

MURFEE ENGINEERING COMPANY, INC.

Texas Registered Firm No. F-353
1101 Capital of Texas Hwy., South, Bldg, D
Austin, Texas 78746
(512) 327-9204

M E M O R A N D U M

DATE: September 12, 2023

TO: BOARD OF DIRECTORS – REUNION RANCH WCID

FROM: Mark Kestner, P.E.

RE: Engineer’s Report

CC: Bill Flickinger – Willatt & Flickinger

MEC File No.: 12002.122-0

a. Wastewater Collection and Treatment Plant

i. Wastewater Flows and Trends

Attached is an updated figure tracking wastewater flows to the existing WWTP vs. projections and permit milestones. This figure includes calculated wastewater flow values produced per household.

ii. Improvements

The drop chute has completed installation and final payment is expected next month.

iii. Operational Issues

MEC and Inframark are coordinating on a “punchlist” of items to be accomplished at the plant site including equipment and facilities items.

Effluent Quality has been in accordance with Plant Permits this cycle with the exception of the EColi sample on the 19th where an extremely high level (16.1 mg/L) was sampled.

This would be the first month the plant did not meet operational parameters this year.

1. *Texas Land Application Permit (TLAP)*

The RRWCID TLAP expires in 2024. MEC has begun work on the renewal application. MEC is submitting an application with a 10-year renewal period rather than the current 5-year renewal period as the system has been completely built out.

TLAP is complete and is scheduled for submittal on Thursday 10/19.

iv. Proposed improvements to increase wastewater plant efficiency and to provide effluent irrigation; authorizations in connection with same.

A plan for increased efficiencies at the Wastewater treatment Plant (WWTP) is being prepared. This plan includes proposed efficiency updates in the form of cost reduction in the areas of operation, power, and equipment replacement/decommissioning, and creating additional revenue streams.

It is anticipated that the draft plan will be reviewed by the appropriate committees prior to presentation to the board review. The plan is envisioned to be comprised of smaller projects targeting specific areas of cost or income and be coordinated with HOA activities.

Specific sections of interest include:

- **Automation efforts to reduce operational or maintenance costs including valving, sensors, and integration with the SCADA system and enhanced notification of trouble.**
- **Selling effluent for Irrigation purposes under the 210 authorization.**
- **Identification of replacement requirements for existing equipment allowing for increased efficiencies.**
- **Identification of equipment that can be decommissioned or altered to serve multiple functions.**
- **Increasing resilience of the WWTP in accordance with the District's Emergency Plans.**

b. Water Supply and Distribution System

i) **Water Flows and Trends**

Charts showing the historic and current water use, both total and per connection, by the community are attached.

ii) **Lead and Copper Rule Revision (LCRR)**

The RRWCID lead and copper rule responsibilities including the system inventory has begun. Inventory is due Oct 16th, 2024.

Inventory is complete and will be submitted well before the deadline in Oct, 2024.

c. Long-Term Improvements and Asset Management Plan – 2024 Budget

Several items were included in the budget for this year, a table of the projects is attached to this report.

Budgets will be updated on a Quarterly Basis to account for inflation/prevaling cost adjustment.

d. Emergency Management Plan(s)

- i) Texas Senate Bill No. 3 – Emergency Preparedness Plan

MEC submitted the EPP on February 22nd, 2022, to the TCEQ. The 90-day review and comment period has expired.

- ii) Wastewater System Emergency Response Plan

A draft version for comments is prepared for discussion.

e. Stormwater and Water Quality System

No ongoing projects or updates.

f. Approvals Related to Ongoing Construction Contracts

Currently there are no approvals for Board Consideration

g. Approvals Related to Upcoming Construction Contracts

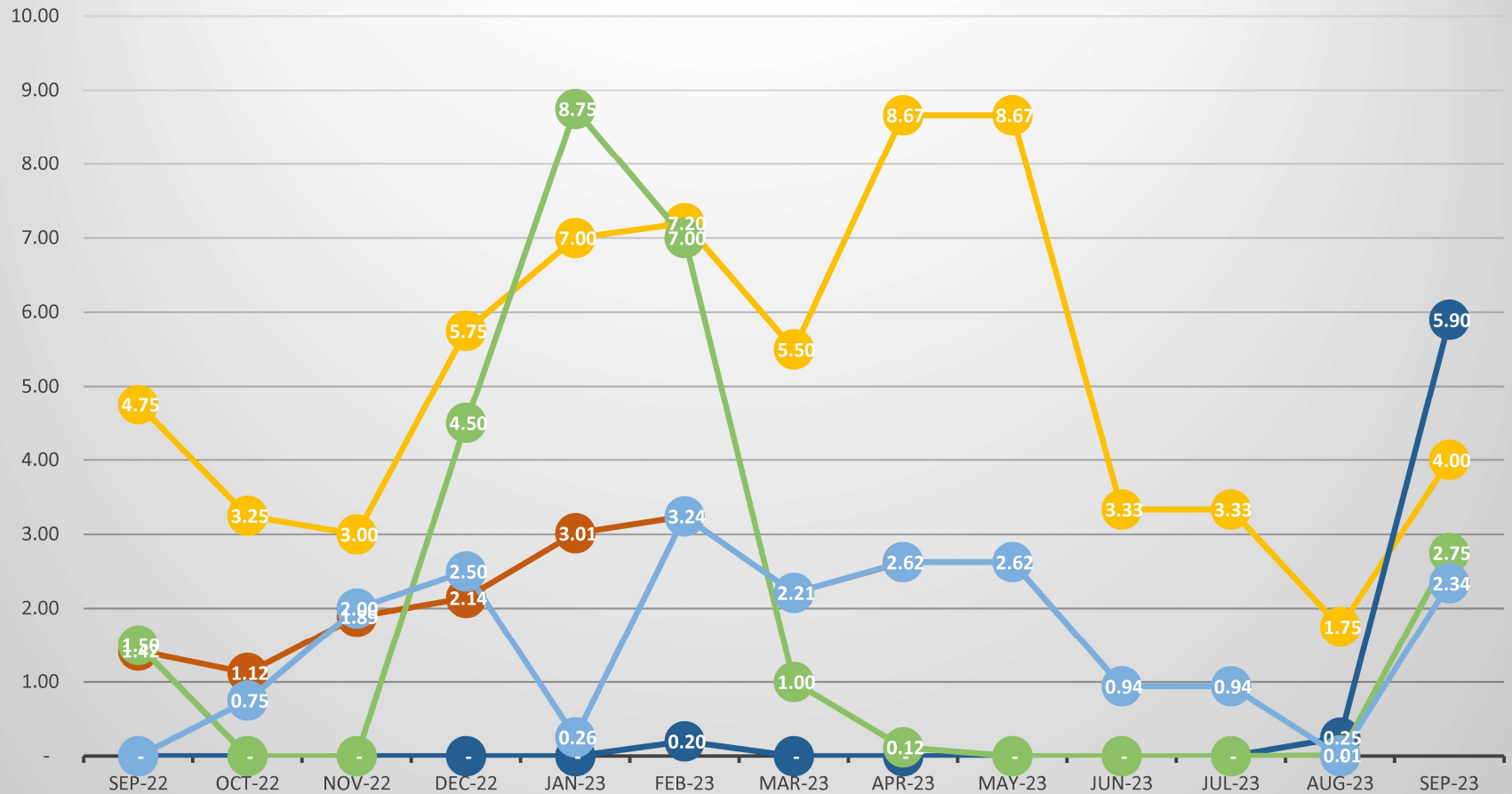
- i) Effluent Irrigation Improvements and 210 Authorization Irrigation Conversion Project

MEC received bids for the Reunion Ranch Water Control Improvement District Irrigation Pump Skid Supply and Installation Project Thursday May 18th at 2pm. We had two bids submitted. The low bid was submitted by Prota Inc at \$554,681 and was \$20,919 less than the second bidder at \$575,600 from Austin Engineering. The Bids were within 3.6% of one another.

All bids have been rejected.

Project	Tracking Number	Description	Original Budget	Actual Contract Cost	Cost to Date	Final Cost	Estimated Start	Estimated Completion	Final Completion Date	Additional Notes
210 Irrigation Skid Installation	12002-117	Install a pump skid capable of providing effluent to the various irrigation areas in the District, including associated engineering efforts.	\$230,000.00	\$ 556,000.00			May-22	Nov-23		Re-bid was high, currently evaluating alternative options.
SADDS Skid Cover	WO2865315/PO139130	Inframark's contractor to install a cover over the SADDS Skid to protect the equipment from weather.	\$5,000.00	\$8,435.00		\$8,435.00	Feb-22	Sep-22	Sep-22	Final Completion - Late September 2022
Main Line Valve Maintenance		Locate and clean/exercise valves	\$2,000.00				Jan-23	Jul-23		Needs to be done FY23
Service Line verification		Verify Service Lines via record or field verification	\$10,000.00				Jan-23	Dec-23		This may lead to higher costs in FY24 to pothole for verification
Service Line Survey/Database		Create a database of service lines and materials to comply with the RLCR (Revised Lead and Copper Rule)	\$10,000.00				Jan-23	Dec-23		
WWTP Entrance Maintenance		Install roadbase and cleanup brush/rock/debris	\$12,000.00				Jan-23	Jul-23		Requested by board
Drip Skid Pump Maintenance	WO3022145/PO147855	JNM to confirm, est. close \$8000 in parts	\$8,000.00	\$14,312.45			Nov-22	Jul-23		PO approved at October meeting
Sludge Storage Basin Mixer Replacement		Sludge storage basin mixer motor was damaged while the basin was covered due to corrosive gases in the headspace. The unit needs replaced in order to continue operation of the mixer	\$15,000.00	\$11,537.08			Jan-23	Jul-23		The proposal from AAS was approved at the March Board Meeting
Effluent Lift Station (Filter Feed Pumps) Pump Replacement		Replace the submersible pumps that are not operating according to their design point	\$50,000.00				Jan-23	Jul-23		Note, potential additional upgrades in the future, \$50K
Storage shed at WWTP		Install a shed to store spare parts at the WWTP, storage on site was significantly reduced because of the WWTP Exp	\$5,000.00				Jan-24	Jul-24		Request from Inframark - delayed until FY24
Replace Hypchlorite Tank at WWTP		Replace the existing hypochlorite tank at the WWTP with a 500 gallon tank	\$5,000.00				Jan-24	Jul-24		Request from Inframark - DELAY - BUDGET USED FOR DRIP SKID REPAIRS

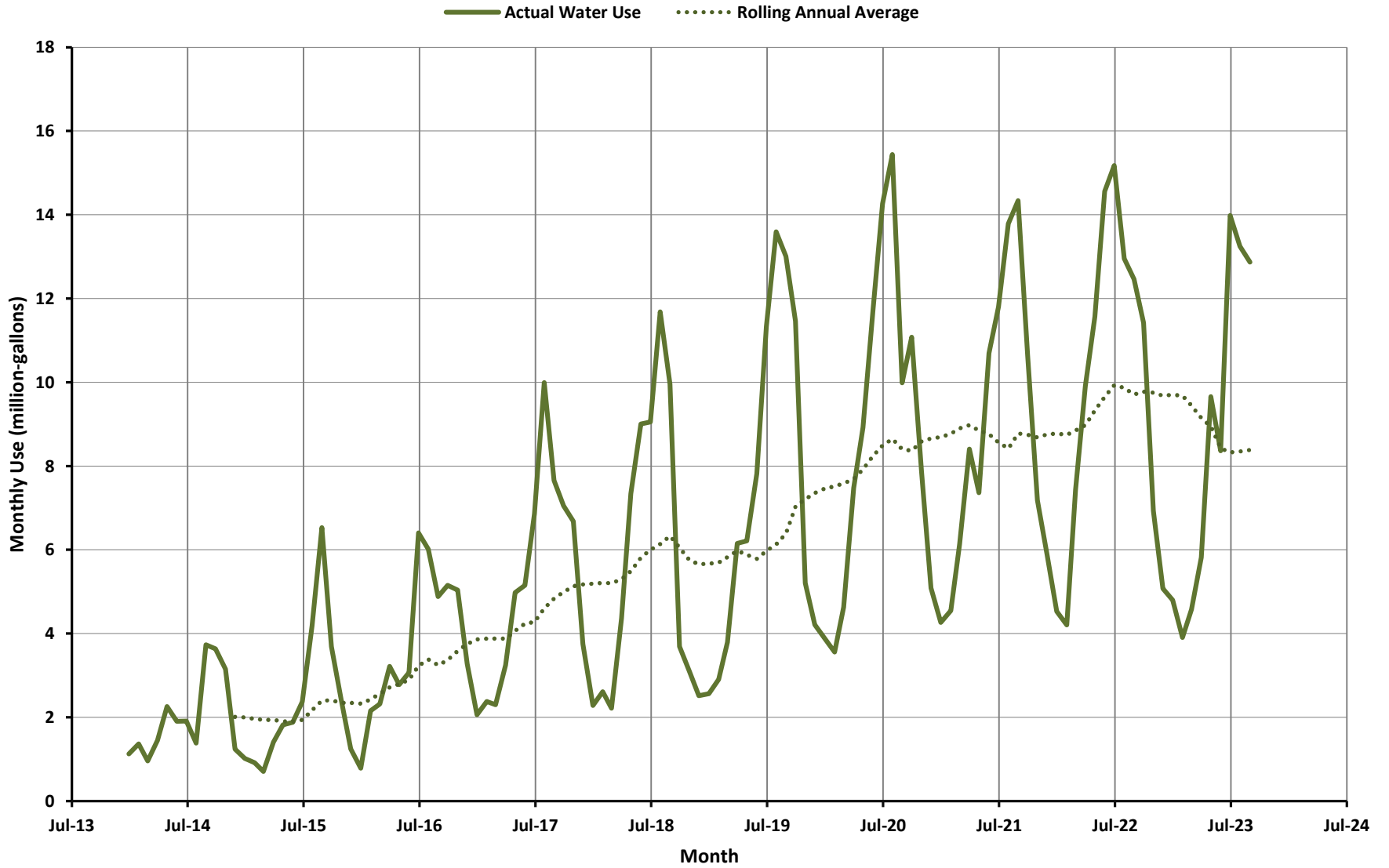
Composite Effluent Chart



	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23
Turbidity	1.42	1.12	1.89	2.14	3.01	3.24	2.21	2.62	2.62	0.94	0.94	-	2.34
BOD	4.75	3.25	3.00	5.75	7.00	7.20	5.50	8.67	8.67	3.33	3.33	1.75	4.00
E.Coli	-	-	-	-	-	0.20	-	-	-	-	-	0.25	5.90
NH3N	1.50	-	-	4.50	8.75	7.00	1.00	0.12	-	-	-	0.01	2.75
TSS	-	0.75	2.00	2.50	0.26	3.24	2.21	2.62	2.62	0.94	0.94	-	2.34

—●— Turbidity
 —●— BOD
 —●— E.Coli
 —●— NH3N
 —●— TSS

Reunion Ranch WCID Total Monthly Water Use



Reunion Ranch WCID Per LUE Water Use Trends

