

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
FACT SHEET
(Pursuant to NAC 445A.236)

Permittee Name: Nevada Department of Corrections
3955 W. Russell Rd.
Las Vegas, NV 89118-2316

Permit Number: NEV87066

Location: Carlin Conservation Camp
124 Suzy Creek Way
Carlin, Nevada 89822 (Elko County)
Camp Location (former Carlin Airfield):
Latitude: 40° 43' 39" N, Longitude: 116° 05' 00"W
Township 33N, Range 52E, SW¼ of Section 24

Wellhead Protection Area: The leach field disposal area for this camp's septic system is located within the 1,000 feet, Drinking Water Protection Area 2, of a Non-Transient, Non-Community supply well for the camp. This well is owned and operated by the Nevada Department of Corrections. The wellhead capture zone for this supply well has not been delineated (modeled) and input into the NDEP i-Map application. For the future upgrade, the existing disposal area will remain in-place.

General: NDEP received an application to renew and modify this discharge permit on 10/04/06. Preliminary plans to upgrade the existing septic system with a denitrifying lagoon, patterned after the Humboldt Conservation Camp (#NEV94016), were received on 5/3/06. The Nevada Department of Corrections (NDOC) operates the Carlin Conservation Camp (CCC) located 0.2 mile north of U.S. I-80 and 1.5 miles northeast of Carlin. CCC is a minimum-security camp housing 150 male inmates with staffing by 12 NDOC and 10 Division of Forestry personnel. The existing wastewater treatment system includes a 2,250-gallon grease interceptor, 24,000-gallon septic tank battery, 3,000-gallon dosing tank and two leach fields. Due to elevated groundwater nitrate levels down gradient of the leach fields, NDOC has planned eventual replacement of the septic system with a denitrifying lagoon. This prototype denitrifying lagoon system is now operational at the Humboldt Camp having commenced operation in the 4th Quarter '06. Plans are to upgrade the Carlin and Wells Camp septic systems, in this order, with this system. The Humboldt Camp's treatment lagoon is HDPE-lined with dimensions of 94' (L) × 70' (W) × 7' (operating depth). The lagoon is partially-baffled with a concrete divider wall and aerated with three 5-HP pontoon-float aerators (aspirators). The baffle wall serves to maintain elliptical flow in the lagoon and create partial anoxic and aerobic zones. Each 24 hour cycle, tertiary treatment occurs via a 20-hr cycling of on-off aeration steps followed by 2 hours solids settling and completed with 2 hours effluent decant. Decant occurs at nighttime when camp activities are restricted and lower flow occurs. Solids are wasted to the decommissioned tank battery with offsite disposal by a septage haul truck. Decanted effluent is pumped to an effluent lift station, which then doses the leach fields. Prior to implementation of this design at the Carlin Camp, NDOC must submit and receive final approval on a 100% design plan specific for the Carlin Honor Camp. On 3/19/08, NDEP sampled the Humboldt effluent and noted levels of: CBOD₅ – 4 mg/l, TSS – 25 mg/l, TN – 10.1 mg/l and pH – 8.2 mg/l.

Flow: The Carlin Honor Camp does not currently measure the influent or effluent flow. Previously, flow was reported with a potable water meter, which is now inoperable. For reporting wastewater flow, the potable water meter is inaccurate especially when water trucks (e.g., firefighting) are filled or outdoor irrigation occurs since the flow limit addresses indoor usage only. In the Humboldt design, flow can be tracked via pump timers at either influent or effluent lift stations (in practice, influent flow is reported). For honor camps, NDOC typically budgets an indoor water usage of 125 GPD/inmate. The preliminary design plan for the Carlin Camp indicates a flow limit of 0.021 / 0.032 MGD, similar to Humboldt, which is designed for the same inmate and staffing capacity. The existing septic system at Carlin is rated for 0.024 MGD. Presently, Carlin is housing 135 inmates. Using NDOC water usage figures, NDEP estimates a daily average flow of 0.017 MGD of primary effluent disposal to the leach fields. This value will decrease slightly in summer with lagoon surface evaporation.

Receiving Water Characteristics: There are two monitoring wells installed at this location. MW-S is located 230 ft south of the disposal area and exhibits groundwater depth of 36½ ft. MW-E is located 230 ft east of the leach fields and exhibits groundwater depth of 35 ft. Groundwater flows south towards the Humboldt River located 0.8 mile from the camp. The current nitrate limit (10 mg/l) is triggered in MW-S (currently 18 mg/l, 2nd Quarter '08; and peaked at 26 mg/l, 1st Quarter '06). The current nitrate level in MW-E is 8.9 mg/l (2nd Quarter '08), and this well would be considered cross-gradient to the plume's direction of travel.

DMR Analysis: Influent quality at Carlin is not monitored but is considered normal domestic strength wastewater based on an NDEP observation at Humboldt. Existing effluent quality is primary, e.g., approximately 35% BOD and 50% TSS removal in the septic system, which is equivalent to approximately 190 mg/l BOD₅ and 60 mg/l TSS in the effluent. The denitrifying lagoon design criteria are tertiary, e.g. 85% BOD₅/TSS removal equivalent to 30/30/10 mg/l (30-day average), respectively, for effluent BOD₅/TSS/TN.

Rationale for Permit Requirements: Upon startup of the denitrifying lagoon (i.e., activated sludge system), a Grade III certified operator is required in NAC 445A.289. Primary treatment presently requires a Grade I certification. In practice, a Grade IV certified operator operates this facility on a contract basis. The Humboldt inspection determined that minor daily upkeep is required, e.g., decant well skimming, and this task was assigned to a camp trustee. While the septic system is in use, NDEP requires the tank levels to be monitored and pumped when combined sludge and scum ≥ 50% of operating depth to maintain leach field integrity.

Proposed Effluent Limitations and Special Conditions:**Table 1: Plant Discharge Limitations (Septic System)¹**

PARAMETER	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	30-Day Average	Daily Maximum	Measurement Frequency	Sample Type
Flow, MGD (Influent)	0.024		Continuous	Potable Flow Meter
BOD ₅ , mg/L (Effluent)		M&R	Twice/Year ³	Discrete
TSS, mg/L (Effluent)		M&R	Twice/Year ³	Discrete
pH, Std. Units (Effluent)		M&R	Twice/Year ³	Discrete
Scum, Sludge & Liquid Level Depths, feet or inches (Each Compartment) ²		M&R	Twice/Year ³	Discrete

1. Limits in Table 1 apply until the denitrifying lagoon is operational.
2. Pump septic tank when scum + sludge level \geq 50% of the compartment's overall operating depth.
3. Annual sampling period occurs in the second and fourth quarters.

Table 2: Plant Discharge Limitations (Denitrifying Lagoon)¹

PARAMETER	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	30-Day Average	Daily Maximum	Measurement Frequency	Sample Type
Flow, MGD (Influent)	0.021	0.032	Continuous	Flow Meter
BOD ₅ , mg/L (Effluent)		45	Quarterly	Discrete
TSS, mg/L (Effluent)		45	Quarterly	Discrete
Total Nitrogen as N, mg/l (Effluent)		10	Quarterly	Discrete
pH, Std. Units (Effluent)		6.0 – 9.0	Quarterly	Discrete

1. Limits in Table 2 apply when the denitrifying lagoon upgrade is operational.

Table 3: Groundwater Monitoring (MW-S, E)

PARAMETER	GROUNDWATER LIMITATIONS	MONITORING REQUIREMENTS	
		Measurement Frequency	Sample Type
TDS, mg/L	Monitor & Report	Quarterly	Discrete
Chlorides, mg/L	Monitor & Report	Quarterly	Discrete
Nitrate as N, mg/L	Monitor & Report	Quarterly	Discrete
Total Nitrogen as N, mg/L	10.0	Quarterly	Discrete
Depth to Groundwater, ft	Monitor & Report	Quarterly	Field Measurement
Groundwater Elevation, ft	Monitor & Report	Quarterly	Field Measurement

1. Groundwater samples shall be taken after purging at least three (3) well volumes of groundwater from the monitoring wells.

Schedule of Compliance: Prior to construction of the denitrifying lagoon upgrade, 100% design plans must be submitted for review and approval. Afterwards, design completion shall be documented with a CQA letter; as-built plan set and updated O&M. Thus, the following items are required for submittal (**all compliance deliverables shall be addressed to the attention of the Compliance Coordinator, Bureau of Water Pollution Control**):

- Prior to construction of the denitrifying lagoon, the Permittee shall submit a copy of the 100% (final) design plans wet stamped and signed by a Nevada Professional Engineer (P.E.).
- The Permittee shall notify the Division in writing not more than fourteen (14) calendar days following startup of the denitrifying lagoon.
- Within thirty (30) days of startup of the denitrifying lagoon, the Permittee shall submit a copy of the engineer's Construction Quality Assurance (CQA) letter indicating that the treatment facility was installed in accordance with the approved design plan. The CQA letter shall be wet stamped and signed by a Nevada Professional Engineer (P.E.).
- Within thirty (30) days of startup of the denitrifying lagoon, the Permittee shall submit a copy of the as-built design plan wet stamped and signed by a Nevada Professional Engineer (P.E.).
- Within ninety (90) days of startup of the denitrifying lagoon, the Permittee shall submit an updated copy of the Operations & Maintenance (O&M) Manual, prepared in accordance with the Division's WTS-2 guidance: *Minimum Information Required for an Operations and Maintenance Manual*. The updated O&M Manual shall be prepared by a Nevada

Professional Engineer (P.E.) or a Nevada certified wastewater operator (Grade III or higher).

Quarterly Progress Report: Until the new denitrifying lagoon upgrade is funded, designed and constructed at Carlin, the facility will be required to submit a quarterly update in its DMR report advising the Division of the progress to complete the facility improvements.

Procedures for Public Comment: The Notice of the Division's intent to issue this renewal and modification discharge permit for the Carlin Honor Camp WWTF, subject to the conditions contained within the permit is being sent to the **Elko Daily Free Press** for publication. The notice is also being posted on the Division's website for public notices and e-mailed to interested parties on the Division's Public Notice receipt notification list. Anyone wishing to comment on the proposed permit can do so in writing for a period of thirty (30) days following the date of publication of the public notice in the newspaper. The comment period can be extended at the discretion of the Administrator. The deadline date and time by which all comments are to be submitted (via postmarked mail or time-stamped faxes, e-mails, or hand-delivered items) to the Division is **Monday, January 12, 2009, by 5:00 P.M.**

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator 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 determines 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 the proposed discharge permit for a period of five (5) years.

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Bureau of Water Pollution Control

Date: December 8, 2008