



# STATE OF NEVADA

Department of Conservation & Natural Resources

Brian Sandoval, Governor

Leo M. Drozdzoff, P.E., Director

DIVISION OF ENVIRONMENTAL PROTECTION

Colleen Cripps, Ph.D., Administrator

## FACTSHEET (pursuant to NAC 445A.236)

**Permittee Name:** NEVADA COGENERATION ASSOC #1  
420 N. NELLIS BLVD, #A3-400  
LAS VEGAS, NV - 89110

**Permit Number:** NS0090049

**Location:** NEVADA COGENERATION ASSOCIATES GARNET VALLEY FACILITY (NCA #1), CLARK  
11401 US 91 AND 95, APEX INDUSTRIAL PARK, NELLIS AFB, NV - 89191  
LATITUDE: 36.342778, LONGITUDE: -114.922222  
TOWNSHIP: T18S, RANGE: R63E, SECTION: S34

Outfall / Well Num	Outfall / Well Name	Location Type	Well Log Num	Outfall City	Outfall State	Outfall Zip	Outfall County	Latitude	Longitude	Receiving Water
001	SOUTHERN EVAPORATION POND	External Outfall		LAS VEGAS	NV	89110	CLARK	36.342778	-114.922222	GROUNDWATER
002	NORTHERN EVAPORATION POND	External Outfall		LAS VEGAS	NV	89110	CLARK	36.342778	-114.922222	GROUNDWATER
003	DUST CONTROL	Internal Outfall		LAS VEGAS	NV	89110	CLARK	36.342778	-114.922222	GROUNDWATER
004	SAMPLING POINT	Internal Outfall		LAS VEGAS	NV	89110	CLARK	36.342778	-114.922222	GROUNDWATER
005	DISCHARGE TO EVAPORATION PONDS #1 AND #2	Sum		LAS VEGAS	NV	89110	CLARK	36.342778	-114.922222	GROUNDWATER
006	POND #1 AND #2 LEAK DETECTION	Sum		LAS VEGAS	NV	89110	CLARK	36.342778	-114.922222	GROUNDWATER

### General:

Nevada Cogeneration Associates (NCA) operates the Garnet Valley Cogeneration Facility (NCA #1) that is located approximately sixteen miles northeast of downtown Las Vegas, along U.S. I-15/93, in Clark County, Nevada. The cogeneration facility is fueled by natural gas and is rated at 85 megawatts (MW) of electrical generating capacity. At the facility, the natural gas fires three combustion turbines, and waste heat is recovered in a steam generator. NCA #1 supplies electricity to NV Energy and thermal energy (heat) to the adjacent Georgia-Pacific Plant. Surplus thermal heat from NCA #1 is used to calcine gypsum ore and dry wallboard product at the Georgia-Pacific Plant. NCA #1 uses two double-lined evaporation ponds with a combined area of 7.6 acres to contain all process waters discharged from the generation facility. Discharge water from the generation facility prior to the evaporation pond may also be delivered to businesses for dust control purposes. The authorized pond discharge daily maximum flow limit is 0.249 million gallons per day (MGD). The discharge of process waters is conducted in accordance with the Operations and Maintenance (O&M) Manuals submitted to the Nevada Division of Environmental Protection, Bureau of Water Pollution Control (BWPC).

The two double-lined evaporation ponds are designed to evaporate approximately 31.4 gallons per minute (gpm), based on net evaporation rate of 68.2 inches/year. The liquid waste stream from the NCA #1 facility is specified by design at 28.6 gpm and is comprised of inputs from cooling tower blowdown, boiler makeup water system spent regenerates, sidestream softener and filters, plant washdown water, and equipment drain sources. The ponds are lined with 60-mil HDPE (primary) and 60-mil HDPE (secondary) synthetic liner materials. Leakage from the primary liners is collected and routed to a leak detection sump, where leakage

flow rate is measured. The pond equilibrium depth in the southern pond is specified as 1.6 feet and the freeboard height as 3.9 feet. The pond equilibrium depth in the northern pond is specified as 1.7 feet and the freeboard height as 3.9 feet. The evaporation process concentrates the discharged salts (brine sludges), which are periodically removed for disposal to the Republic Services Landfill.

In the past, the Garnet Valley facility has provided dust suppression water from the cooling tower basin to neighboring mineral processing facilities. The dust suppression water has been used on haul roads where large mobile equipment and/or trucks are operating. According to NCA, the Garnet Valley facility is not currently supplying dust control fluid to other businesses.

All process water for the Garnet Valley Facility is supplied from three common supply wells located mid-way between the facility and its sister plant, NCA Black Mountain Facility (NCA #2), which is administered through NS0090050. The screened depth of the supply wells is reported as 600 feet below ground surface (bgs). The design supply rate of water to the Garnet Valley facility is 550 gpm. The bulk of the water supply is evaporated in the cooling towers and evaporation ponds. Approximately 100 gpm of raw water from the facility is chilled and exported to the neighboring wallboard plant as process make-up water.

#### **Discharge Characteristics:**

The NCA #1 process water includes water from the cooling tower blowdown, the sidestream softener and filters, the boiler makeup water spent regenerates, and the plant washdown water. The authorized pond discharge daily maximum flow limit is 0.249 million gallons per day (MGD).

#### **Receiving Water:**

The process water discharged from the NCA #1 facility is put into two double-lined evaporation ponds on the NCA #1 property and may be used for dust control at other businesses. The potential receiving water is groundwaters of the State of Nevada via percolation. Groundwater in the vicinity of the NCA #1 facility is reported to be approximately 608 feet below the ground surface.

#### **Summary of Changes From Previous Permit:**

Due to the new naming conventions at NDEP, Bureau of Water Pollution Control, the permit ID number has been changed from NEV90049 to NS0090049. This change does not reflect a change in the type of permit being issued. NEV and NS permits are for groundwater discharges to the State of Nevada. These are not to be confused with "NV" permits which are reserved for NPDES permitting.

To maintain consistency between this permit and other similar permits, the daily maximum Liner Leakage Rate has been increased from 40 gal/day/acre to 500 gal/day/acre in accordance with permit conditions stipulated in B.PB.13. The Liner Leakage Rate is now required to be reported monthly.

The permit issued in 2008 did not require the Permittee to report the amount of sludge taken from the evaporation pond to the Republic Services Landfill. The Permittee is now required to report this value to ensure that the Permittee meets the requirements for disposal to a landfill.

The original 8-acre evaporation pond on the NCA #1 property has been converted to two ponds with a combined surface area of 7.6 acres. Subsequently, the TDS and pH will now be reported for both the Northern and Southern evaporation ponds.

**NS OTHER - Discharge Limitations Table for Sample Location 003 (Internal Outfall) To Be Reported Monthly**

Parameter	Discharge Limitations			Monitoring Requirements			
	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Flow rate	Daily Maximum	M&R Gallons per Month (gal/mo)		Effluent Gross	003	Continuous	CALCTD
Flow rate	Monthly Average	M&R Gallons per Month (gal/mo)		Effluent Gross	003	Continuous	CALCTD

**NS OTHER - Discharge Limitations Table for Sample Location 004 (Internal Outfall) To Be Reported Quarterly<sup>[1]</sup>**

Parameter	Discharge Limitations			Monitoring Requirements			
	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Solids, total dissolved	Value		M&R Milligrams per Liter (mg/L)	Effluent Gross	004	Quarterly	DISCRT
pH	Value		M&R Standard Units (SU)	Effluent Gross	004	Quarterly	DISCRT

Notes (NS OTHER - Discharge Limitations Table):

1. Sampling Point is located in Pump House.

**NS OTHER - Discharge Limitations Table for Sample Location 004 (Internal Outfall) To Be Reported Semi Annually<sup>[1]</sup>**

Parameter	Discharge Limitations			Monitoring Requirements			
	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Zinc, total (as Zn)	Value		M&R Milligrams per Liter (mg/L)	Effluent Gross	004	Semiannual	DISCRT
Antimony, total (as Sb)	Value		M&R Milligrams per Liter (mg/L)	Effluent Gross	004	Semiannual	DISCRT
Arsenic, total (as As)	Value		M&R Milligrams per Liter (mg/L)	Effluent Gross	004	Semiannual	DISCRT
Beryllium, total (as Be)	Value		M&R Milligrams per Liter (mg/L)	Effluent Gross	004	Semiannual	DISCRT
Cadmium, total (as Cd)	Value		M&R Milligrams per Liter (mg/L)	Effluent Gross	004	Semiannual	DISCRT
Chromium, total (as Cr)	Value		M&R Milligrams per Liter (mg/L)	Effluent Gross	004	Semiannual	DISCRT
Copper, total (as Cu)	Value		M&R Milligrams per Liter (mg/L)	Effluent Gross	004	Semiannual	DISCRT
Lead, total (as Pb)	Value		M&R Milligrams per Liter (mg/L)	Effluent Gross	004	Semiannual	DISCRT
Mercury, total (as Hg)	Value		M&R Milligrams per Liter (mg/L)	Effluent Gross	004	Semiannual	DISCRT
Nickel, total (as Ni)	Value		M&R Milligrams per Liter (mg/L)	Effluent Gross	004	Semiannual	DISCRT
Selenium, total (as Se)	Value		M&R Milligrams per Liter (mg/L)	Effluent Gross	004	Semiannual	DISCRT
Silver, total (as Ag)	Value		M&R Milligrams per Liter (mg/L)	Effluent Gross	004	Semiannual	DISCRT

**NS OTHER - Discharge Limitations Table for Sample Location 004 (Internal Outfall) To Be Reported Semi Annually<sup>[1]</sup>**

Parameter	Discharge Limitations			Monitoring Requirements			
	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	S a m p l e Type
Thallium, total (as Tl)	Value		M&R Milligrams per Liter (mg/L)	Effluent Gross	004	Semiannual	DISCRT

Notes (NS OTHER - Discharge Limitations Table):

1. Sampling Point is located in Pump House.

**NS OTHER - Discharge Limitations Table for Sample Location 006 (Sum) To Be Reported Monthly**  
 [1][2]

Parameter	Discharge Limitations			Monitoring Requirements			
	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Liner Leakage Rate	Daily Maximum	<= 500 Gallons per Acre per Day (gal/acre/d)		Internal Monitoring Point	006	Monthly	METER

Notes (NS OTHER - Discharge Limitations Table):

1. Internal Monitoring Point is the Leak Detection Sump.
2. The action leakage rate schedule can be found in B.PB.13.4. of the permit.

**Ponds / Rapid Infiltration Basins for Sample Location 001 (External Outfall) To Be Reported Quarterly<sup>[1]</sup>**

Parameter	Discharge Limitations			Monitoring Requirements			
	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	S a m p l e Type
pH	Value		M&R Standard Units (SU)	Effluent Gross	001	Quarterly	COMPOS
Solids, total dissolved	Value		M&R Milligrams per Liter (mg/L)	Effluent Gross	001	Quarterly	COMPOS

Notes (Ponds / Rapid Infiltration Basins):

1. A composite sample shall be obtained by combining equal volumes of liquid taken from each corner of the evaporation pond.

**Ponds / Rapid Infiltration Basins for Sample Location 002 (External Outfall) To Be Reported Quarterly<sup>[1]</sup>**

Parameter	Discharge Limitations			Monitoring Requirements			
	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	S a m p l e Type
pH	Value		M&R Standard Units (SU)	Effluent Gross	002	Quarterly	COMPOS
Solids, total dissolved	Value		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Quarterly	COMPOS

Notes (Ponds / Rapid Infiltration Basins):

1. A composite sample shall be obtained by combining equal volumes of liquid taken from each corner of the evaporation pond

**Ponds / Rapid Infiltration Basins for Sample Location 005 (Sum) To Be Reported Monthly**

Parameter	Discharge Limitations			Monitoring Requirements			
	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Flow rate	Daily Maximum	<= 0.249 Million Gallons per Day (Mgal/d)		Effluent Net	005	Continuous	METER
Flow rate	30 Day Average	M&R Million Gallons per Day (Mgal/d)		Effluent Net	005	Continuous	METER

**Rationale for Permit Requirements:**

*Flow:* Influent flow to the evaporation pond is monitored via flow meters. The volume of dust control water supplied from the NCA #1 facility is also monitored. This monitoring ensures appropriate water level in the pond and that the water is not over applied when used for dust control.

*Total Dissolved Solids (TDS):* The pond water and the water disbursed for dust control purposes are sampled quarterly for Total Dissolved Solids. This parameter is monitored to assess the appropriateness of the water for dust control purposes and to gain information on pond supernatant quality should a catastrophic leak in the liner system occur.

*pH:* The pond water and the water disbursed for dust control purposes are sample quarterly for pH. This parameter is monitored to assess the appropriateness of the water for dust control purposes and to gain information on pond supernatant quality should a catastrophic leak in the liner system occur.

*Metals:* The water disbursed to the evaporation pond and for dust control purposes is sampled semi-annually for thirteen Profile I metals (i.e., Sb, As, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Tl, and Zn). These parameters are monitored to assess the appropriateness of the water for dust control purposes and to gain information on pond supernatant quality should a catastrophic leak in the liner system occur.

*Liner Leakage Rate:* On a monthly basis, the evaporation pond sump is pumped and totalized. This will allow the Permittee and the Division to determine if excess leakage is present, and ensures that appropriate liner repairs are made on a timely basis.

*Sludge:* On a monthly basis, the process sludge is dewatered and trucked to the Republic Services Landfill. The weight of sludge removed and taken to the landfill is totaled and allows the Division to ensure that the Permittee meets the requirements for disposal to a landfill.

**Special Conditions:**

See Special Approvals/Conditions Table.

SA – Special Approvals / Conditions Table

Item #	Description
1	The Permittee shall report the amount of sludge (tons) sent to the Republic Services Landfill each month. This information can be submitted with the Quarterly DMRs.
2	Under Condition B.PB.7.2, an appropriate gauge must be used to determine water depth. NCA is currently using an ultrasonic gauge to determine the pond depths.

Item #	Description
3	Condition B.PB.8.1 applies when the permitted pond inflow rate first equals or exceeds 85% of the 0.249 MGD daily maximum flow.
4	Condition B.PB.10. does not apply to this permit. The freeboard requirement for the ponds is 2 feet in accordance with Fetch Analysis approved by NDEP.
5	Under condition C.31.1.1 the Plant Manager shall be considered the authorized representative for this facility.

**Flow:**

Flow to the two evaporation ponds is limited to a daily maximum sum of 0.249 MGD.

**Corrective Action Sites:**

There are no Bureau of Corrective Actions (BCA) remediation sites located within one (1) mile of this facility.

**Wellhead Protection Program:**

This facility is located within the 1000-foot Drinking Water Protection Area of the Georgia Pacific Corporation water well. The facility is not within an established Wellhead Protection Area.

**Schedule of Compliance:**

SOC – Schedule of Compliance Table

Item #	Description	Due Date
1	Within 60 days of permit issuance, the Permittee shall submit two copies of a revised Water Load-out Facility Operations and Maintenance (O&M) Manual, signed by a Professional Engineer or other qualified person, for Division review and approval. If there have been no changes to the existing Water Load-out Facility O&M Manual, the Permittee shall submit a letter stating so.	8/29/2014
2	Within 60 days of permit issuance, the Permittee shall submit two copies of a revised Evaporation Pond Operations and Maintenance (O&M) Manual, signed by a Professional Engineer or other qualified person, for Division review and approval. If there have been no changes to the existing Evaporation Pond O&M Manual, the Permittee shall submit a letter stating so.	8/29/2014

**Deliverable Schedule:**

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

Item #	Description	Interval	First Scheduled Due Date
1	Quarterly DMRs	Quarterly	10/28/2014
2	Semi Annual DMRs	Semi Annually	1/28/2015
3	Annual Report	Annually	1/28/2015

**Procedures for Public Comment:**

The Notice of the Division's intent to reissue a permit authorizing the facility to discharge to groundwater of the State of Nevada subject to the conditions contained within the permit, is being sent to the **Las Vegas Review Journal** for publication. The notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing until 5:00 P.M. **4/29/2014**, 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 to 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: **Briana Johnson**

Date: **3/26/2014**

Title: **Environmental Scientist**