effluent from the oil-water separator. All wastewater streams are routed through the BC, which is engineered to maximize internal water recovery and minimize off-site disposal requirements. Cooling tower salinity control is achieved by directing blowdown to the BC, where a thermal distillation process recovers approximately 95 percent of the influent water for reuse in plant systems. The remaining five percent consists of approximately two percent evaporative loss and three percent concentrated brine, which is discharged to Evaporation Ponds A and B. Each pond is a 0.8-acre, double-lined containment structure constructed with 80-mil primary and 60-mil secondary high density polyethylene (HDPE) geomembranes, equipped with leak-detection and leachate-recovery systems, and designed to receive batch discharges followed by service-water pipeline flushing.

A third double-lined impoundment—the Brine Concentrator Surge Pond (BCSP)—provides 0.9 acres of additional storage capacity when the BC is offline for maintenance or repair. The BCSP is constructed with a 30-mil XR-5 geomembrane liner system and includes an independent leak-detection and recovery layer. Pond B also functions as an auxiliary surge pond when required. Stored water in the surge ponds is pumped back to the BC for treatment and reuse, ensuring closed-loop management of process water. Ponds A and B are specifically engineered for long-term containment of BC-generated salt sludge, with a design operational life of 30 years, with the plant having been completed in 2004. Each pond has a storage capacity of 161,800 cubic feet (1.21 million gallons), providing a combined volume of 323,600 cubic feet (2.42 million gallons), sufficient to hold the projected 241,000 cubic feet of accumulated sludge.

The Permittee is also authorized to transfer water between evaporation ponds at the Silverhawk's evaporation ponds to either the Harry Allen Generating Station's evaporation ponds (permit NS0094000) or the Chuck Lenzie Generating Station's evaporation ponds (permit NS2001517). This permit does not allow the transfer of brine water.

The Silverhawk's Operation and Maintenance (O&M) Manual was last reviewed and approved on October 11, 2021. The Technical, Compliance, and Enforcement Branch, of the Bureau of Water Pollution Control, requires O&M Manuals be updated every ten (10) years, with an updated O&M Manual due on October 10, 2031.

Outfall Summary

Outfall 001 - This external outfall is for measuring and monitoring the untreated process wastewater being discharged to Evaporation Pond A.

Outfall 002 - This external outfall is for measuring and monitoring the untreated process wastewater being discharged to Evaporation Pond B.

Outfall 003 - This external outfall is for measuring and monitoring the brine wastewater being discharged to Evaporation Pond C - Brine Concentrator Surge.

Outfall 004 - This external outfall has been removed at the request of the Permittee as the Hyperloop is no

longer in business.

Outfall SUM - This SUM outfall is for the total flow rate of the process wastewater discharged to Outfalls 001 through 003.

Effluent Characterization
Nevada State Network Discharge Monitoring Report (NetDMR) data, as reported from January 2021 to December 2025, was reviewed as part of this permit renewal process. Silverhawk discharges its process wastewater to two lined evaporation ponds.

The following reported averages were taken from January 2021 to December 2025 reporting period:

Abbreviations:
TDS – Total Dissolved Solids
TPH – Total Petroleum Hydrocarbons
Gal/ac/day - Gallons per acre per day
mg/L – Milligrams per Liter
Mgal/d – Million Gallons per Day
S.U. – Standard Units

Outfall 001 (Evaporation Pond A):
Flow Rate: 0.006 Mgal/d
Freeboard: 11.92 Feet
Liner Leakage: No Discharge
Antimony: 0.11 mg/L*
Arsenic: 0.59 mg/L
Nickel: 0.21 mg/L
Oil and grease: 5.42*
pH: 7.82 S.U.
Selenium: 0.14 mg/L
TDS: 225,638 mg/L
Thallium: 0.01 mg/L
TPH: 6.30 mg/L
Zinc: 0.04 mg/L

Outfall 002 (Evaporation Pond B)
Flow Rate: 0.023 Mgal/d
Freeboard: 8.63 Feet
Liner Leakage: No discharge
Antimony: 0.01 mg/L*
Arsenic: 0.02 mg/L
Chromium: 0.01 mg/L
Copper: 0.01 mg/L
Oil and grease: 6,181 mg/L*
Nickel: 0.01 mg/L
pH: 8.61 S.U.
Selenium: 0.01 mg/L
TDS: 6,884 mg/L
Thallium: 0.01 mg/L
TPH: 4.72 mg/L
Zinc: 0.02 mg/L*

Outfall 003 (Evaporation Pond C):
Flow Rate: 0.017 Mgal/d
Freeboard: 6.04 feet

Liner Leakage: 4.39 Gal/ac/day
Antimony: 0.01 mg/L
Arsenic: 0.020 mg/L
Chromium: 0.01 mg/L
Nickel: 0.01 mg/L
Oil and grease: 1.48 mg/L
pH: 8.53 S.U.
Selenium: 0.01 mg/L
Thallium: 0.01 mg/L
TPH: 9.44 mg/L
TDS: 4,507 mg/L
Zinc: 0.02 mg/L

Outfall 004 (Hyperloop-One):
No Discharge was done during the period reviewed

Outfall SUM (for Outfalls 001, 002, 003 and 004):
Flow Rate: 0.046 Mgal/d

*With most of the reported periods being below detection.

For Outfall 001, the following parameters were below detection during the period reviewed – Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Silver, and Zinc.

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 process wastewater are Oil & grease, Specific conductance, TPH, and Profile 1 analytes.

Receiving Water
The double-lined evaporation ponds are designed to prevent any discharges; however, if leaks occur, the receiving water would be the groundwater of the State. The groundwater table in the area is approximately 686 feet below ground surface (bgs), based on reported static water levels measured in water supply wells onsite.

Compliance History
The facility was in compliance during the period reviewed (January 2021 to December 2025).

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

Zero Discharge Limitations Table for Sample Location Sum (Sum Of Outfalls 001-003 (3 Evaporation Ponds) To Be Reported Monthly

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Flow rate	Daily Maximum	<= 0.25 Million Gallons per Day (Mgal/d)		Effluent Gross	SUM	Continuous	METER
Flow rate	30 Day Average	M&R Million Gallons per Day (Mgal/d)		Effluent Gross	SUM	Continuous	METER

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

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Flow rate	30 Day Average	M&R Million Gallons per Day (Mgal/d)		Effluent Gross	001	Continuous	METER
Flow rate	Daily Maximum	M&R Million Gallons per Day (Mgal/d)		Effluent Gross	001	Continuous	METER
Freeboard	Daily Minimum		>= 2 Feet (ft)	Internal Monitoring Point[1]	001	Monthly	VISUAL
Flow rate	Daily Maximum	<= 400 Gallons per Day (gal/d) [2]		See Footnote	001	Continuous	CALCTD

Notes (Ponds / Rapid Infiltration Basins):

1. Staff Gauge
2. Pond Leak Detection - Based on 500 gallons per acre per day for a 0.80-acre pond.

Ponds / Rapid Infiltration Basins for Sample Location 001 (Evaporation Pond A) To Be Reported Quarterly

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Hydrocarbons, total petroleum	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross[1]	001	Quarterly	DISCRT
Oil & grease	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross[1]	001	Quarterly	DISCRT
pH, maximum	Daily Maximum		M&R Standard Units (SU)	Effluent Gross[1]	001	Quarterly	DISCRT
pH, minimum	Daily Minimum		M&R Standard Units (SU)	Effluent Gross[1]	001	Quarterly	DISCRT
Solids, total dissolved	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross[1]	001	Quarterly	DISCRT
Specific conductance	Daily Maximum		M&R Conductance-Micromhos per cm (uS/cm)	Effluent Gross[1]	001	Quarterly	DISCRT

Notes (Ponds / Rapid Infiltration Basins):

1. Samples shall be monitored in pond at a point distal to the inlet.

Ponds / Rapid Infiltration Basins for Sample Location 001 (Evaporation Pond A) To Be Reported Annually

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Alkalinity, bicarbonate (as CaCO3)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Alkalinity, total (as CaCO3)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Aluminum, dissolved (as Al)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Antimony, dissolved (as Sb)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Arsenic, dissolved (as As)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Barium, dissolved (as Ba)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Beryllium, dissolved (as Be)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Cadmium, dissolved (as Cd)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Calcium, dissolved (as Ca)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Chloride (as Cl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Chromium, dissolved (as Cr)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
			M&R				

Ponds / Rapid Infiltration Basins for Sample Location 001 (Evaporation Pond A) To Be Reported Annually

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Copper, dissolved (as Cu)	Daily Maximum		Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Fluoride, total (as F)[3]	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Iron, dissolved (as Fe)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Lead, dissolved (as Pb)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Magnesium, dissolved (as Mg)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Manganese, dissolved (as Mn)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Mercury, dissolved (as Hg)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Nitrite plus nitrate total 1 det. (as N)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Nitrogen, total	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Potassium, dissolved (as K)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Selenium, dissolved [as Se]	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
			M&R				

Ponds / Rapid Infiltration Basins for Sample Location 001 (Evaporation Pond A) To Be Reported Annually

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Silver, dissolved (as Ag)	Daily Maximum		Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Sodium, dissolved (as Na)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Sulfate, total (as SO4)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Thallium, dissolved (as Tl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Uranium, natural, total	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Cyanide, weak acid, dissociable	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT
Zinc, dissolved (as Zn)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Annual	DISCRT

Notes (Ponds / Rapid Infiltration Basins):

3. Sampling and analysis shall be conducted on the dissolved fraction.

Ponds / Rapid Infiltration Basins for Sample Location 002 (Evaporation Pond B) To Be Reported Monthly

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Flow rate	30 Day Average	M&R Million Gallons per Day (Mgal/d)		Effluent Gross	002	Continuous	METER
Flow rate	Daily Maximum	M&R Million Gallons per Day (Mgal/d)		Effluent Gross	002	Continuous	METER
Freeboard	Daily Minimum		>= 2 Feet (ft)	Internal Monitoring Point[1]	002	Monthly	DISCRT
Flow rate	Daily Maximum	<= 400 Gallons per Day (gal/d) [2]		See Footnote	002	Continuous	CALCTD

Notes (Ponds / Rapid Infiltration Basins):

1. Staff Gauge
2. Pond Leak Detection - Based on 500 gallons per acre per day for a 0.80-acre pond.

Ponds / Rapid Infiltration Basins for Sample Location 002 (Evaporation Pond B) To Be Reported Quarterly

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Hydrocarbons, total petroleum	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross[1]	002	Quarterly	DISCRT
Oil & grease	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross[1]	002	Quarterly	DISCRT
pH, maximum	Daily Maximum		M&R Standard Units (SU)	Effluent Gross[1]	002	Quarterly	DISCRT
pH, minimum	Daily Minimum		M&R Standard Units (SU)	Effluent Gross[1]	002	Quarterly	DISCRT
Solids, total dissolved	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross[1]	002	Quarterly	DISCRT
Specific conductance	Daily Maximum		M&R Conductance-Micromhos per cm (uS/cm)	Effluent Gross[1]	002	Quarterly	DISCRT

Notes (Ponds / Rapid Infiltration Basins):

1. Samples shall be monitored in pond at a point distal to the inlet.

Ponds / Rapid Infiltration Basins for Sample Location 002 (Evaporation Pond B) To Be Reported Annually

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Alkalinity, bicarbonate (as CaCO3)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Alkalinity, total (as CaCO3)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Aluminum, dissolved (as Al)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Antimony, dissolved (as Sb)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Arsenic, dissolved (as As)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Barium, dissolved (as Ba)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Beryllium, dissolved (as Be)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Cadmium, dissolved (as Cd)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Calcium, dissolved (as Ca)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Chloride (as Cl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Chromium, dissolved (as Cr)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
			M&R				

Ponds / Rapid Infiltration Basins for Sample Location 002 (Evaporation Pond B) To Be Reported Annually

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Copper, dissolved (as Cu)	Daily Maximum		Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Fluoride, total (as F)[3]	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Iron, dissolved (as Fe)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Lead, dissolved (as Pb)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Magnesium, dissolved (as Mg)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Manganese, dissolved (as Mn)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Mercury, dissolved (as Hg)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Nitrite plus nitrate total 1 det. (as N)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Nitrogen, total	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Potassium, dissolved (as K)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Selenium, dissolved [as Se]	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
			M&R				

Ponds / Rapid Infiltration Basins for Sample Location 002 (Evaporation Pond B) To Be Reported Annually

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Silver, dissolved (as Ag)	Daily Maximum		Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Sodium, dissolved (as Na)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Sulfate, total (as SO4)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Thallium, dissolved (as Tl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Uranium, natural, total	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Cyanide, weak acid, dissociable	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT
Zinc, dissolved (as Zn)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Annual	DISCRT

Notes (Ponds / Rapid Infiltration Basins):

3. Sampling and analysis shall be conducted on the dissolved fraction.

Ponds / Rapid Infiltration Basins for Sample Location 003 (Evaporation Pond C- Brine Concentrator Surge) To Be Reported Monthly

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Flow rate	30 Day Average	M&R Million Gallons per Day (Mgal/d)		Effluent Gross	003	Continuous	METER
Flow rate	Daily Maximum	M&R Million Gallons per Day (Mgal/d)		Effluent Gross	003	Continuous	METER
Freeboard	Daily Minimum		>= 2 Feet (ft)	Internal Monitoring Point[1]	003	Monthly	DISCRT
Liner Leakage Rate	Daily Maximum	<= 450 Gallons per Acre per Day (gal/acre/d)[2]		Effluent Gross	003	Monthly	CALCTD

Notes (Ponds / Rapid Infiltration Basins):

1. Staff Gauge
2. Pond Leak Detection - Based on 500 gallons per acre per day for a 0.90-acre pond.

Ponds / Rapid Infiltration Basins for Sample Location 003 (Evaporation Pond C- Brine Concentrator Surge) To Be Reported Quarterly

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Hydrocarbons, total petroleum	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross[1]	003	Quarterly	DISCRT
Oil & grease	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross[1]	003	Quarterly	DISCRT
pH, maximum	Daily Maximum		M&R Standard Units (SU)	Effluent Gross[1]	003	Quarterly	DISCRT
pH, minimum	Daily Minimum		M&R Standard Units (SU)	Effluent Gross[1]	003	Quarterly	DISCRT
Solids, total dissolved	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross[1]	003	Quarterly	DISCRT
Specific conductance	Daily Maximum		M&R Conductance-Micromhos per cm (uS/cm)	Effluent Gross	003	Quarterly	DISCRT

Notes (Ponds / Rapid Infiltration Basins):

1. Samples shall be monitored in pond at a point distal to the inlet.

Ponds / Rapid Infiltration Basins for Sample Location 003 (Evaporation Pond C- Brine Concentrator Surge) To Be Reported Annually

Discharge Limitations				Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Alkalinity, bicarbonate (as CaCO3)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Alkalinity, total (as CaCO3)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Aluminum, dissolved (as Al)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Antimony, dissolved (as Sb)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Arsenic, dissolved (as As)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Barium, dissolved (as Ba)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Beryllium, dissolved (as Be)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Cadmium, dissolved (as Cd)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Calcium, dissolved (as Ca)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Chloride (as Cl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Chromium, dissolved (as Cr)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
			M&R				

Ponds / Rapid Infiltration Basins for Sample Location 003 (Evaporation Pond C- Brine Concentrator Surge) To Be Reported Annually

	Discharge Limitations			Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Copper, dissolved (as Cu)	Daily Maximum		Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Fluoride, total (as F)[3]	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Iron, dissolved (as Fe)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Lead, dissolved (as Pb)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Magnesium, dissolved (as Mg)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Manganese, dissolved (as Mn)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Mercury, dissolved (as Hg)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Nitrite plus nitrate total 1 det. (as N)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Nitrogen, total	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Potassium, dissolved (as K)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Selenium, dissolved [as Se]	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
			M&R				

Ponds / Rapid Infiltration Basins for Sample Location 003 (Evaporation Pond C- Brine Concentrator Surge) To Be Reported Annually

	Discharge Limitations			Monitoring Requirements			
Parameter	**Base**	**Quantity**	**Concentration**	**Monitoring Loc**	**Sample Loc**	**Measurement Frequency**	**Sample Type**
Silver, dissolved (as Ag)	Daily Maximum		Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Sodium, dissolved (as Na)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Sulfate, total (as SO4)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Thallium, dissolved (as Tl)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Uranium, natural, total	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Cyanide, weak acid, dissociable	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT
Zinc, dissolved (as Zn)	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	003	Annual	DISCRT

Notes (Ponds / Rapid Infiltration Basins):

3. Sampling and analysis shall be conducted on the dissolved fraction.

Summary of Changes From Previous Permit

Under Outfalls 001, 002 and 003, To Be Reported Quarterly, the following changes were made:

CHANGED – Liner Leakage Rate, with a Daily Maximum Base, from a “Discrt” Sample Type to a “Meter” Sample Type. The remaining monitoring requirements were unchanged from the previous permit.

CHANGED – All parameters from an “Internal Monitoring Point” Monitoring Location to an “Effluent Gross” Monitoring Location, with the remaining parameters being unchanged from the previous permit.

DELETED – pH, with a “Value” Base.

ADDED – pH, maximum, with a “Daily Maximum” Base, a “<=9.50 Standard Units (S.U.)” Concentration, a “Effluent Gross” Monitoring Location, a “001/002/003” Sample Location (depending on outfall), and a “Quarterly” Measurement Frequency, and a “Discrt” Sample Type.

ADDED – pH, minimum, with a “Daily Minimum” Base, a “>=6.50 Standard Units (S.U.)” Concentration, a

“Effluent Gross” Monitoring Location, a “001/002/003” Sample Location (depending on outfall), and a “Quarterly” Measurement Frequency, and a “Discrt” Sample Type.

ADDED – Reservoir Storage, with an “Average” Base, a “M&R Millon Gallons (Mgal)” Quantity Unit, an “Effluent Gross” Monitoring Location, a “001” Sample Location, a “Twice per Month” Measurement Frequency, and a “Calctd” Sample Type. This parameter was added to be consistent with current Division reporting requirements for process wastewater evaporation ponds.

ADDED - Specific conductance, with a "Daily Maximum" Base, a "M&R Conductance-Micromhos per cm (u*S*/cm)" Concentration, a "Effluent Gross" Monitoring Location, a "001/002/003" Sample Location (depending on specific outfall), a "Quarterly" Measurement Frequency, and "Discrt" Sample Type.

Under Outfalls 001, 002, and 003, To Be Reported Annually, the following changes were made:

CHANGED – Heavy Metals, with a “Daily Maximum” Base, to a “Profile 1 Dissolved” Parameter list, with a “Daily Maximum” Base, a “M&R Milligrams per Liter” Concentration, an “Effluent Gross” Monitoring Location, a “001/002/003” Sample Location (depending on outfall), an “Annual” Measurement Frequency, and a “Discrt” Sample Type. This was updated based on current Division reporting requirements.

ADDED – Footnote 1.
1. Sampling and analysis shall be conducted on the dissolved fraction.

Under SOC – Schedule of Compliance Table the following item was changed:

CHANGED – Item 1.
From:
The Permittee shall submit for review and approval two copies of an updated
Operations and Maintenance (O&M) Manual. One copy should be a hard copy and the second should be an electronic copy. The O&M Manual shall be prepared by a Nevada Registered Professional Engineer or C.E.M. O&M Manuals prepared by a Nevada Registered Professional Engineer must be signed and stamped in accordance with NAC 625.610. If no updates or revisions are required, the Permittee shall submit a letter stating such by the due date noted.

To:
The Permittee shall submit two copies (one hard copy and one electronic copy) of an updated Operations and Maintenance (O&M) Manual for review and approval by the Division. The O & M Manual shall follow Division’s guidance document, WTS-2 Minimum Information Required for an Operation and Maintenance Manual, to be prepared by either a licensed, qualified Nevada professional engineer (P.E.) or a Certified Environmental Manager (C.E.M.).

Due Date: October 10, 2031

DELETED - Outfall 004, at the request of the Permittee, as the Hyperloop-One is no longer in business.

Under SA – Special Approvals / Conditions Table the following item was deleted:

DELETED – Item 4. Electronic submittal requirement.

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 Nevada Administrative Code (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.” The constituents listed in the parameters of concern have been vetted by the Division and have been included in groundwater discharge permits for many years as a means of regulating groundwater quality. Per NRS 445A.490, “No permit may be issued which authorizes any discharge or injection of fluids through a well into any waters of the State: (3) which would result in the degradation of existing or potential underground sources of drinking water.”

The requirement to monitor the effluent for Profile 1 analytes annually has been maintained to continue to evaluate the quality of the effluent and determine whether the effluent has potential to impact the receiving water.

Leak Detection Systems: based on information received from the Permittee, the leak detection system operates continuously by removing any leaked volume and recirculating it back into the receiving pond. The Permittee will continue to sample the pond contents to comply with the quarterly and annual sampling requirements.

Freeboard: The Division requires that a visual confirmation of the amount of freeboard (in feet) be done to deter any overtopping issues.

Oil & grease: The requirement to sample oil & grease has been maintained due to its ability to cause system damage, may have toxic heavy metals and benzene (which is of concern if there is a failure or leak and the wastewater reaches the groundwater).

The requirement to sample pH has been maintained, with a standard unit (S.U.) limit variation of 6.50 S.U. to 9.50 S.U., which can eliminate, or sharply reduce, hazardous acid handling at the plant. The use of advanced high-performance anti-scalants and polymer-based crystal modifiers allow cooling water systems to safely operate at those higher limits, without inducing calcium carbonate precipitation also.

Specific conductance: Is the general measure of a material's, or solution's, ability to conduct electricity, adjusted or normalized to a specific standard temperature. While specific conductance itself isn't directly a pollutant, it can be a useful indicator of potential water pollution or contamination. High specific conductance in the groundwater surrounding the Silverhawk can indicate the presence of dissolved minerals and ions, which can be detrimental to aquatic ecosystems and make the water unsuitable for human consumption or other uses.

TDS: The requirement to sample for TDS has been maintained for human health and environment. High levels of TDS can cause gastrointestinal distress, sodium overload (for individuals with high blood pressure or medical restricted low-sodium diets), and degrade drinking water. Environmental issues include crop damage and affected plant growth due to soil salinization. A 10,000 mg/L limit for nonprocess cooling water in a power generating station marks the operational boundary between brackish water and saline water.

TPH: The proposed permit retains the requirement to sample TPH which is a mixture of chemicals found in crude oil and petroleum products like gasoline, diesel, and motor oil.

Anti-backsliding
None of the proposed permit limits were changed to a less restrictive limit compared to those in the previous permit.

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 evaporation ponds, and not surface water, the new antidegradation rule is not applicable.

Special Conditions
See the Special Approvals / Conditions Table below:

SA – Special Approvals / Conditions Table

Item #	Description
1	The Permittee is authorized to transfer water between ponds at the Silverhawk Generating Station and evaporation ponds at the Chuck Lenzie Generating Station. This permit does not authorize the transfer of water from, or to, a pond used for brine discharge at Silverhawk Generating Station (Pond C).
2	The Permittee is authorized to transfer water between ponds at the Silverhawk Generating Station and evaporation ponds at the Harry Allen Generating Station. This permit does not authorize the transfer of water from, or to, a pond used for brine discharge at Silverhawk Generating Station (Pond C).

Discharges From Future Outfalls/ Planned Facility Changes
There are no planned future outfalls or facility changes.

Corrective Action Sites
There are no active Bureau of Corrective Actions (BCA) remediation sites located within a one-mile radius of this facility.

Wellhead Protection Program
The Silverhawk Generating Plant is a public water system (PWS #NV0000342). The PWS has one water supply well (W01). This PWS well is located approximately 730 feet northeast of the evaporation and brine ponds that are part of the permitted facilities. Another PWS, the Southern California Public Power Authority (SCPPA)'s Apex Generating Station (NV0002577), is located north of Silverhawk Generating Station. Apex has one PWS well (W01) located approximately 3,600 feet north northeast of the permitted facilities. The groundwater flow direction is generally to the southeast and the permitted facilities are approximately cross-gradient to the PWS wells. The permitted facilities are located within the 1000-foot radius Drinking Water Protection Area (DWPA) at Silverhawk which represents the 2-year capture zone of W01. The facilities are outside the 3,000-foot radius DWPA at Apex which represents the 10-year capture of the Apex well (W01). At Silverhawk, the top of the well screen is 1,240 feet below ground surface (bgs) and the static water level is approximately 680 feet bgs. At Apex, the top of the well screen is at 1,197 feet bgs and the static water level is approximately 750 feet bgs. The confined aquifer from which the wells are extracting groundwater is fractured limestone. The permitted discharge from Silverhawk will not affect the PWS wells given the depths of the well screens, the deep static water level, the confined nature of the aquifer and the construction of the lined ponds. Other PWSs are located south and southeast of Silverhawk at distances greater than 7,600 feet. No impacts to these PWS wells are likely.

Schedule of Compliance:

SOC – Schedule of Compliance Table

Item #	Description	Due Date
1	The Permittee shall submit two copies (one hard copy and one electronic copy) of an updated Operations and Maintenance (O&M) Manual for review and approval by the Division. The O & M Manual shall follow Division's guidance document, *WTS-2 Minimum Information Required for an Operation and Maintenance Manual,* to be prepared by either a licensed, qualified Nevada professional engineer (P.E.) or a Certified Environmental Manager (C.E.M.).	10/10/2031

Deliverable Schedule:

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

Item #	Description	Interval	First Scheduled Due Date
1	Quarterly DMRs	Quarterly	4/28/2027
2	Annual Report	Annually	1/28/2028

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. **12/5/2026,** a period of 30 days following the date of the public notice. The comment period can be extended at the discretion of the Administrator.

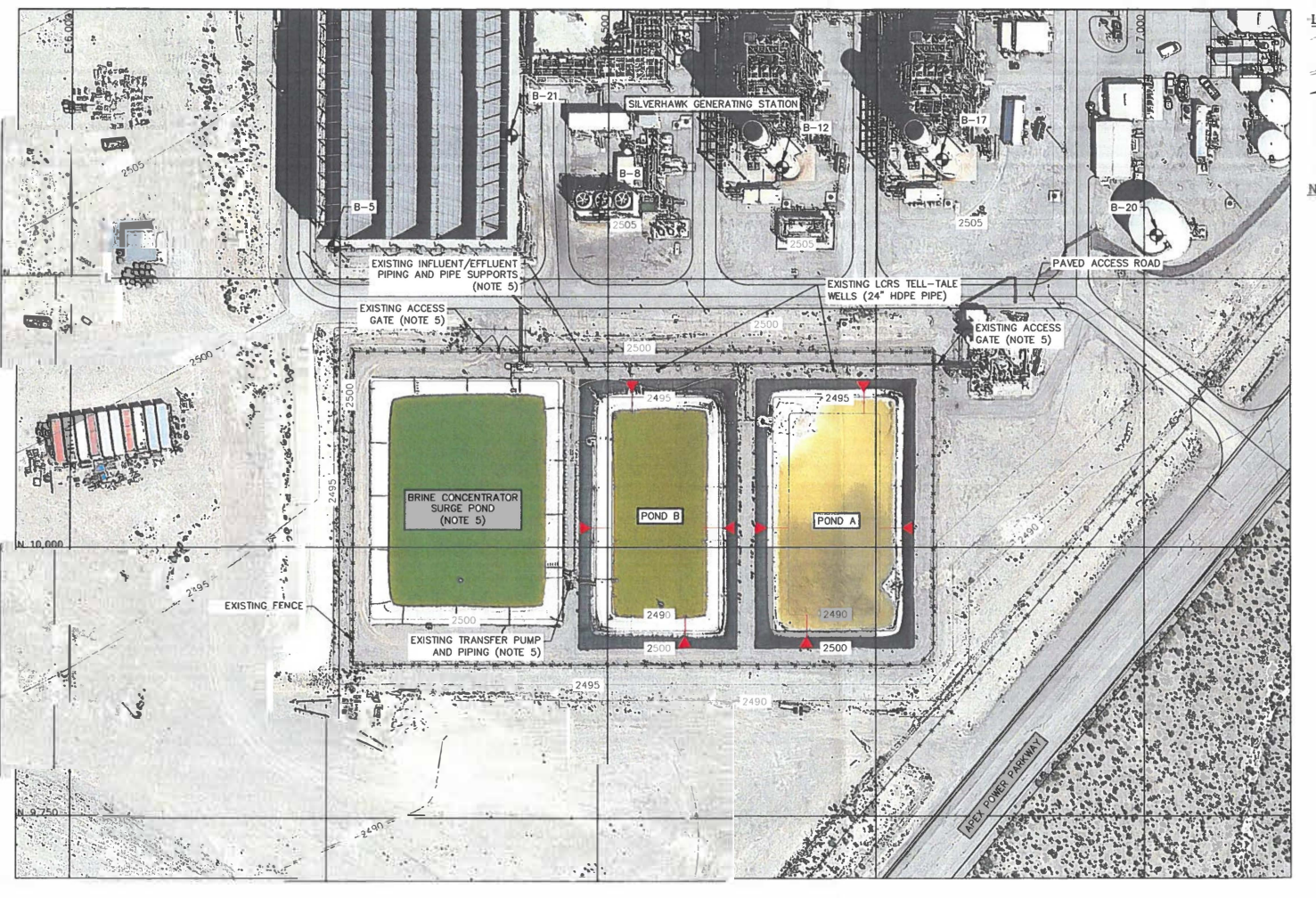
A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator of EPA Region IX or any interested agency, person or group of persons. The request must be filed within the comment period and must indicate 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: **Melissa Hanson**
Date: **10/29/2026**
Title: **Staff II Engineer**


SILVERHAWK GENERATING STATION
B-5
B-8
B-12
B-17
B-20
B-21
EXISTING INFLUENT/EFFLUENT PIPING AND PIPE SUPPORTS (NOTE 5)
EXISTING ACCESS GATE (NOTE 5)
EXISTING LCRS TELL-TALE WELLS (24" HDPE PIPE)
EXISTING ACCESS GATE (NOTE 5)
PAVED ACCESS ROAD
BRINE CONCENTRATOR SURGE POND (NOTE 5)
POND B
POND A
EXISTING FENCE
EXISTING TRANSFER PUMP AND PIPING (NOTE 5)
APEX POWER PARKWAY
N 10,000
N 9,750
E 6,000
E 7,000
2505
2500
2495
2490