TETRA TECH

TECHNICAL MEMORANDUM

To:	Nevada Environmental Response Trust
Cc:	Dan Pastor, Tetra Tech, Inc.
From:	April Hussey
Date:	March 22, 2019
Subject:	Operation and Maintenance Summary – January and February 2019 Weir Dewatering Treatment Plant Nevada Environmental Response Trust; Henderson, Nevada

The Southern Nevada Water Authority (SNWA) has completed construction work on two weir projects in the Las Vegas Wash, the Sunrise Mountain Weir and Historic Lateral Weir. SNWA hired a construction company, Las Vegas Paving (LVP) to perform weir construction activities, which included construction dewatering activities. The Nevada Environmental Response Trust (NERT or Trust) was ordered by the Nevada Division of Environmental Protection (NDEP) to treat the groundwater from the construction dewatering activities to remove perchlorate before discharging the treated water to the Las Vegas Wash.

Tetra Tech, Inc. (Tetra Tech) designed and constructed two pump stations and a central water treatment plant (CWTP), collectively referred to as the SNWA Weir Dewatering Treatment Plant (Treatment Plant) to manage and treat groundwater from the construction activities. The Treatment Plant operated on a temporary basis, and full operations ceased on August 23, 2018 after groundwater dewatering associated with the SNWA weir construction projects was complete. Decommissioning of the Treatment Plant began in late August 2018, and support activities associated with decommissioning continued throughout December 2018, with final plant operations to support final discharge of decommissioning flushing completed on December 28, 2018. No additional plant operation is planned for 2019, with 2019 operations staff activities limited to the first 5 business days in January.

At the direction of NERT, Tetra Tech has prepared this summary of the operation and maintenance (O&M) activities performed during January 2019 for the Treatment Plant. The system was operated and maintained in accordance with the *NERT – SNWA Weir Dewatering Water Treatment Plant Operation and Maintenance Manual*. This report covers final O&M activities and invoicing and will be the final O&M summary report issued.

SUMMARY OF O&M ACTIVITIES

During January 2019, O&M activities included coordinating final equipment cleaning to support decommissioning (non-discharge activities) and dismantling and returning rented equipment associated with operations and maintenance. While final rented equipment was taken off-rent in January, some pickup of equipment did not occur until February. Additionally, final vendor invoices were received and paid during February.

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Plant operations were not conducted, and no flows were received during the reporting period. Accordingly, there were no sampling events or maintenance activities. Generators were removed from the CWTP and Sunrise Mountain Pump Station on January 4, 2019, the final Rain for Rent tanks were removed from the site on January 21, 2019. The 14 remaining Baker tanks were removed from the site between January 31 and February 15, 2019.

O&M Costs

At the direction of the Trust, Tetra Tech has summarized cost data for the reporting period. The following table summarizes project charges in accordance with the Operations and Maintenance Agreement, executed December 31, 2017, as amended. This section only captures project charges consistent with the O&M agreement or agreed upon charges for items supplied by/through Tetra Tech and billed to the Trust. Costs associated with decommissioning activities are not included in this summary.

Table 2: O&M Cost Summary

Item	Payment Details	Unit[1]	Cost Invoiced During Reporting Period	Total Costs – Project Inception to Date
Monthly Base Cost	Lump sum payable to Tetra Tech	$142,000 /month	$32,273[2]	$2,940,144
Ion Exchange Resin	Lump sum direct pay from Trust to Evoqua for turn key resin delivery, replacement, transportation and disposal services	$135,755 /vessel which includes: $109,750 /vessel for resin $26,005 /vessel for changeout services and disposal	$0	$813,282
Tankage	Actual usage charges direct pay from Trust to vendor	Baker Corp: $20,074 /month plus variable maintenance fees as necessary Rain for Rent: Variable costs	$48,511 $6,968	$406,293
Generator Rental / Maintenance	Actual usage charges direct pay from Trust to Cashman	Rental: Varies based on hours of run time and generator size. Maintenance: $625 every 250 run hours per XQ350 Generator	$42,740 $3,723	$372,505

[1] Unit rates do not include applicable taxes.

[2] Beginning August 24, 2018, the monthly fee for operations and maintenance support during decommissioning was reduced to $142,000. January monthly fee represents a partial month for 5 of 22 business days in the month of January (1/01/19 to 1/08/19) in accordance with the terms of the Agreement as amended.

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Item	Payment Details	Unit[1]	Cost Invoiced During Reporting Period	Total Costs – Project Inception to Date
		$1,250 every 250 run hours per XQ500 plus Backup generator rental costs as required to support maintenance		
Generator Fuel	Actual usage charges direct pay from Trust to Cashman	Adjusts per market	$23,436	$859,063
Solids Disposal	Lump sum payable to Tetra Tech for off-site transportation and disposal	$4,150 /3,000-gallon tanker $6,917 /5,000-gallon tanker	$0	$1,596,432
Decanting	Daily charge payable to Tetra Tech	$10,000 /day	$0	$440,000
Repairs	Cost of Equipment replacement plus 5% markup payable to Tetra Tech	Pioneer Equipment Inc: Repair/ Replacement Services	$0	$17,997
Other	Fees payable to Tetra Tech	O&M Project Decommissioning Fee Tank Cleaning Services	$16,530 $0	$160,112
		TOTAL	$174,181	$7,605,828

No other items were supplied by/through Tetra Tech and billed to the Trust during this reporting.

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CERTIFICATION

I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been prepared in a manner consistent with the current standards of the profession, and to the best of my knowledge, comply with all applicable federal, state, and local statutes, regulations, and ordinances. I hereby certify that all laboratory analytical data was generated by a laboratory certified by the NDEP for each constituent and media presented herein.

Description of Services Provided: Prepared Weir Dewatering Treatment Plant Operation and Maintenance Summary for January and February 2019.

Kyle D. Hansen

March 22, 2019

Kyle Hansen, CEM
Field Operations Manager/Geologist
Tetra Tech, Inc.

Date

Nevada CEM Certificate Number: 2167
Nevada CEM Expiration Date: September 18, 2020

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