

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

FACT SHEET

(pursuant to NAC 445A.236)

Applicant: Las Vegas Valley Water District
1001 South Valley View Blvd., MS 300
Las Vegas, NV 89153

Permit Number: NEV2011506

Location: Big Bend Water District Water Treatment Facility
1520 Thomas Edison Drive
Laughlin, Clark County, Nevada 89029
Latitude: 35° 10' 15.95" N, Longitude: 114° 34' 46.40" W
Section 12, T32S, R66E MDB&M

Discharge Outfalls: **001:** Big Bend Water District WTF West Lagoon:
Latitude: 35° 10' 13.38" N, Longitude: 114° 34' 41.72" W

002: Big Bend Water District WTF East Lagoon:
Latitude: 35° 10' 13.06" N, Longitude: 114° 34' 39.59" W

General: The Las Vegas Valley Water District (LVVWD), the Permittee, has applied for a 5-Year Groundwater Discharge Permit, NEV2011506, to discharge filter backwash, and filter-to-waste, from potable water treatment plant operations at the Big Bend Water District Water Treatment Facility (WTF), a member organization of the LVVWD. The facility is located at 1520 Thomas Edison Drive, on the northern edge of development in Laughlin, in Clark County, Nevada, approximately 1/8 mile south of Highway 163, and 1/2 mile west of the Colorado River. The WTF raw water source is the Colorado River, from below Davis Dam. The WTF uses a multi-stage water treatment process that includes ozonation, flocculation, multi-media filtration and chlorination to treat a maximum capacity of 15 million gallons per day (MGD). Real-time potable water production averages 6 MGD. The WTF routinely performs filter maintenance, which requires back-washing. The WTF operates as a closed-loop facility, but two on-site unlined lagoons are used to collect and store filter backwash water and filter-to-waste from the multi-media filtration system, as well as occasional system overflows and plant drain discharges. Drainage flows occur only during cleaning or other non-routine activities. Filters are backwashed daily. Approximately 62% of the water from the unlined lagoons is recycled back into the water treatment process, with the balance evaporating and infiltrating. A decant pumping station located between the two lagoons manages the return flows to the plant. The decant pump station is a below-grade, closed concrete structure with gates to each lagoon, containing 3 submersible pumps and space for a fourth pump in the future. The water recycled back to the treatment process is drawn off the top of the backwash solids and the solids are periodically removed mechanically and disposed of off-site. Over the history of the WTF the sludge has been removed once every 10 years. The two lagoons are approximately 3/4 acres each, and have a maximum design treatment capacity of 1.34 million gallons each. A minimum of 2 feet of freeboard will be maintained in each of the lagoons at all times.

Flow: The facility's daily maximum discharge rate to the lagoons is requested at 0.99 MGD and the 30-day average flow rate is requested at 0.75 MGD. Current operational daily maximum discharge rate is 0.99 MGD, and the 30-day average discharge rate is 0.33 MGD.

Receiving Water Characteristics: The receiving water body is groundwater of the State. Groundwater is

naturally elevated in arsenic and arsenic treatment is part of the water treatment facility.

Site Groundwater: The water table in the vicinity varies in depth from 20-100 feet below ground surface, and groundwater elevations at the site are on the shallow end of that range. The WTF site is underlain by Quaternary age unconsolidated alluvial sediments associated with the Colorado River. Localized flow is primarily to the south, parallel to the Colorado River, with a subordinate flow direction towards the River, approximately ½ mile to the east.

Corrective Action Sites: There are no Bureau of Corrective Actions remediation sites within a one-mile radius of the facility.

Well Head and Drinking Water Supply Protection: The facility and outfalls are within 1,000 feet of a public water supply (NV0001042W04), and inside of the 1,000-foot drinking water protection area (DWPA). The well is associated with the facility, and no impacts to the well are expected from this discharge. There is no established Wellhead Protection Area (WHPA) for this site.

Proposed Discharge Limitations, Sampling and Monitoring Requirements: During the period beginning on the effective date of this permit and lasting until the permit expires, the Permittee is authorized to discharge to Outfalls **001** and **002**, filter backwash and filter-to-waste, WTF overflows and drain discharges to two on-site storage lagoons.

Table I. Discharge Limitations, Sampling and Monitoring Requirements

Parameters	Units	Discharge Limitations		Monitoring Requirements		
		30-Day Average	Daily Maximum	Sampling Locations	Monitoring Frequency	Monitoring Type
Discharge Flow Rate ¹	MGD	0.75	0.99	Σ of each and all Outfalls	Continuous	Calculation
pH –SV ²	S.U.	6.0 ≤ pH ≤ 9.0		001, 002	Quarterly	Discrete
TDS	mg/l	---	M&R	001, 002	Quarterly	Discrete
Iron ³	mg/l	---	M&R	001, 002	Quarterly	Discrete
Chlorine	mg/l	---	M&R	001, 002	Quarterly	Discrete
Arsenic ³	mg/l	---	M&R	001, 002	Quarterly	Discrete
Sludge removed ⁴	tons	---	M&R	001, 002	Event	Field measurement

001 = Outfall 001 =BBWD WTF West Lagoon

002 = Outfall 002 =BBWD WTF East Lagoon

MGD: million gallons per day
 SV: single value
 TDS: Total Dissolved Solids
 M&R: Monitor and Report

Σ: summation symbol
 S.U.: Standard pH units
 mg/l: milligrams per liter

1. Monitor and report, the total discharge to the lagoons. Report flow as daily maximum and 30-day average.
2. Monitor and report, the minimum and maximum pH values for the reporting period.
3. Sample and report, total recoverable metals concentrations.
4. As sludge is removed from the lagoons, monitor and report the volume removed for the reporting period.

Rationale for Permit Requirements: The Division has established the monitoring requirements in Table I. to ensure that waters of the State are not degraded as a result of project activities.

Flow: Maximum daily discharge: 0.99 MGD; 30-day average discharge: 0.75 MGD. The rationale for

the maximum and 30-day average daily discharge limits was explained in the Flow section of this fact sheet.

pH: 6.0-9.0 SU. The requirement is to sample quarterly.

TDS: M&R. The requirement is to sample quarterly to gain information on impoundment supernatant quality.

Iron: M&R. Because Ferric chloride is used in the treatment process, iron analysis is required.

Chlorine: M&R. Because chlorination is part of the treatment process, chlorine analysis is required.

Arsenic: M&R. Arsenic occurs naturally in the groundwater, and arsenic treatment is part of the drinking water treatment. No limits are applied, but sampling and analysis are required.

Sludge removed: M&R. The volume of sludge removed for off-site disposal if required monitoring.

Schedule of Compliance: The Permittee shall implement and comply with the provisions of the schedule of compliance after approval by the Administrator, including in said implementation and compliance, any additions or modifications which the Administrator may make in approving the schedule of compliance:

- The Permittee shall achieve compliance with the effluent limitations upon issuance of the permit.
- Within 90 days of the permit effective date (**MMDD, 2010**), the Permittee shall submit to the Division, for review and approval, an updated Operations & Maintenance (O&M) Manual. The O&M Manual shall include information on the operation and maintenance of the storage lagoons and decant pump system.

All schedule of compliance submittals and evidence of compliance documents shall be submitted to the Bureau of Water Pollution Control Compliance Coordinator at the address listed below:

**Division of Environmental Protection
Bureau of Water Pollution Control
ATTN: Compliance Coordinator
901 S. Stewart Street, Suite 4001
Carson City, Nevada 89701**

Before implementing changes to an approved O&M Manual, the Permittee shall submit proposed changes to the Division for review and approval.

Proposed Determination: The Division has made the tentative determination to issue the proposed renewal permit for a period of five (5) years.

Procedures for Public Comment: The Notice of the Division's intent to issue a new groundwater discharge permit authorizing this facility to discharge to groundwaters of the State for a five-year period, 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 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 **April 25, 2011 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.

Prepared by: Jeryl R. Gardner, P.E.
Date: March, 2011