

# NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

## FACT SHEET

(pursuant to NAC 445A.236)

**Permittee Name:** Moapa Valley Water District  
P.O. Box 257  
Logandale, NV 89021

**Permit Number:** NEV2008504

**Location:** Moapa Valley Water District, Arrow Canyon Arsenic Removal Plant  
Latitude: 36° 44' 04" N, Longitude: 114° 44' 53" W  
T14S, R65E, Section 7, MDB&M

**Discharge Outfalls:** **001:** Rapid infiltration basin (RIB)

**General:** The applicant, Moapa Valley Water District (MVWD), has applied for a 5-Year Groundwater Discharge Permit, NEV2008504. The applicant proposes to use raw well water to re-expand a granular iron media (GIM) based arsenic removal system located at MVWD's Arrow Canyon Arsenic Removal Plant, approximately nine (9) miles northwest of the town of Moapa, in Clark County, Nevada.

The arsenic removal system is necessary to lower arsenic levels in the public drinking water system to no greater than 0.010 mg/L.

The arsenic removal process is achieved by passing raw well water through a fixed bed pressure vessel containing GIM. Dissolved arsenic adsorbs to the GIM, reducing the level of arsenic in the water. Over time the GIM bed needs to be re-expanded to allow water to freely move through the vessel, and to keep the system operating at its optimum arsenic removal capacity. The expansion also allows built-up particles of sand to be removed. The sand originates from the source water and can cause the GIM to compact, reducing arsenic removal efficiency and hydraulic efficiency. The bed expansion (back-flush) wastewater is sent to a sand settling basin, to remove fine sand and GIM particles, then to the RIB for disposal via evaporation and percolation to groundwater.

The RIB will be designed in two sections for cleaning/redeveloping, and will include access ramps. Any solids or sludge removed from the infiltration and/or sand settling basins, as well as spent GIM removed from the vessels, shall be disposed of properly.

Based on the projected water quality of the bed expansion wastewater, the proposed RIB facility should not negatively affect the quality of the groundwater.

**Flow:** The facility's requested daily maximum flow is 0.136 million gallons per day (MGD); the requested 30-day average flow rate is 0.0065 MGD.

**Receiving Water Characteristics:** Discharge is to groundwater of the state via percolation.

**Site Groundwater:** Depth to groundwater in the area is approximately 44 feet below ground surface. Groundwater flow direction is southeasterly.

**Discharge Effluent:** The proposed media bed expansion process will use raw well water treated to below 10 parts per billion of arsenic, therefore the wastewater should meet all current drinking water standards except for sand/silt particles affecting the turbidity.

**Well Head and Drinking Water Supply Protection:** The facility is located within the 150' Drinking Water Protection Area of two public water supply wells (W02 and W06) that are owned and operated by the applicant, Moapa Valley Water District (NV0000160). The facility is located within a 2-year Wellhead Protection Area established for the two well sources. Water discharged by the facility to the RIB in accordance with permit limitations is not expected to adversely impact public water supply wells in the vicinity.

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

**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 filter back-flush water to the RIB.

Quarterly reporting is required by the permit.

Effluent samples and measurements for the discharge to the RIB, Outfall 001, taken in compliance with the monitoring requirements specified below shall be collected at the following locations:

- i. Back-flush water discharge flow meter;
- ii. Discharge line from the sand settling basin to the RIB.

The discharge shall be limited and monitored by the Permittee in accordance with the following specifications:

**Table I. Discharge Limitations, Sampling, and Monitoring Requirements**

Parameters	Discharge Limitations		Monitoring Requirements		
	30-Day Average	Daily Maximum	Sampling Locations	Monitoring Frequency	Monitoring Type
Flow <sup>1,2</sup> (MGD)	0.0065	0.136	i	Each Event	Flow Meter
Arsenic <sup>2,3</sup> (mg/L)	---	0.050	ii	Quarterly	Discrete
Iron <sup>2,3</sup> (mg/L)	---	0.6	ii	Quarterly	Discrete
TDS <sup>2,3</sup> (mg/L)	---	M&R	ii	Quarterly	Discrete

MGD: million gallons per day  
 TDS: total dissolved solids

mg/L: milligrams per liter  
 M&R: monitor & report

1. Monitor and report, the total event discharge to the RIB. Report flow as daily maximum and 30-day average.
2. If there is no discharge for the reporting period enter “No Discharge” on the report.
3. The Permittee may request a reduction in monitoring frequency from quarterly to annually after 12 consecutive monitoring events in which the constituent is not detected at appropriate laboratory reporting limits. Contingent on Division approval of the request, the permit will be modified to reflect the change in frequency as a minor modification.

**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.

**Schedule of Compliance:** The Permittee shall implement and comply with the provisions of the schedule of compliance after approval by the Nevada Division of Environmental Protection (Division), including in said implementation and compliance, any additions or modifications which the Division may make in approving the schedule of compliance:

- a. The Permittee shall achieve compliance with the effluent limitations upon issuance of the permit.
- b. By **MMM DD, 2011**, the Permittee shall submit for review and approval, an Operations and Maintenance (O&M) Manual, compiled in accordance with appropriate sections of guidance document WTS-2, “*Minimum Information Required for an Operations and Maintenance Manual*”, signed by an engineer registered in the State of Nevada.
- c. By **MMM DD, 2011**, the Permittee shall submit a set of “As Built” plans for the completed arsenic treatment plant, stamped by an engineer registered in the State of Nevada.

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

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  
901 S. Stewart Street, Suite 4001  
Carson City, Nevada 89701-5249  
ATTN: Compliance Coordinator**

**Proposed Determination:** The Division has made the tentative determination to issue the proposed 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 a rapid infiltration basin for a five-year period, subject to the conditions contained within the permit, is being sent to the **Moapa Valley Progress** and 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 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 **MMM DD, 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: Arthur Marr, P.E.  
Date: April, 2011