

Tetra Tech Project No. 117-7502017-L09

**NDEP Ordered Treatment of Water Generated by Southern Nevada Water Authority's Weir Construction Dewatering Operations
February 2017**

1.0 SCOPE OF THE PROJECT

The Nevada Environmental Response Trust (NERT or "Trust") was established by the Bankruptcy Court as part of the settlement agreement entered into Tronox Incorporated's Chapter 11 bankruptcy. The exclusive purposes and functions of NERT are to own the former Kerr-McGee/Tronox property in Henderson ("NERT Site") and manage and fund the remediation of environmental impacts related to historic operations at the NERT Site. The beneficiaries of NERT are the State of Nevada, through the Nevada Division of Environmental Protection (NDEP) and the United States of America, through the U.S. Environmental Protection Agency (U.S. EPA). Consistent with NDEP's draft Action Memo and proposed Order ("Order") to treat groundwater extracted through Southern Nevada Water Authority's (SNWA) Sunrise Mountain and Historic Lateral Weir construction ("Weir Dewatering Treatment Project"), NERT is requesting access to land under the jurisdiction of the United States Bureau of Reclamation (BOR) and managed by Clark County.

At the direction of NERT, Tetra Tech, Inc. (Tetra Tech) has prepared this project description for the treatment of groundwater extracted by SNWA as part of its weir project.

This Project Summary is being submitted alongside the Trust's 75% project design submittal, attached herein.

The SNWA is planning to construct multiple weirs in the Las Vegas Wash. The Trust will be ordered to receive and treat groundwater from construction dewatering operations associated with the Sunrise Mountain and Historic Lateral weirs. SNWA will hire a weir general contractor to construct the new weirs. All construction details associated with the weirs are outside the scope of this document and are not the responsibility or under the control of NERT. All aspects of SNWA's actions with regard to the weir project on land under the jurisdiction of BOR are covered by an existing permit with BOR. This Project Summary document focuses solely upon the Weir Dewatering Treatment Project and the associated infrastructure to be constructed by NERT on land under the jurisdiction of BOR.

The treatment system for the Weir Dewatering Treatment Project will consist of concrete pads, piping, tanks, and control equipment for two pump stations and a centralized water treatment plant (CWTP). Underground piping will connect the pump stations to the CWTP and the CWTP to a permitted outfall at the wash. Groundwater generated from construction of the Sunrise Mountain Weir will be transferred to the Sunrise Mountain Pump Station by the weir general contractor. Groundwater generated from construction of the Historic Lateral Weir will be transferred to the Historic Lateral Pump Station by the weir general contractor. Each pump station will contain four baker-type influent tanks. Water will be transferred from the pump stations to the CWTP, which will contain hydrocyclones to remove large sediments (total suspended solids); multi-media filters to remove residual total suspended solids that remain after treatment by the hydrocyclones; and an ion exchange treatment system to remove perchlorate. Residual water from the hydrocyclones, and backwash from the multi-media filters, will be stored in storage tanks for reblending with the treated water before discharge to the wash. All technical aspects of the Weir Dewatering Treatment Project's treatment process summarized above has been approved by the NDEP and U.S. EPA.

The Sunrise Mountain Pump Station and CWTP will be located south of Clark County Wetlands Park in the vicinity of Pabco Road, on private land within City of Henderson jurisdiction. The Historic Lateral Pump Station will be

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located several thousand feet northeast of the CWTP on land under the jurisdiction of BOR and managed as Clark County Wetlands Park. The Trust is subject to SNWA's construction timeline, which indicates a need for system readiness by October 1, 2017. After weir construction is complete, all pads, piping, and equipment will be removed, site disturbances will be reclaimed, and the area will be restored under the oversight of BOR and Clark County Parks and Recreation.

Table 1 summarizes the facilities that will be located on land under the jurisdiction of BOR.

Table 1. Summary of Weir Dewatering Treatment Facilities on Bureau of Reclamation Land

Facility	Location	Latitude/Longitude	Area of Work (acre)	Description	Jurisdiction
Historic Lateral Weir Pump Station	Section 29; T21S, R63E	36°05'13.48", -114°58'31.26"	1 acre (~200'x~200')	Above-ground pads, tanks, pumps, piping, and a generator. Maximum excavation depth is 10 feet.	BOR, managed as Clark County Wetland Park
Pipeline from Historic Lateral Weir Pump Station to Centralized Water Treatment Plant	Section 29; T21S, R63E and Section 30; T21S, R63E	Center points: 36°05'13.51", -114°58'31.78" 36°05'13.73", -114°58'33.14" 36°05'12.01", -114°58'36.23" 36°05'11.41", -114°58'38.11" 36°05'11.52", -114°58'40.40" 36°05'12.36", -114°58'43.72" 36°05'09.65", -114°58'49.05" 36°05'09.33", -114°58'51.37" 36°05'09.33", -114°59'15.28"	6.1 acres (3,800' x 70')	Linear feature with a 50-foot-wide construction corridor. 18" carbon steel pipeline buried ~ 2 feet below ground surface. Maximum depth of excavation along the alignment is 5 feet.	BOR, managed as Clark County Wetland Park
Effluent Pipeline from Centralized Water Treatment Plant to the Outfall. Note that the outfall location is approximate and under review by NDEP- BWPC.	Section 30; T21S, R63E	Center points: 36°05'08.95", -114°59'15.35" 36°05'09.10", -114°59'09.61" 36°05'09.59", -114°59'09.60" 36°05'12.71", -114°59'12.79"	1.5 acres (950' x 70')	Linear feature with a 70-foot-wide construction corridor. 18" carbon steel pipeline buried ~ 2 feet below ground surface. Maximum depth of excavation along the alignment is 5 feet.	BOR, managed as Clark County Wetland Park

2.0 PERMITS & APPROVALS

The following permits or authorizations are anticipated to support construction of the Weir Dewatering Treatment Project:

- BOR license issued in response to Form 7-2540 submitted by NDEP on behalf of NERT on October 4, 2016.
- Nevada Division of Environmental Protection, National Pollutant Discharge Elimination System Permit
- Nevada Division of Environmental Protection, Construction Stormwater Permit

- Clark County, Dust Control Permit
- Clark County, Minor Source Air Permit
- Clark County, Building Permit
- Clark County, Grading Permit
- Clark County, Electrical Permit
- Clark County, Encroachment Permit
- Clark County, Diesel Fuel Flammable Material Storage Permit
- City of Henderson, Design Review
- City of Henderson, Building Permit
- City of Henderson, Grading Permit
- City of Henderson, Electrical Permit
- City of Henderson, Stormwater Permit

3.0 BEST MANAGEMENT PRACTICES

The footprint for the Historic Lateral Pump Station and pipelines has been minimized to only the extent necessary to support treatment of groundwater generated by SNWA during the weir project. The duration of Weir Dewatering Treatment Project construction will be minimized by NERT to the extent practicable to avoid or reduce potential disturbance to wildlife or recreational uses of Clark County Wetlands Park.

A biological survey was conducted for the Weir Dewatering Treatment Project that did not identify any sensitive species habitat for avoidance. A biological monitor will continue to be present during vegetation removal and construction associated with the Weir Dewatering Treatment Project to identify potential effects to sensitive species using the area or to nesting migratory birds so that action can be taken to avoid impacts.

Water will be trucked to the site to control fugitive dust from soil disturbance. No surface or groundwater withdrawals will be used during the Weir Dewatering Treatment Project construction or operation. Designated access routes will be used to avoid or minimize cross-country travel, and vehicles will be inspected prior to entering the site to control for invasive weeds. Potential for stormwater runoff will be controlled using erosion control measures under the state Construction Stormwater Permit.

Signs will be posted alerting recreational users of temporary roadway or bike path crossings that need to occur for pipeline installation. Flagmen will be used to safely direct traffic for periodic delivery of large pieces of equipment to be installed.

Pipelines will be buried underground, and the Historic Lateral Pump Station will be fenced and locked, to avoid potential for vandalism that could affect safe operation of the Weir Dewatering Treatment Project facilities.

4.0 PROJECT SCHEDULE

To meet SNWA's construction timeline, which indicates a need for system readiness by October 1, 2017, Tetra Tech, on behalf of the Trust, respectfully requests issuance of the BOR license by June 1, 2017.