

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

**Permittee Name:** Clark County Real Property Management  
500 Grand Central Pkwy  
Las Vegas, NV 89155

**Permit Number:** NEV2003510

**Location:** Spring Mountain Youth Camp  
Angel Peak Rd, Clark Co (25 mi WNW of Las Vegas)  
Mt. Charleston Recreation Area (Toiyabe National Forest)

Mailing Address:  
HCR 38, Box 252  
Las Vegas, NV 89124

Leach Field:  
Latitude: 36° 19' 0" N, Longitude: 115° 35' 20" W  
Elevation: 8,300 ft ASL  
Township 19S, Range 57E, Section 9

**Corrective Actions Sites:** There is no Bureau of Corrective Actions remediation site located within a one-mile radius of the camp's leach field.

**Wellhead Protection Area:** The camp's leach field is not located within 6,000 ft of a Drinking Water Protection Area (DWPA #4) or a wellhead capture zone for any public supply well.

**General:** Clark County operates the Spring Mountain Youth Camp as a low-security juvenile correctional facility with a stated occupancy level of 100 juvenile offenders. Facilities are sited atop Angel Peak, which formerly operated as a USAF radar station. The on-site domestic wastewater treatment and disposal system consists of a settling (septic) tank; nitrogen reduction facility (recycle tank), dosing tank, Alternating Intermittent Re-circulating Reactor (AIRR) and subsurface disposal field (five leach fields). Partial nitrogen removal (denitrification) occurs in the recycle tank by contacting a proportioned amount of raw sewage (carbon source) and AIRR effluent (nitrate source). NDEP notes the existing system is not capable of full denitrification to meet an effluent nitrogen level of  $\leq 10$  mg/l. Over the five-year permit cycle, the operations staff indicated AIRR media (e.g., graded gravel) clogging issues resulting in reduced system performance, which the Division observed firsthand on the last compliance inspection, dated 5/9/07. With reduced AIRR bed drainage, nitrification and denitrification can be problematic, and NDEP has been notified an engineer's evaluation (G.C. Wallace Co.) is being investigated for potential media replacement. The on-site wastewater treatment system is supervised weekly under contract by a Grade 4 certified operator with a monthly sampling schedule. Daily oversight of the facilities is provided by the Clark County Real Property Management.

**Flow:** Effluent flow is calculated by pumping time measurement and averaged 8,400 GPD (70% capacity usage).

**DMR Analysis:**

- *BOD<sub>5</sub> / TSS*: Influent levels were typical of higher-strength domestic wastewater (i.e., camp water conservation practices in effect) and averaged 413 / 479 mg/l, respectively. Effluent levels averaged 13 / 3 mg/l, respectively. BOD<sub>5</sub> / TSS removal efficiency is quite satisfactory and averaged 97 / 99%, respectively.
- *Nitrate-Nitrogen*: The permit sets the effluent level to the nitrate-nitrogen drinking water standard of 10 mg/l, which presently does not consider additional nitrification of effluent ammonia-nitrogen in the groundwater. The effluent level averaged 7 mg/l, but higher levels over the limit were reported one-quarter of the time due to media clogging issues. With media clogging, reduced AIRR nitrification resulted in less nitrate input into the recycle tank to effectively complete the nitrogen removal cycle. The recycle tank does not consume a supplemental carbon source (e.g., methanol).
- *Total Nitrogen (TN)*: Influent sampling is not required. Typically, domestic wastewater nitrogen levels are found within the range of 40 to 60 mg/l. Effluent level of this parameter is not permit-limited and averaged 24 mg/l. Thus, NDEP estimates the existing treatment system removes approximately 50% of the influent nitrogen. A rated denitrification system would be able to consistently achieve effluent levels of  $\leq 10$  mg/l TN (e.g., 85% TN removal).
- *pH*: This effluent parameter was met in all months and averaged 7.0 SU.

**Receiving Water Characteristics:** Due to topography and building footprint limitations atop Angel Peak, sub-surface disposal is confined to beneath the athletic (football) field measuring 80 yards from end zone to end zone (e.g., full-length H.S. football fields measure 100 yards). Underneath the artificial turf playing surface, (25) one-foot width disposal trenches have been constructed. Inspection ports (e.g., piezometers) are not provided due to the limited playing turf availability, but the facility has not reported any occurrence of effluent surfacing (i.e., soggy artificial turf). Reported groundwater depth is 100 ft bgs beneath the disposal field, and flow path is in an overall northerly direction towards Deer Creek drainage. The existing two-inch diameter PVC monitoring well is unusable (i.e., always reported “dry”), as it was installed too shallow at 20 ft total depth, and did not effectively reach (sample) the groundwater table. This well essentially functions as a piezometer to indicate presence of effluent mounding.

**Schedule of Compliance:** The Permittee shall submit the following item to the Division for review and approval (**all compliance deliverables shall be addressed to the attention of the Compliance Coordinator, Bureau of Water Pollution Control**):

- In accordance with NAC 445A.290.2, “Any person, other than a supervisor or assistant supervisor, who is working as an operator of a plant for sewage treatment must be certified as at least a Grade I operator of a plant for sewage treatment, or obtain such certification within 1 year after the date on which he begins his employment at the plant for sewage treatment as such an operator”. Within ninety (90) days of the permit renewal date, the Permittee shall provide a schedule for the Clark County Real Property Management employee (i.e., daily maintenance operator) to comply with this regulation.

- Within one hundred and eighty (180) days of the permit renewal date, the Permittee shall provide specification plans (drawings) and a schedule to replace existing MW-1 with a monitoring well capable of sampling the down gradient water table at the disposal area, installed in accordance with NDEP guidance document WTS-4.
- Within ninety (90) days of the permit renewal date, the Permittee shall two copies of an updated Operations & Maintenance (O&M) Manual, prepared in accordance with the Division's WTS-2 guidance: *Minimum Information Required for an Operations and Maintenance Manual* and wet stamped/signed by a Nevada Professional Engineer (P.E.).

**Proposed Effluent Limitations and Special Conditions:**

The existing monthly monitoring frequency is proposed under the supervision of a Grade 3 (or higher) certified WW Operator. This monitoring schedule presumes the existing system is not capable of full denitrification and requires quarterly groundwater monitoring in a replacement monitoring well to ensure no environmental degradation occurs from effluent disposal practice. The daily maintenance operator (County employee) shall adopt a work plan to obtain the entry level of Grade 1 WW certification within a year for effective knowledge and safety practices of working in a wastewater treatment plant environment.

**Table 1: Discharge Limitations**

PARAMETER	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	30-Day Average	Daily Maximum	Measurement Frequency	Sample Type
Flow, GPD	12,000	14,000	Continuous	Effluent Pump Station
BOD <sub>5</sub> , mg/L (Influent)	Monitor & Report		Monthly	Discrete
BOD <sub>5</sub> , mg/L (Effluent)	30		Monthly	Discrete
TSS, mg/L (Influent)	Monitor & Report		Monthly	Discrete
TSS, mg/L (Effluent)	30		Monthly	Discrete
Nitrate-Nitrogen as N (Effluent), mg/l	10		Monthly	Discrete
Total Nitrogen as N (Effluent), mg/l	Monitor & Report		Monthly	Discrete
pH, Std. Units (Effluent)	6.0 to 9.0		Monthly	Discrete

**Table 2: Groundwater Monitoring (MW-1)**

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

**Procedures for Public Comment:** The Notice of the Division's intent to issue (renew) this discharge permit, subject to the conditions contained within the permit is being sent to the **Las Vegas Review-Journal** newspaper for publication. The notice is also being electronically mailed to interested persons on our public notification mailing 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 **Friday, May 15, 2009, by 5:00 P.M. PST.**

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 (renew) the proposed effluent reuse permit for a period of five (5) years.

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NDEP Bureau of Water Pollution Control

Date: April 9, 2009