

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

FACT SHEET

(pursuant to NAC 445A.236)

- Applicant:** Truckee Meadows Water Authority
P.O. Box 30013
Reno, NV 89520
- Permit Number:** NV0024031
- Facility Location:** TMWA System-wide Operations and Maintenance discharges
Throughout Washoe County, City of Reno and City of Sparks, Nevada
- Discharge Outfalls:** The System is contained within the boundary defined by the coordinates below:
- Northern Extent: Latitude 39° 40' 59.07" N, Longitude 119° 53' 53.01" W
Section 18, T21N R19E MDB&M**
- Southern Extent: Latitude 39° 24' 40.56" N, Longitude 119° 46' 13.68" W
Section 20, T18N R20E MDB&M**
- Western Extent: Latitude 39° 31' 17.57" N, Longitude 119° 57' 37.63" W
Section 09, T19N R18E MDB&M**
- Eastern Extent: Latitude 39° 37' 22.70" N, Longitude 119° 39' 44.15" W
Section 06, T20N R21E MDB&M**

General: The Permittee, Truckee Meadows Water Authority (TMWA), owns and operates a system of drinking water treatment and supply facilities in Washoe County, Nevada, that lies within the four boundary points listed on page one of the permit. The system specifically consists of: two main water treatment plants (Chalk Bluff and Glendale), 32 groundwater wells located throughout the system, 2 treated water storage reservoirs (Highland and Hunter Creek), 42 treated water storage tanks, 105 pumping stations, 143 pressure regulating stations and over 1330 miles of water mains. The mains have points where water can be flushed from the system, including permanent flushing assemblies, and 9746 fire hydrants (within the City of Sparks, the hydrants are tested and maintained by TMWA). In addition, TMWA has 31 interconnections with other systems. The system may expand in the future; no modification to the permit is required for expansions, except for a request to increase the maximum daily discharge rate. The TMWA distribution system covers approximately 110 square miles across three jurisdictions, including the City of Reno, the City of Sparks and unincorporated Washoe County. Per drinking water quality and water supply requirements, TMWA uses 85% surface water and 15% groundwater for the water distribution system that supplies the majority of the drinking water in Washoe County. The groundwater wells are typically used only in the summer season to boost surface water supplies.

In the interest of protecting public health and safety by providing safe drinking water and fire protection water, TMWA performs routine and non-routine maintenance and operational activities that result in the discharge to waters of the State. The discharges are pertinent to all operations, maintenance and emergency activities performed by TMWA throughout the water system, with the exception of the two water treatment plants, Chalk Bluff and Glendale, and they have individual NPDES permits for operational, treated water discharges to the Truckee River (River). The proposed system-wide permit will authorize the entire TMWA drinking water distribution system, planned and unplanned, maintenance discharges for a period of five years. Any and all combinations of system-wide discharges under this permit will be permitted at a maximum of less than 35 million gallons per day.

Highland Reservoir and Hunter Creek Reservoir: TMWA owns and operates the Chalk Bluff Water Treatment Facility which supplies the water stored in the Hunter Creek Reservoir (HCR) and the Highland Reservoir (HR). The water delivered to the reservoirs from Chalk Bluff is treated and chlorinated, prior to storage in the 30-million gallon HCR, and the 20-million gallon HR, respectively, to meet operational demands. The reservoirs are equipped with high density polyethylene (HDPE) liners, sub-drain systems and polypropylene covers. The water stored in the reservoirs meets drinking water standards, and contains residual chlorine as required by health regulations. Therefore discharges from the reservoirs are monitored for chlorine residual.

In the event that the reservoirs require maintenance, or if the reservoirs exhibit structural failure, water may be discharged from the reservoirs under this permit. The HCR discharges to the Hunter Creek drainage system, and ultimately to the Truckee River. The HCR sub-drain system is monitored for residual chlorine and discharge is periodically routed to the Hunter Creek drainage system. The HR discharges into the City of Reno stormdrain system adjacent to the reservoir site, and is routed approximately 1.5 miles to the Truckee River. For the HC, if stored water must be discharged, TMWA mobilizes a portable de-chlorination system to remove residual chlorine to a level of 0.10 mg/l prior to release into the stormdrain system. Remaining residual chlorine is expected to be dissipated and/or consumed in the 1.5 miles of storm drain piping. Flows out of the reservoirs are generally accomplished via gravity flow.

Potential reservoir discharges are to the Truckee River upstream of the water quality standards control point at Idlewild Park, and between the Idlewild and East McCarran control points. All discharges will be held to the most stringent of the Truckee River control point water quality standards.

The quality of discharged water from the reservoirs is very high, and discharge is not expected to degrade the water quality of the Truckee River. Additionally, discharge of treated, ‘finish’-grade water is an economically unfavorable option due to the effort and expense of collecting and treating water for potable, domestic use. Therefore, it is anticipated that TMWA will minimize discharge of treated water to the Truckee River.

System-wide Discharges: Water discharges generally include: flushing of distribution facilities and wells; draining/dewatering of tanks, mains and other facilities; facility overflows; system leaks; repairing of leaks and maintenance of facilities including associated dewatering operations; cleaning and disinfecting facilities; equipment and facility flow testing; equipment failures and emergencies. Discharges may occur from any facility within the system and estimated flow rates are described below. Since the groundwater wells are typically used only during the summer and fall seasons, testing and flushing of the wells will occur predominantly during those periods or in preparation for such use in the spring each year. The wells are mostly used to augment drinking water supplies, but they are also used at times for groundwater modeling purposes. Discharges throughout the system may contain any combination of the discharge types described and categorized in Table 1, below.

Table 1. System Discharge Types, Maximum Flow Rates, Duration, Frequency and Purpose

Discharge Type and Category		Maximum Flow Rate (gpm)	Typical Duration	Frequency and Purpose
Pipe flushing	1	2,500 (avg 500-1,000)	20-30 mins	Frequent for routine operations and water quality requirements
Well flushing	2	3,000	10-30	Frequent for routine operations and water

			mins	quality requirements
Production well testing	3	3,000	1-3 days	Infrequent for water supply, well performance or water quality testing
Well testing for GW modeling	4	3,000	Up to 30 days	Infrequent for groundwater modeling purposes
Tank, reservoir or pond draining	5	15,000	3-24 hrs	Quality inspections or other infrequent and unusual circumstances
Tank, reservoir or pond overflows	6	15,000	20-30 mins	Routine operations and water quality requirements
Flow testing	7	5,000	20 mins	Infrequent except for fire hydrant testing
Leaks/ Main breaks	8	20,000	Varies	Infrequent emergencies
Leak dewatering (all infrastructure)	9	500	1-12 hrs	Emergency operations; required when repairs encounter wet conditions that must be pumped before work begins
Other overflows (pump station, PCE tower, well box, ditch, pond, etc.)	10	5,000	Varies	Infrequent operation depending on cause

Discharge rates are estimated based on facility capacities and capabilities and worst-case failures. The system may experience no discharge during many days, while other days may have substantial and multiple discharges depending upon operational and water quality needs as well as emergencies.

The water to be discharged is typically composed of 85% Truckee River water, and 15% groundwater which has been treated to meet Safe Drinking Water Standards. Water may contain residual chlorine which will be removed utilizing de-chlorination processes such as sodium thiosulfate. If water contains sediments, then sediment barriers such as fiber rolls, gravel bags, and silt fences will be employed to contain sediments. For discharges flowing across unimproved drainages, TMWA will implement BMPs to dissipate energy and control erosion as well as sediment. When conveyance is through the stormdrain systems, treatment, as needed, and monitoring, as required by the permit, are based upon discharge purpose and water quality, and are imposed prior to discharge into the stormdrain systems. All treatments are implemented as expeditiously as possible during emergency events.

The majority of the discharge enters into the City of Reno and City of Sparks stormdrain systems, and flows to the Truckee River between the system discharge boundaries, through identified and unidentified outfalls. Major outfalls from stormdrain systems discharges to the River are identified and listed below.

City of Reno Outfalls to the Truckee River:

D16: Longitude = 119° 47' 12.36"	Latitude = 39° 31' 52.50"
F18: Longitude = 119° 48' 26.78"	Latitude = 39° 31' 40.63"
O18: Longitude = 119° 48' 10.85"	Latitude = 39° 31' 47.78"
E19: Longitude = 119° 48' 59.53"	Latitude = 39° 31' 29.13"
A22: Longitude = 119° 50' 11.44"	Latitude = 39° 31' 17.70"
E25: Longitude = 119° 51' 18.19"	Latitude = 39° 30' 41.50"

City of Sparks Outfalls to the Truckee River:

SDOE008936: Longitude = 119° 45' 08.90"	Latitude = 39° 31' 01.47"
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SDOE008955: Longitude = 119° 44' 52.82"	Latitude = 39° 31' 05.49"
SDOE008954: Longitude = 119° 44' 42.75"	Latitude = 39° 31' 03.43"
SDOE008957: Longitude = 119° 44' 02.64"	Latitude = 39° 30' 49.69"
SDOE008959: Longitude = 119° 43' 28.52"	Latitude = 39° 30' 53.65"
SDOE008960: Longitude = 119° 42' 53.76"	Latitude = 39° 31' 05.26"
SDOE008937: Longitude = 119° 42' 20.52"	Latitude = 39° 31' 16.46"

Other discharges flow to established drainage-ways and may make their way to the Truckee River. In many cases, exact discharge points to the river are unknown because once flows enter the storm drain systems, TMWA has no control over where the flows route; however, discharges are bracketed between the River boundaries listed below:

Western Limit: Longitude = 119° 57' 22.81"	Latitude = 39° 31' 04.27"
Eastern Limit: Longitude = 119° 41' 47.15"	Latitude = 39° 31' 20.54"

Flow: The application requested a total maximum discharge flow rate of 34.9 million gallons per day (MGD). Actual flow rates will be determined by system operational needs, and emergencies. Total maximum daily flow rate from all system discharges will be permitted at less than 35.0 MGD.

Receiving Water Characteristics: The receiving water for the discharges is the Truckee River, via direct discharge to the River or its tributaries, or indirectly through the storm drain systems. The applicable Truckee River reaches for permitted discharges are governed by regulations cited in NAC 445A.185 and NAC 445A.186.

Site Groundwater: Discharges captured in swales or low points remote from the river may either recharge groundwater or evaporate. In the Stead/Lemon Valley areas, TMWA discharges may flow to Silver Lake or Lemon Lake either through drainages into those bodies or via the storm drain systems.

Corrective Actions Sites: There are numerous Bureau of Corrective Actions (BCA) remediation sites throughout the system-wide discharge areas. There are no anticipated effects to the remediation sites from the system-wide discharges.

Proposed Discharge Limitations, Sampling and Monitoring Requirements: Specific sampling requirements are listed below in Tables 2-5, including frequency and location of sampling. The Permittee is authorized to discharge to waters of the State (surface water and potable, treated and untreated groundwater) from routine and non-routine maintenance and operational activities related to the TMWA drinking water systems. Discharges shall be routed and handled to prevent water quality degradation, sediment transport and soil erosion to the extent practicable, in accordance with the plans and information submitted to NDEP. The most stringent of the water quality Requirements to Maintain Higher Existing Quality (RMHQ) and Beneficial Use standards listed in NAC 445A.185 and NAC445A.186 apply to all discharges to surface waters, since there is no method for distinguishing in which River reach some discharges may occur. Table 2 outlines the system-wide discharges. As required in Table 2, the total daily system discharges are limited to less than 35 MGD. Each of the categories of discharges outlined in Table 1 (Categories 1 through 10) are required by Table 2 to report individually, but they have no individual flow limits. Tables 3 and 4 detail the two broad classes of discharges, chlorinated and non-chlorinated, and list the required sampling parameters, other than flow. The discharges, organized by discharge category (Table 1), are grouped into the two discharge classes: 1) planned and unplanned chlorinated discharges (Table 3); and, 2) planned and unplanned non-chlorinated discharges (Table 4).

The discharges shall be limited and monitored by the Permittee as specified in Tables 2-4 below.

Table 2. Sum of all TMWA System Operations & Maintenance Discharges

System –Wide Discharge Parameters, Categories & Units			Discharge Limitations	Monitoring Frequency	Monitoring Type
Flow Rate, and Total Volume ¹	Σ (1-10)	MGD, MG	< 35.0, M&R	Continuous, as discharge occurs	Flow meters, estimation, calculation
Number of Events ¹	Σ (1-10)	#	M&R	per discharge event	Calculation
Flow Rate, and Total Volume ²	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	MGD, MG	M&R	Continuous, as discharge occurs	Flow meters, estimation, calculation
Number of Events ²	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	#	M&R	per discharge event	Calculation

MGD: million gallons per day

Σ: summation symbol; sum of all discharge categories

M&R: Monitor and Report

<: less than symbol

1. Monitor total flow from all discharges, in gpm or MGD. Record daily the flow rates and volumes of all discharges, and the number of events, on tracking logs, and report maximum daily discharge (in MGD) from all discharges, the total volume (in MG) of all discharges, and the total number of events for the quarter, on DMRs.
2. Monitor flow from all Categories (1 through 10), discharges, in gpm or MGD, and the number of events. Track for each category of discharge listed in Table 1, separately. Record daily on tracking log, and report maximum daily discharge in MGD, total volume for the reporting period, in MG, and the number of events, for each category, on quarterly DMR forms (One DMR form for total system discharges, and one DMR form for each of the discharge categories, 1-10).

Table 3. Planned and Unplanned Chlorinated Discharges –Pipe flushing, Tank, Reservoir or Pond Draining and Overflows, Leaks/Main Breaks, and Other Overflows (pump station, PCE tower, well box, ditch, etc.)

Discharge Parameters, Categories & Units			Discharge Limitations	Monitoring Frequency	Monitoring Type
Chlorine residual – daily maximum ¹	1, 5, 6, 8, 10	mg/l	0.1	per discharge event	Discrete
Chlorine residual - 30-day average ¹	1, 5, 6, 8, 10	mg/l	0.1	per discharge event	Discrete

mg/l: milligrams per liter

1. Chlorine residual shall be monitored for each of the above-listed discharge categories, prior to discharge; report on separate DMR forms, the daily maximum, and 30-day average concentrations, for each of the categories.

Table 4. Planned and Unplanned Non-Chlorinated Discharges –Pipe Flushing, Well Flushing, Production Well Testing, and Well Testing for Groundwater Modeling

Discharge Parameters, Categories & Units			Discharge Limitations	Monitoring Frequency	Monitoring Type
Attachment A – single value ¹	3, 4, 5	mg/l	M&R	per discharge event	Discrete

mg/l: milligrams per liter

M&R: monitor and report

1. Sample and analyze for all Attachment A Priority Pollutant parameters once per well flush or well test discharge, track in logbook, and report on quarterly DMRs. (Not all well tests require Priority Pollutant sampling for each event/test/year; no more than 3 well discharges are required to be sampled and reported annually.) Metals shall be total, recoverable.

Rationale for Permit Requirements: The Division has established the monitoring requirements in Tables 2, 3, and 4 above to ensure that the receiving water, the Truckee River, is not degraded as a result of system discharges.

Flow, Total Volume, and Number of Events: The rationale for the daily maximum discharge was explained in the **General** and **Flow** sections of this fact sheet. The flow rate for each discharge event, total volume, and number of events per quarterly reporting period must be tracked and reported.

Chlorine: 0.1 mg/L. Sampling and analysis is required for discharges of chlorinated water only. The requirement is to sample once per discharge event for residual chlorine. Sampling and analysis may be done by qualified personnel using a hand-held meter, rather than laboratory analyses.

Attachment A Priority Pollutant Parameters: M&R. Sampling and analysis is required for well flushing and testing discharges only (not all well discharges require Attachment A sampling for each event/test/year; no more than 3 wells are required to be sampled and reported annually. The requirement is to sample once per well discharge. Metal analyses shall be total, recoverable.

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 discharge limitations upon issuance of the permit.
- Within 30 days of permit issuance the Permittee shall submit to the Division, for review and approval, an Operations and Maintenance (O&M) Manual. The O&M Manual shall include copies of the pertinent field instruction manuals for each discharge category, and locations of where the manuals will be kept, and who has responsibility for maintaining the logbooks, and records for DMR submittals.

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

Procedures for Public Comment: The Notice of the Division's intent to issue a NPDES permit authorizing the Permittee to discharge to the Truckee River for a five-year period, subject to the conditions contained within the permit, is being sent to the **Reno Gazette Journal** and the **Sparks Tribune** 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 **August 23, 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: July, 2011

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