ENGINEERING/OPERATIONAL COMMITTEE MEETING AGENDA
TRABUCO CANYON WATER DISTRICT
32003 DOVE CANYON DRIVE, TRABUCO CANYON, CA
ADMINISTRATION FACILITY, BOARDROOM
MAY 10, 2022 AT 7:00 AM

COMMITTEE MEMBERS
Stephen Dopudja, Committee Chair
Michael Safranski, Committee Member
Ed Mandich, Committee Member Alternate

DISTRICT STAFF
Fernando Paludi, General Manager
Michael Perea, District Secretary
Lorrie Lausten, District Engineer
Gary Kessler, Water System Superintendent
Jason Stroud, Maintenance Superintendent

AGENDA NOTE:
Trabuco Canyon Water District (District) will make this Engineering/Operational Committee Meeting available by telephone audio as follows:

Telephone Audio: *1 (669) 900-6833* ***Access Code:*** 973-7562-7682

*Persons desiring to monitor the Committee meeting agenda items may download the agenda and documents on the internet at **www.tcwd.ca.gov**. You may submit public comments by email to the Committee at **mperea@tcwd.ca.gov**. In order to be part of the record, emailed comments on meeting agenda items must be received by the District at the referenced e-mail address not later than 7:00 a.m. (PDT) on the day of the meeting.*

CALL MEETING TO ORDER

VISITOR PARTICIPATION
*Members of the public wishing to address the Committee regarding a particular item on the agenda are requested to submit public comments by email to the Committee at **mperea@tcwd.ca.gov**. The Committee Chair will call on the visitor following the Committee's discussion about the matter. Committees do not constitute a quorum of the Board of Directors and Committee Members cannot make decisions on matters. The Committee makes recommendations only to the Board of Directors. Members of the public will be given the opportunity to speak to the Committee prior to making a recommendation on the matter. For persons desiring to make verbal comments and utilizing a translator to present their comments into English reasonable time accommodations, consistent with State law, shall be provided. Please limit comments to three minutes.*

ORAL COMMUNICATION
*Members of the public who wish to make comment on matters not appearing on the agenda are requested to submit oral communication by email to the Committee at **mperea@tcwd.ca.gov**. Under the requirements of State Law, Directors cannot take action on items not identified on the agenda and will not make decisions on such matters. The Board President may direct District Staff to follow up on issues as may be deemed appropriate. For persons desiring to make verbal comments and utilizing a translator to present their comments into English reasonable time accommodations, consistent with State law, shall be provided. Please limit comments to three minutes.*

COMMITTEE MEMBER COMMENTS

REPORT FROM THE GENERAL MANAGER

TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING AGENDA | MAY 10, 2022

ENGINEERING MATTERS

PRESENTER(S): FERNANDO PALUDI, GENERAL MANAGER
MICHAEL PEREA, ASSISTANT GENERAL MANAGER
LORRIE LAUSTEN, DISTRICT ENGINEER

ITEM 1: ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP

RECOMMENDED ACTION:
Approve the following Engineering/Operational Committee Meeting Recap(s) and recommend that the Board receive and file same (Consent Calendar).

1. *April 6, 2022 Committee Meeting*

ITEM 2: DISCUSSION AND POSSIBLE ACTION(S) CONCERNING GOLF CLUB SEWER LIFT STATION REPAIRS & IMPROVEMENTS

RECOMMENDED ACTION:
Approve and recommend the Board of Directors ratify the purchase of three (3) replacement pumps, two (2) guild rail systems and two (2) discharge elbows from Tekdraulics for Golf Club Sewer Lift Station in the amount of $193,286.39.

ITEM 3: DISCUSSION CONCERNING THE DISTRICT'S 2021 SYSTEMWIDE MASTER PLAN AND CONDITION ASSESSMENT

RECOMMENDED ACTION:
Committee to receive project status updates at time of the Committee Meeting

ITEM 4: OTHER ENGINEERING AND OPERATIONS PROJECT UPDATES

1. Capital Improvement Plan Budget
2. SCADA Project
3. OC Rescue Mission Meter Relocation
4. AMR/AMI System Implementation
5. Other Projects

RECOMMENDED ACTION:
Committee to receive project status updates at time of the Committee Meeting.

OPERATIONAL MATTERS

PRESENTER(S): GARY KESSLER, WATER SYSTEM SUPERINTENDENT
MICHAEL PEREA, ASSISTANT GENERAL MANAGER
JASON STROUD, MAINTENANCE DEPARTMENT SUPERINTENDENT

ITEM 5: WATER SYSTEM UPDATES

RECOMMENDED ACTION:
Committee to receive system status updates. No action required.

ITEM 6: WASTEWATER SYSTEM UPDATES

RECOMMENDED ACTION:
Committee to receive system status updates. No action required.

ITEM 7: MAINTENANCE DEPARTMENT UPDATES

RECOMMENDED ACTION:
Committee to receive system status updates. No action required.

REGULATORY AND OTHER MATTERS

ITEM 8: OTHER MATTERS/REPORTS

RECOMMENDED ACTION:
Hear Other Matters/Reports that may have arisen after the posting of the agenda.

ADJOURNMENT

AVAILABILITY OF AGENDA MATERIALS
Agenda exhibits and other writings that are disclosable public records distributed to all or a majority of the members of the Trabuco Canyon Water District Board of Directors in connection with a matter subject to discussion or consideration at an open meeting of the Board of Directors are available for public inspection at the Trabuco Canyon Water District Administrative Facility, 32003 Dove Canyon Drive, Trabuco Canyon, California (District Administrative Facility) or will be posted online on the District's website located at www.tcwd.ca.gov. If such writings are distributed to members of the Board less than 72 hours prior to the meeting, they will be available online at www.tcwd.ca.gov at the same time as they are distributed to the Board Members, except that, if such writings are distributed immediately prior to or during the meeting, they will be posted online on the District's website located at www.tcwd.ca.gov.

COMPLIANCE WITH THE REQUIREMENTS OF CALIFORNIA GOVERNMENT CODE SECTION 54954.2
In compliance with California law and the Americans with Disabilities Act, if you need special disability-related modifications or accommodations, including auxiliary aids or services in order to participate in the meeting, or if you need the agenda provided in an alternative format, please contact the District Secretary at (949) 858-0277, at least 48 hours in advance of the scheduled Board meeting. Notification at least 48 hours prior to the meeting will assist the District in making reasonable arrangements to accommodate your request. The Board Meeting Room is wheelchair accessible.

TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | MAY 10, 2022

ADMINISTRATIVE MATTERS
ITEM 1: ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP

RECOMMENDED ACTION:
Approve the following Engineering/Operational Committee Meeting Recap(s) and recommend that the Board receive and file same (Consent Calendar):

1. *April 6, 2022 Committee Meeting*

CONTACTS (staff responsible): PALUDI/PEREA/SANGI

TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP | APRIL 6, 2022

DIRECTORS PRESENT
Stephen Dopudja, Committee Chair
Mike Safranski, Committee Member

STAFF PRESENT
Fernando Paludi, General Manager
Michael Perea, Assistant General Manager
Lorrie Lausten, District Engineer
Karen Warner, Principal Accountant
Gary Kessler, Water Superintendent
Jason Stroud, Maintenance Superintendent
Oscar Ulloa, Wastewater Chief Plant Operator
Lisa Marie Sangi, Executive Assistant

CONSULTANTS PRESENT
None

PUBLIC PRESENT
None

CALL MEETING TO ORDER
Director Dopudja called the April 6, 2022 Engineering/Operational Committee Meeting to order at 7:00 AM.

VISITOR PARTICIPATION
No comments were received.

ORAL COMMUNICATION
No comments were received.

COMMITTEE MEMBER COMMENTS
Director Safranski reported on his attendance at the South Orange County Agencies Group meeting, and he mentioned that the group briefly discussed the re-organization of the San Juan Basin Authority. Director Safranski thanked District staff for the facility tour.

REPORT FROM THE GENERAL MANAGER
No comments were received.

ITEM 1: ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP
Mr. Paludi presented the Engineering/Operational Committee Meeting Recap for Committee review in accordance with the agenda.

RECOMMENDED ACTION
Director Dopudja and Mr. Perea recommended that the Engineering/Operational Committee Meeting Recap(s) be forwarded to the Board of Directors for approval (Consent Calendar).

ITEM 2: DISCUSSION CONCERNING GOLF CLUB SEWER LIFT STATION REPAIRS & IMPROVEMENTS

Mr. Paludi introduced this matter for Committee consideration, and he mentioned that District staff has been working with contractors to perform multiple improvements at this facility. Ms. Lausten provided an overview of the improvements over the last year, and she reported that the first stage pumps require replacement. Discussion occurred concerning the failure of both first stage pumps. Mr. Stroud provided a review of the failure issues of the pumps. Ms. Lausten presented a proposal from Evans Hydro for the purchase of two Wilo pumps, and she recommended the approval and Board ratification

RECOMMENDED ACTION:

The Committee approved and recommended the Board of Directors ratify the purchase of two (2) replacement pumps from Evans-Hydro, Inc. in the amount of $55,912, plus tax and freight, for the Golf Club Sewer Lift Station (Action Calendar).

ITEM 3: SOCWA JPA DISCUSSIONS UPDATE

Mr. Paludi presented this matter for Committee consideration, and he provided a brief overview of the ongoing discussion concerning the Joint Powers Agreement (JPA) review. Discussion occurred certain member agency issues, including Irvine Ranch Water District (IRWD) proposal to leave the JPA and Santa Margarita Water District's (SMWD) annexation of the City of San Juan Capistrano sewer system. Mr. Paludi reported that SOCWA general counsel will provide an opinion on the process for exiting the JPA at the next Regular Board Meeting. A brief discussion occurred on administrative costs and impacts to the District.

RECOMMENDED ACTION*:*

The Committee recommended forwarding this matter to the Board for consideration and review (Action Calendar).

ITEM 4: OTHER ENGINEERING AND OPERATIONS PROJECTS,

1. 2021 System Wide Master Plan and Condition Assessment Project

Mr. Paludi introduced this matter to the Committee. Ms. Lausten highlighted the site visits and added the Wastewater Treatment Plant, and she provided an overview of the sewer system flow monitoring portion of the project. Discussion occurred concerning project completion timeline and project goals.

2. OC Rescue Mission Domestic Service Relocation

Ms. Lausten provided an update on this project, and she reported that District staff is working with GCI Construction for the onsite potholing.

3. Other Projects

Ms. Lausten provided a brief update on the SCADA Upgrade Project, and she reported that the District's remote site upgrades have been delayed due to procurement lead times. Discussion occurred concerning system security from external threats.

Mr. Paludi provided an update on the Saddle Crest Development, and he reported that the developer was currently building model homes at the lower zone.

Mr. Paludi reported that District staff will be meeting with the Saddleback Meadow developer to review the costs associate with the Harris Grade Reservoir improvements.

RECOMMENDED ACTION
The Committee received the status updates. There was no action taken.

ITEM 5: WATER SYSTEM UPDATES

Mr. Kessler reviewed the projects and repairs for a March 2022, and he reported that Water Operations staff has completed the following tasks:

1. Resumed Fire Hydrant Flushing Program and flushed 52 hydrants in Dove Canyon.
2. Installed all 4 discharge pumps at GWTF.
3. Worked with Hazen Engineering and conducted 19 fire flow tests, part of the distribution modeling.
4. The Dimension Water Treatment Plant (DWTP) is offline for approximately six (6) weeks, while the SAC Line is being repaired.
5. Worked with the Maintenance Department to reinstalled Booster Pump #1 at the Dimension Water Treatment Plant (DWTP).
6. Installed a new Rugid controller at the Robinson Ranch Pump Station.
7. Worked with the Maintenance Department to change out the level probes at the Canyon Creek Hydro Static Tank, located in the Canyon Community.

Mr. Kessler reviewed the Monthly Water System Operations Summary with the Committee. Mr. Kessler reported on a damaged air vac in the Dove Canyon community that occurred over the weekend, and subsequently repaired on Monday.

RECOMMENDED ACTION
The Committee received the status update. There was no action taken.

ITEM 6: WASTEWATER SYSTEM UPDATES

Mr. Perea formally introduced Mr. Ulloa as the District's new Wastewater Operations Superintendent, and he commended Mr. Ulloa for his commitment to the District and its customers. Mr. Ulloa reviewed the projects and repairs for March 2022, and he reported that Wastewater Operations staff had completed the following tasks:

1. Repaired a four-inch inlet reclaimed line that provides service to Ty Nursery.
2. Cleaned a v-ditch and exercised an emergency relief valve for the reclaimed reservoir at the Wastewater Treatment Plant
3. Worked with the Maintenance department to coordinate and complete the by-pass of the Golf Club Lift Station, located in the Dove Canyon Community.
4. Repaired a twelve-inch raw influent line to the SBR tanks at the Wastewater Treatment Facility.

Mr. Ulloa provided a review of the Monthly Non-Domestic Water (NDW) System Summary report for March 2022, and he provided a brief update on Dove Lake.

The Committee congratulated Mr. Ulloa on his promotion.

RECOMMENDED ACTION
The Committee received the status update. There was no action taken.

ITEM 7: MAINTENANCE DEPARTMENT UPDATES

Mr. Stroud reviewed the projects and repairs for March 2022, and he reported that Maintenance staff completed the following tasks:

1. Worked with Evans Hydro to begin installation on the rebuilt 1 CFS booster pump at the Dimension Water Treatment Plant.
2. Performed oil changes on heavy duty electrical motors.
3. Assisted the Sanitation department to completely bypass the Golf Club Lift Station and prepped the wet well for a rental submersible pump.
4. Worked with Hydrotech Electric to begin removal and re-install of new the MCC panel located at the Golf Club Lift Station.

RECOMMENDED ACTION

The Committee received the status update. There was no action taken.

ITEM 8: OTHER MATTERS/REPORTS

Mr. Paludi reported that District staff intend to agendize the Hazen and Sawyer Condition Assessment Report of the District's Wells Facility for Committee review at the next regular Engineering/Operational Committee meeting.

RECOMMENDED ACTION

There was no action taken.

ADJOURNMENT

Director Dopudja adjourned the April 6, 2022 Engineering/Operational Committee Meeting at 7:54 AM.

TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | MAY 10, 2022

ENGINEERING MATTERS
ITEM 2: DISCUSSION CONCERNING GOLF CLUB SEWER LIFT STATION REPAIRS & IMPROVEMENTS

Trabuco Canyon Water District (District) owns and operates the Golf Club Sewer Lift Station (SLS) in the Dove Canyon community adjacent to the golf club driving range. This station receives wastewater flows from majority of the community by way of Bell Canyon and Barneburg Sewer Lift Stations and gravity sewer flows, and then conveys the wastewater to the Robinson Ranch Wastewater Treatment Plant via a sewer force main on Hillrise. The station was constructed in the early 1990s and has undergone minor improvements since that time, but there are a series of critical repairs and improvements that Wastewater Operations and Maintenance Department (O/M) staff have identified for the station (Exhibit 1).

1. Sewer Force Main Isolation Valve
In March 2021, the District contracted with Ferreira Construction and Koppel for the installation of an in-line isolation valve on the force main to allow for O/M staff to replace plug valves and check valves in the Station Dry Pit. *This work is complete.*

2. Station Bypass Valve Assembly and Repair to Existing Surge Tank
In December 2021, District staff contracted with Ferreira construction and DB Sales to install a bypass valve assembly and repair the existing surge tank. The sewer bypass valve assembly is typical for most sewer pump stations to allow for both emergency and long-term repairs and improvements. *This work is complete.*

3. Electrical System Improvements-Motor Control Center (MCC) Panel
Some of the components in the MCC Panel have been replaced due to failure, but there were many other system components that have reached the end of life. In March 2022, District staff began work with Hydrotech Electrical for the replacement of the MCC. *This work is complete.*

4. **Surge Tank Relocation/Replacement**
The existing tank is in poor condition, difficult to maintain and has reached the end of its service life. Engineering is working with O/M to replace the tank, relocate it outside in front of the building at the new bypass assembly and construct a permanent fence and gate around the front of the station. *This design is in progress*.

5. Wet Well Improvements
The following items in the wet well require repair and/or replacement: pump guide rails, discharge elbows and piping replacing into the drypit on one stage, wet well coating, and wet well lid. *Procuring design proposal.*

6. Dry Pit Improvements
O/M staff have identified isolation valves, piping and appurtenances needing repair and/or replacement in the station. *Procuring design proposal.*

The station is designed with two two-stage pump systems; two Wilo pumps in the wet well (First Stage) and two Cornell pumps in the dry pit (Second Stage). In August/September 2021, both first stage pumps failed, and the station is currently utilizing a spare back-up submersible pump, along with a series of rental equipment for redundancy. District staff coordinated with Evans Hydro Inc. for the inspection of the two pumps, and it has been determined that one of the two pumps can be repaired/rebuilt. Evans Hydro has provided a quote for in-kind replacement pumps for staff consideration.

TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | MAY 10, 2022

District staff reviewed this matter with the Engineering/Operational Committee on April 6, 2022 and requested approval and subsequent Board ratification of the purchase of two new Wilo pumps for approximately $56K.
After careful consideration of the facility design and pump configuration, District Staff procured quotes from Xylem (Flygt) and Tekdraulics (Cornell) which included heavy duty discharge elbows, engineered guild rail systems and pumps that better serve the system demands with a longer service life. The following table summarizes their quotes:

PUMP QUOTES	
Company	**Quote**
Tekdraulics	$193,286.39
Xylem	$196,238.97

District staff prefers the Cornell pumps for the following reasons:

1. Matching pump configuration – all pumps would be Cornell pumps.
2. The pumps are engineered and designed to meet the unique system demands (high-head pressure)
3. Cornell pumps are made in the USA (Portland, OR) which allows for increased reliability for the available replacement parts, and possible expedited fulfillment period.

District staff recommends the purchase of the three Cornell pumps and two guide rail systems/discharge elbows quoted by Tekdraulics for a total amount of $193,286.39. More information may be presented at the time of the meeting.

FUNDING SOURCE:
Capital Improvement Program

FISCAL IMPACT (PROJECT BUDGET):
Tekdraulics Proposal: $193,286.39
Total project related expense to date: $580,000.00

ENVIRONMENTAL COMPLIANCE:
Notice of Exemption was filed with the County of Orange on November 1, 2021.

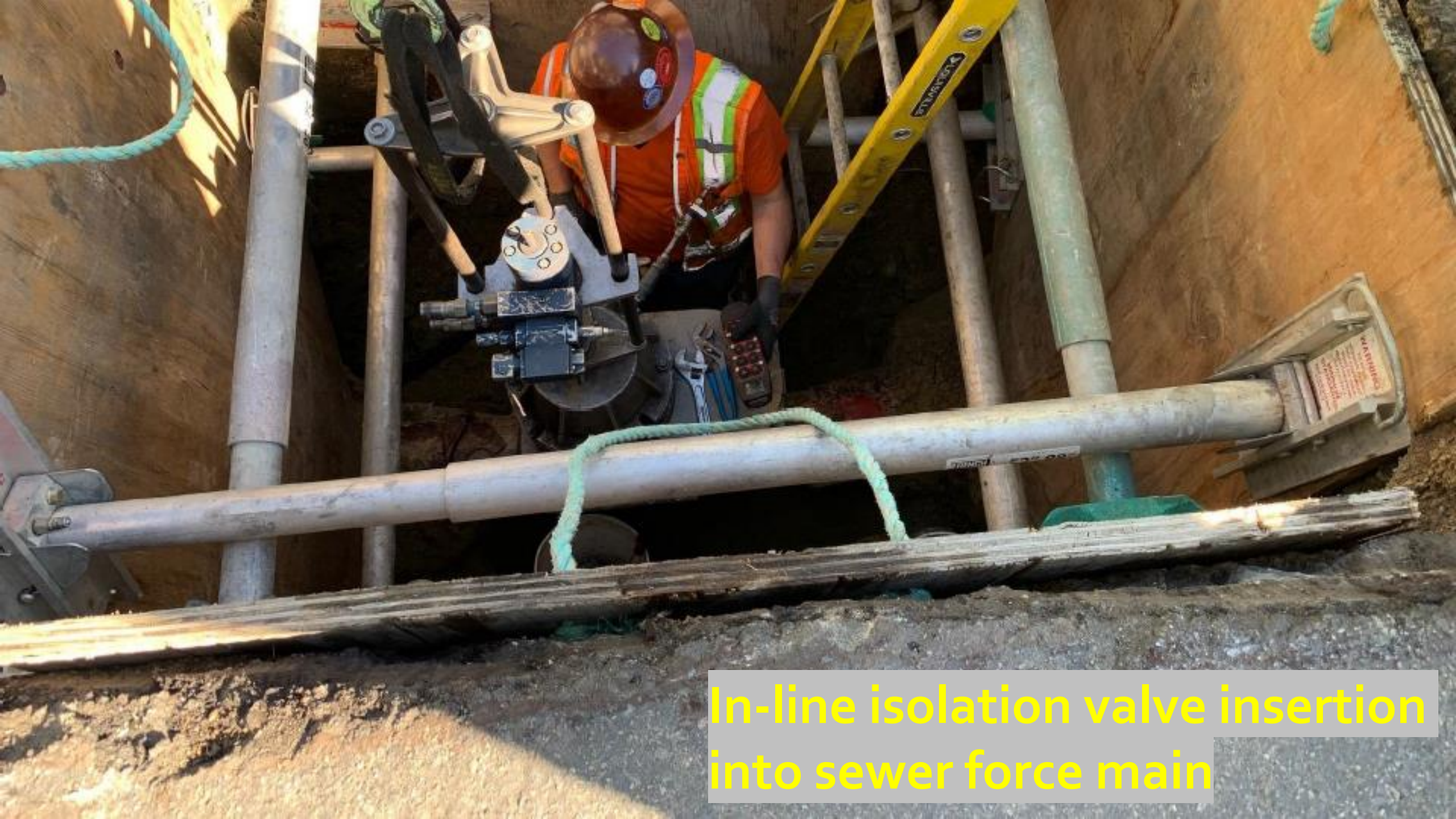
RECOMMENDED ACTION:
Approve and recommend the Board of Directors ratify the purchase of three (3) replacement pumps, two (2) guild rail systems and two (2) discharge elbows from Tekdraulics for Golf Club Sewer Lift Station in the amount of $193,286.39.

EXHIBIT(S):
1. Project Photos
2. Pump Quotes

CONTACTS (staff responsible): PALUDI/PEREA/LAUSTEN

GOLF CLUB SEWER LIFT STATION REPAIRS & IMPROVEMENTS

Trabuco Canyon Water District
E&O Meeting
5/10/2022



In-line isolation valve insertion into sewer force main

Dry Pit Surge Tank Welding Repair

Force Main Bypass Valve / Tee

Previous Motor Control Center


CAP. 2 TON
New Motor Control Center

Dry Pit, Piping, and Valves

Wet Well

xylem

Xylem Water Solutions USA, Inc.
Flygt Products

11161 Harrel Street
Mira Loma, CA 91752
Tel (951) 332-3668
Fax (951) 332-3679

April 25, 2022

ALL BIDDING CONTRACTORS

Quote # 2022-LAB-0215
Project Name: Trabuco Canyon Golf

Pumps and Accessories

Qty	Part Number	Description
		Duty Point 600GPM @ 185TDH Pit depth 29'
3	3202.095-0056	Flygt Model NP-3202.095 4" volute Submersible pump equipped with a 460 Volt / 3 phase / 60 Hz 60 HP 1750 RPM motor, 466 impeller, 1 x 50 Ft. length of SUBCAB 4G25+S(2x0,5) submersible cable, FLS leakage detector, volute is prepared for Flush Valve
1	14-69 00 09A	START UP,FLYGT,NO TAX 1-DAY
3	EPO	Epoxy Coating - Internal and External
2	540 13 05	CONNECTION,DISCH 4X4" CI
2	HiltiEpoxy	Epoxy, Anchor x 5 pcs
1	HILTI3/4x10	Hilti Anchor 3/4x10 316SS, 10 p
4	255 47 01	SLEEVE,NBR
2	14-58 91 06	HOOK,SAFETY ASSEMBLY SS
2	14-59 00 00	KIT,HARDWARE 3/8IN SS (2X)
60	14-48 71 18	CHAIN 1/2" 316SS SWL7350#
2	14-58 72 10	KIT,CHAIN FITTING 316SS+ FLYGT SWL 2500#
2	14-40 71 29	MINI-CASII/FUS 120/24VAC,24VDC
2	40-50 10 98	MINI-CASII 120V
2	661 54 01	BRACKET,GUIDE BAR U. 3" 316SS
120	14-49 01 01	TS3163 FEET 3"GUIDE RAIL 316SS
4	14-58 44 84	BRACKET,INT GB 3 X 6" 316SS+ FOR CI/DI PIPE 3231
		6" Ductile Iron discharge pipe is assumed. Int bracket every 10'. Intermediate guide bar brackets may require field modifications depending on piping configuration

Pumps and Accessories Price USD $ 168,745.09

Pump Factory Testing

Qty	Part Number	Description
3	14-69 95 14	TEST FAL 2.2 PLOTTED 3170-3301 FAL 15-900006
3	14-69 95 84	TEST FAL 2.9 DIALECT 3170-3301 FAL 15-900016

Pump Factory Testing Price USD $ 1,430.88

Total Price $ 170,175.97

Tax 7.5% (freight and start up not taxed) $12,651.00

Air Freight Charge $ 13,502.00

Total Price $ 196,238.97

FLYGT
a xylem brand

Terms & Conditions

This order is subject to the Standard Terms and Conditions of Sale – Xylem Americas effective on the date the order is accepted which terms are available at http://www.xyleminc.com/en-us/Pages/terms-conditions-of-sale.aspx and incorporated herein by reference and made a part of the agreement between the parties.

Purchase Orders: Please make purchase orders out to: Xylem Water Solutions USA, Inc.

Freight Terms: 3 DAP - Delivered At Place 08 - Jobsite (per IncoTerms 2020)
See Freight Payment (Delivery Terms) below.

Taxes: State, local and other applicable taxes are not included in this quotation.

Back Charges: Buyer shall not make purchases nor shall Buyer incur any labor that would result in a back charge to Seller without prior written consent of an authorized employee of Seller.

Shortages: Xylem will not be responsible for apparent shipment shortages or damages incurred in shipment that are not reported within two weeks from delivery to the jobsite. Damages should be noted on the receiving slip and the truck driver advised of the damages. Please contact our office as soon as possible to report damages or shortages so that replacement items can be shipped and the appropriate claims made.

Terms of Delivery: PP/Add Order Position

Terms of Payment: 90% N30 after invoice date; 10% NTE 90 days after initial invoice date.
Xylem's payment shall not be dependent upon Purchaser being paid by any third party unless Owner denies payment due to reasons solely attributable to items related to the equipment being provided by FLYGT.

Validity: This Quote is valid for thirty (30) days.
Please note that this pricing is valid for 30 days and contingent upon final approval of submittals and release to fabrication by (within 90 days of bid date).
This quotation is subject to change if any changes to the specifications or plans are made that alter the scope of supply.

Schedule: Submittals will be supplied 1 weeks after order acceptance.

Schedule: Delivery lead times after receipt of submittal approval and order acceptance.
13-15 weeks via air freight

COVID 19: Our current delivery lead-times are forecasted estimates only due to the outbreak of the COVID-19 virus pandemic and its global effects on commerce, supply chain, and logistics. Xylem will, however, use all commercially reasonable efforts to minimize any delivery delay impacts.

Start Up: One (1) day Start Up / Owner Training is included.

Warranty: Xylem Water Solutions USA, Inc.offers a commercial warranty to the original end purchaser against defects in workmanship and material.

Changes: This Quotation is based on the current design criteria provided to Xylem Water Solutions USA, Inc. Revisions may result in price changes.

Exclusions: This Quote includes only the items listed specified above.

Sincerely,

Alan Dahlqvist
Direct Sales Representative
Cell: 951/553-1493
alan.dahlqvist@xylem.com

FLYGT
a xylem brand

TEKDRAULICS

"Focused on Fluids Since 1988"

QUOTATION

Quote Number: 1431-1
Quote Date: Apr 15, 2022
Page: 1

800 South El Camino Real
Suite 202
San Clemente, CA 92672
Voice: 949-680-4800
Fax: 949-680-4802

Quoted To:

Trabuco Canyon Water District
Attention:
32003 Dove Canyon Drive
Trabuco Canyon, CA 92679

Drop Shipment

Customer ID	Good Thru	Payment Terms	Sales Rep
TCWD	5/15/22	Net 30 Days	

Quantity	Description	Unit Price	Amount
	Trabuco Canyon GOLF LS Stage 1 Pump Replacement- CORNELL 4414T SUbmersible Pumps on Guide Rails Design Point 1: 600 GPM @ 185' TDH		
3.00	Cornell 4414T-SUB-60-4 60 HP Submersible Pump, 460v/3ph/60cy with RELIANCE Motor (1 Spare unit)	46,988.00	140,964.00
3.00	Optional NW Factory Pump Performance Testing, HI LEVEL 1B, Vibration test, Hydro Test (Can add two weeks to delivery)	2,620.00	7,860.00
2.00	4" HEAVY DUTY Auto Coupling discharge elbow/complete guide rail system for 29' setting	13,985.00	27,970.00
	Same 4414T Model and design conditions as Stage 2 Dry Pit Pumps, but submersible Standard all iron materials of construction *420 SS heat treated wear rings Vertical close coupled configuration 60 HP/1800 RPM/460/3/60/Reliance submersible motor *with 50 feet of power and control cable *per Cornell's submersible motor spec Scotchkote 134 Fusion Bonded Epoxy coating *on the interior and the exterior of the pump end, and discharge elbow, autocopuling Approx. 990 lbs. each, shipping weight Approx. 20 to 22 weeks to ship, after receipt of order (currently)		

Subtotal	Continued
Sales Tax	Continued
Freight	Continued
TOTAL	**Continued**

TEKDRAULICS

"Focused on Fluids Since 1988"

QUOTATION

Quote Number: 1431-1
Quote Date: Apr 15, 2022
Page: 2

800 South El Camino Real
Suite 202
San Clemente, CA 92672
Voice: 949-680-4800
Fax: 949-680-4802

Quoted To:
Trabuco Canyon Water District Attention: 32003 Dove Canyon Drive Trabuco Canyon, CA 92679

Drop Shipment

Customer ID	Good Thru	Payment Terms	Sales Rep
TCWD	5/15/22	Net 30 Days	

Quantity	Description	Unit Price	Amount
	60 HP, 1800 RPM, 3/60/460 Submersible Motor 1.15 Service Factor NC Thermostats Moisture Sensors - Epoxy finish coat 50' Power and Control Cables Includes Pump Monitor Relay OPTIONAL- HI Level 1B Performance Test and Report Quote does not include spare parts, shipping, or anything else not specifically listed above. HEAVY DUTY GUIDE Rail system includes 2" 316 SS sched 40 guide rails for 29' setting (two guide rails per pump), 304SS upper guide & intermediate guide brackets, 3' SS lifting chain sling, Nylon wrapped SS lifting cable. 4"x4" Heavy Duty Discharge elbow and autocoupling guide claw is coated with SK134 Fusion bonded epoxy. 1 spare guide rail claw adapter and SS Lifting sling to be provided for spare pump. Delivery is estimated 20-22 weeks from acceptance of PO/submittal. Special Pricing for three pumps. Freight costs are estimated for 3 ea. pumps, with 2 each complete		

Subtotal	Continued
Sales Tax	Continued
Freight	Continued
TOTAL	**Continued**

TEKDRAULICS

"Focused on Fluids Since 1988"

QUOTATION

Quote Number: 1431-1
Quote Date: Apr 15, 2022
Page: 3

800 South El Camino Real
Suite 202
San Clemente, CA 92672
Voice: 949-680-4800
Fax: 949-680-4802

Quoted To:
Trabuco Canyon Water District Attention: 32003 Dove Canyon Drive Trabuco Canyon, CA 92679

Drop Shipment

Customer ID	Good Thru	Payment Terms	Sales Rep
TCWD	5/15/22	Net 30 Days	

Quantity	Description	Unit Price	Amount
	guide rail assemblies.		

Subtotal	176,794.00
Sales Tax	13,092.39
Freight	3,400.00
TOTAL	**193,286.39**

Pump Data Sheet - Cornell

Company: TEKDRAULICS
Name: Golf LS Sub
Date: 04/01/2022

Pump:

		Dimensions:	
Size:	4414T	Suction:	4 in
Type:	Encl Solids Handling	Discharge:	4 in
Synch Speed:	1800 rpm		
Dia:	13.3125 in		
Curve:	4414T18		

Fluid:

Name:	Water		
SG:	1	Vapor Pressure:	0.256 psi a
Density:	62.4 lb/ft³	Atm Pressure:	14.7 psi a
Viscosity:	1.1 cP		
Temperature:	60 °F	Margin Ratio:	1

Search Criteria:

Flow:	600 US gpm	Near Miss:	---
Head:	185 ft	Static Head:	0 ft

Pump Limits:

Temperature:	250 °F	Sphere Size:	3 in
Wkg Pressure:	150 psi g		

Motor:

Standard:	NEMA	Size:	75 hp
Enclosure:	TEFC	Speed:	1800 rpm
Frame:	365T		
Sizing Criteria:	Max Power on Design Curve		

Pump Selection Warnings:

None

--- Duty Point ---

Flow:	600 US gpm
Head:	185 ft
Eff:	67.4%
Power:	41.4 hp
NPSHr:	8.85 ft
Speed:	1760 rpm

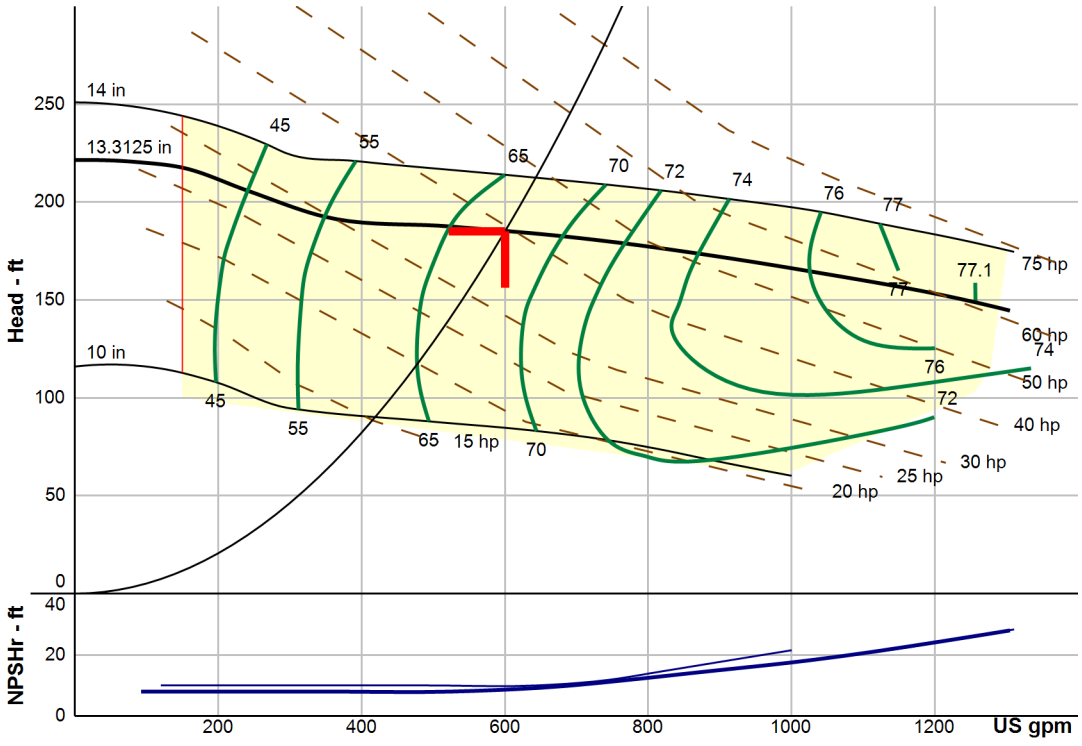
--- Design Curve ---

Shutoff Head:	221 ft
Shutoff dP:	95.9 psi
Min Flow:	150 US gpm

BEP: 77.1% @ 1257 US gpm
NOL Power:
62 hp @ 1305 US gpm

--- Max Curve ---

Max Power:
73.9 hp @ 1310 US gpm



Min flow line represents the absolute lowest flow pump can operate. Consult with factory if operating below 50% of BEP flow

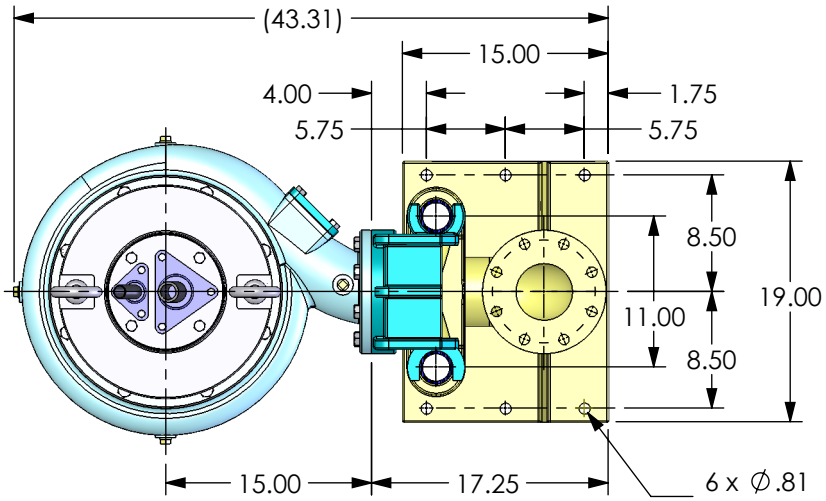
Performance Evaluation:

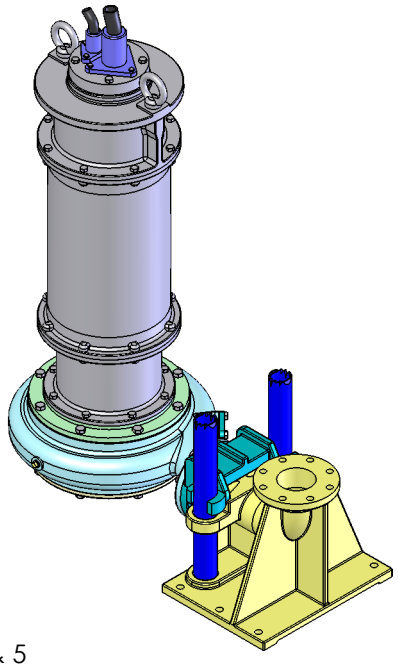
Flow	Speed	Head	Efficiency	Power	NPSHr
US gpm	rpm	ft	%	hp	ft
720	1760	181	71	46.3	10.6
600	1760	185	67	41.4	8.85
480	1760	189	63	36.3	7.99
360	1760	192	56	31.3	8
240	1760	206	45	27.8	8

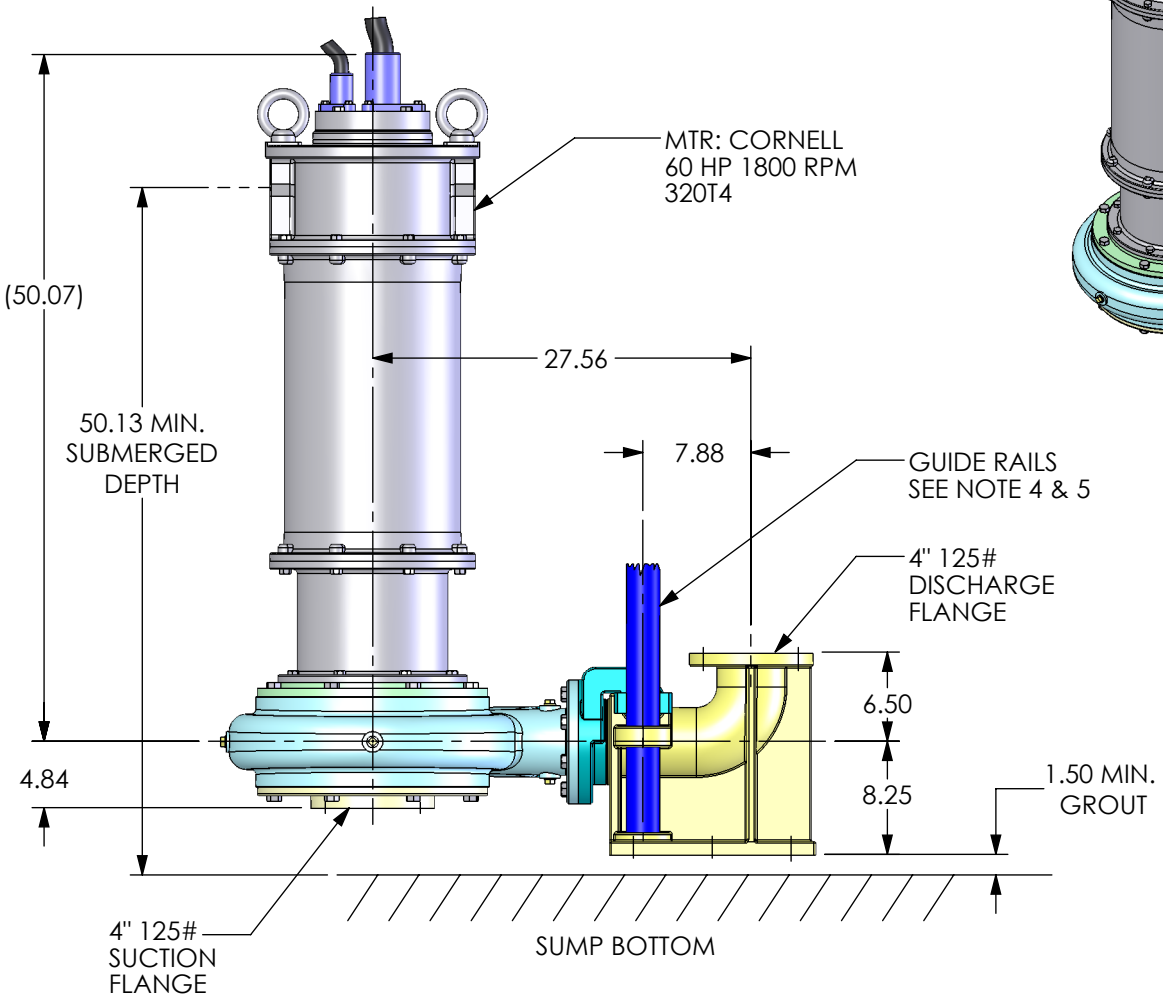
EXAMPLE DRAWING OF CORNELL 60 HP SUB WITH HEAVY DUTY GUIDE RAIL SYSTEM

SW11192

NOTE:
1. OVERALL DIMENSION MAY VARY ± .12
2. MOTOR REF: A22046Q
3. AUTO COUPLING REF: BML588A-A00
4. GUIDE RAILS REQUIRE UPPER GUIDE BRACKET, POSSIBLY MOUNTED TO LID OF PIT (NOT SHOWN).
5. ONE INTERMEDIATE GUIDE BRACKET MOUNTED TO DISCHARGE PIPE IS RECOMMENDED PER 20' OF GUIDE RAIL (NOT SHOWN).







8/27/14

REV. NO.	DESCRIPTION	DATE	BY
	-SUB T2 SGL - A21539 - 4" AUTO CPL. - 320T4	APROX. WEIGHT. (LB.)	1304
DR. GH	CHECKED SP	DATE 8/27/14	SCALE TO SCALE
		JOB NO.	
		DWG. NO.	SW11192

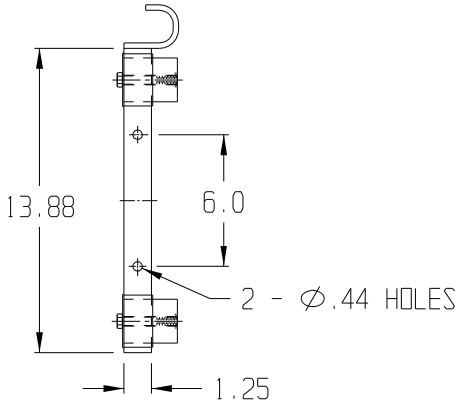
CORNELL ®

CORNELL PUMP COMPANY PORTLAND, OREGON

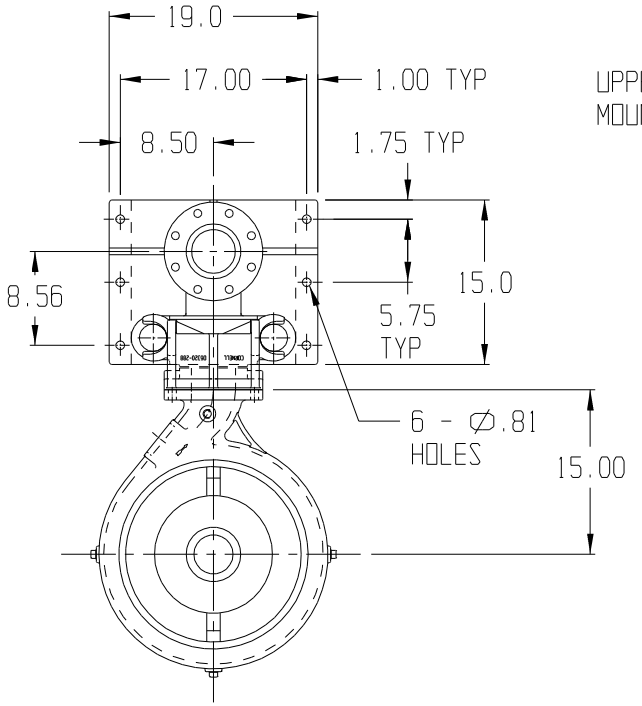
EXAMPLE DRAWING OF 4" CORNELL 60 HP SUB WITH HEAVY DUTY GUIDE RAIL SYSTEM -Reliance Motor

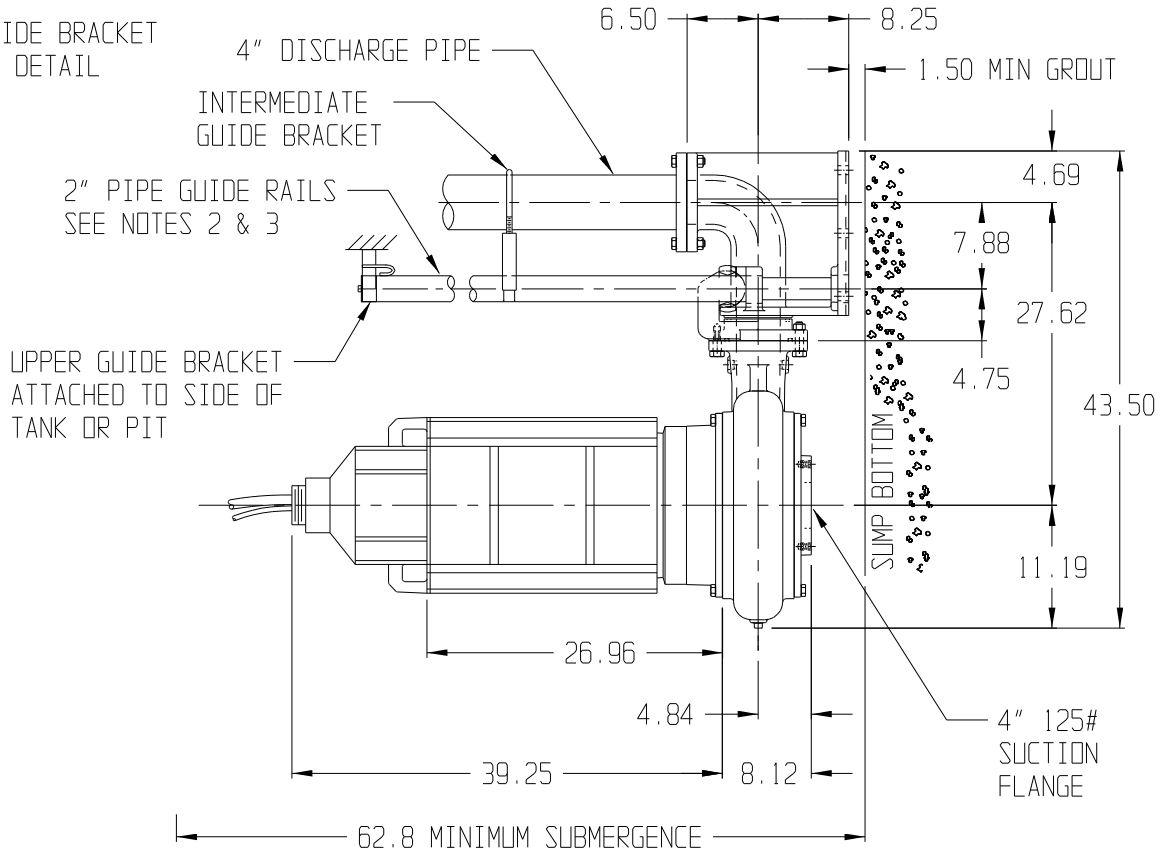
F12572

MODEL: 4NHDH-SUB
MOTOR: 60 HP, 1800 RPM,
RELIANCE 320TY
DIM SHEET 66930-257
ELBOW: CORNELL 4X4 AUTOCOUPLING



UPPER GUIDE BRACKET
MOUNTING DETAIL





NOTES:
1. DIMENSIONS MAY VARY ± .12".
2. GUIDE RAILS REQUIRE UPPER GUIDE BRACKET POSSIBLY MOUNTED TO LID OF PIT.
3. ONE INTERMEDIATE GUIDE BRACKET MOUNTED TO DISCHARGE PIPE IS RECOMMENDED PER 20' OF GUIDE RAIL.

CORNELL

REV. NO.	DESCRIPTION	DATE	BY

FOUNDATION PRINT: 4NHDH-SUB, 4X4, MTR (60-4)

PATT. NO.

JOB NO.

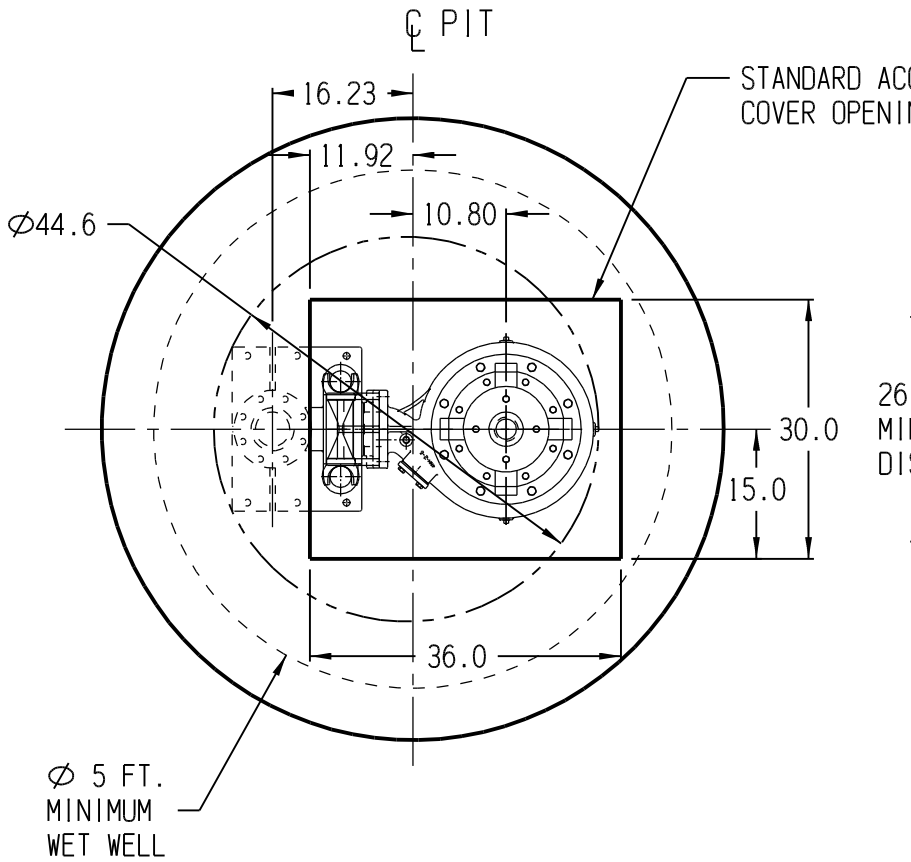
DR.	CHECKED	DATE	SCALE
KHL	DT	8-30-07	TO SCALE

DWG NO. F12572

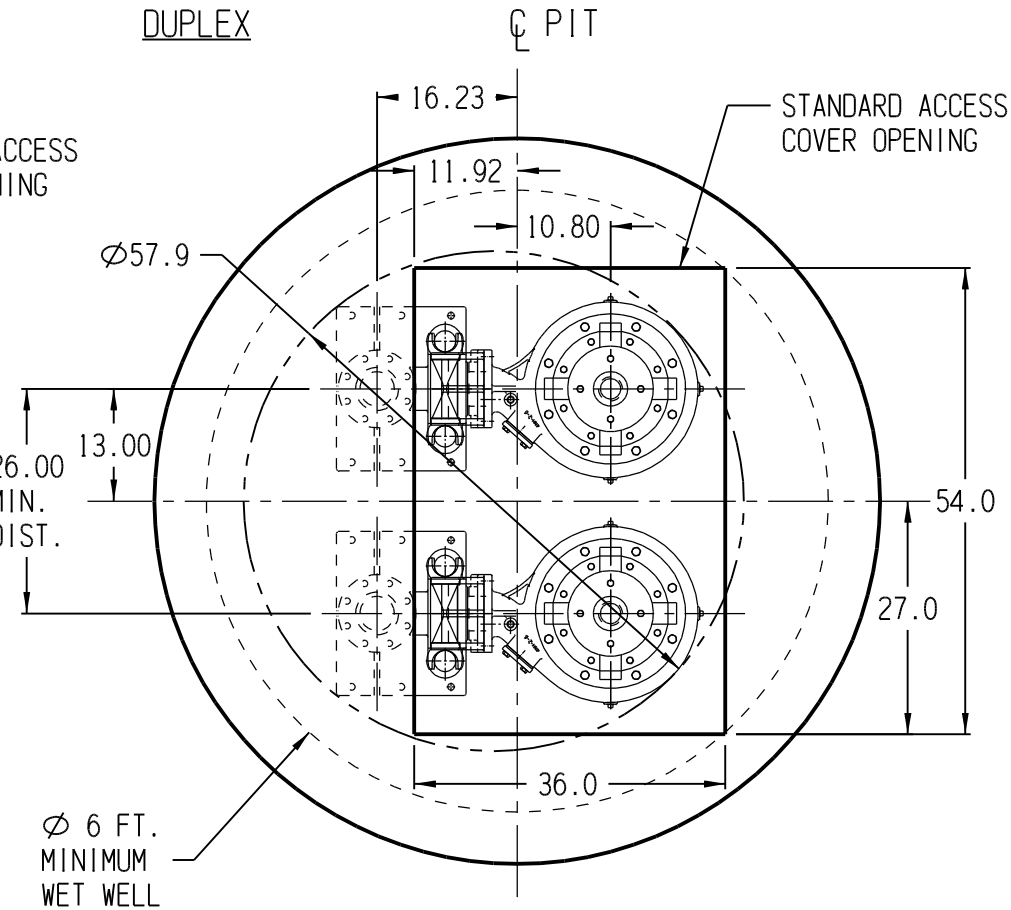
CORNELL PUMP COMPANY PORTLAND, OREGON

F12940

SIMPLEX



DUPLEX



NOTES:
1. DIMENSIONS MAY VARY ± .12".
2. CONFIGURATION AND DIMS. SHOWN ARE SUGGESTED REQUIREMENTS ONLY. LOCATION AND ARRANGEMENT OF VALVES AND PIPING, ETC. ARE TO BE SPECIFIED BY THE ENGINEER AND ARE SUBJECT TO THEIR APPROVAL.

LIFT STATION DIMENSIONS: 4414T-SUB, 4x4

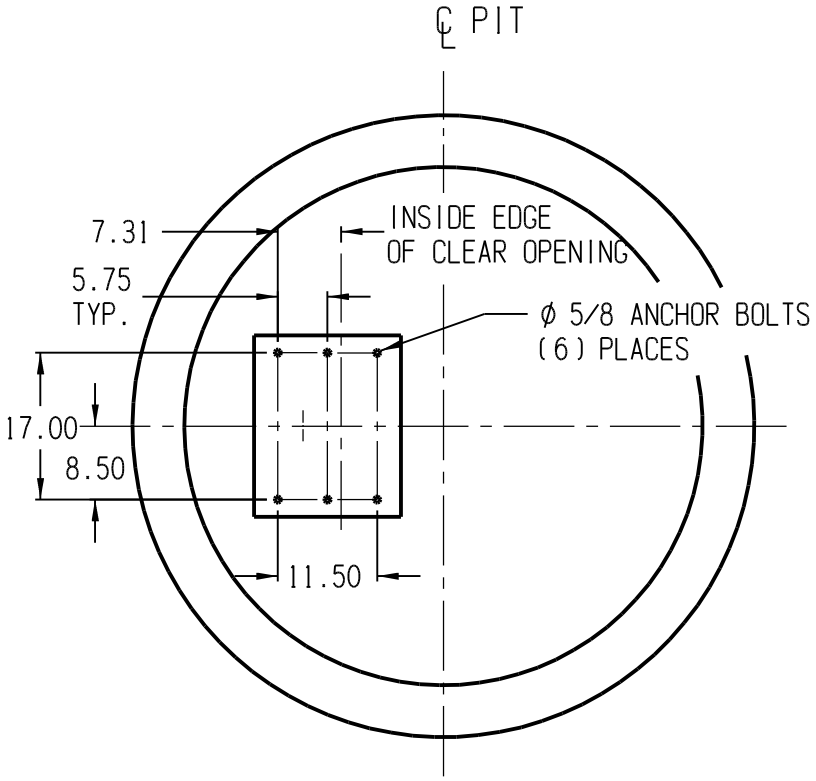
DR.	CHECKED	DATE	SCALE
JDA	--	04-06-2009	NONE

CORNELL PUMP COMPANY PORTLAND, OREGON

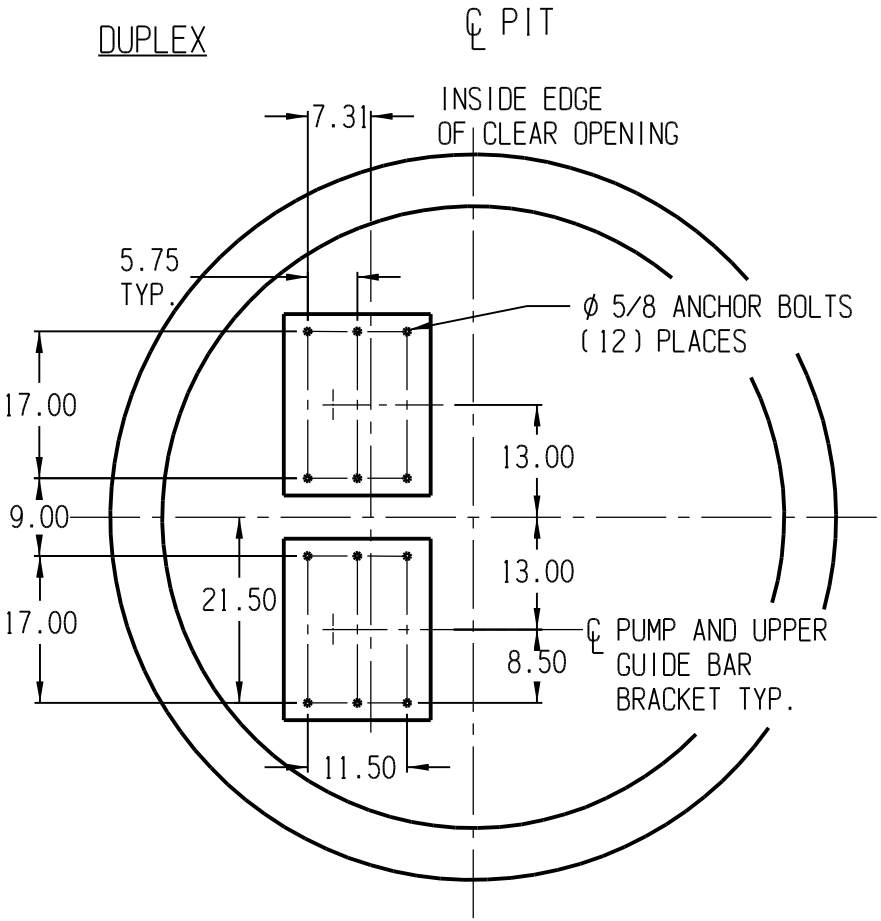
PAT. NO.
JOB. NO.
DWG NO. F12940

F12941

SIMPLEX



DUPLEX



NOTES:
1. DIMENSIONS MAY VARY ± .12".
2. CONFIGURATION AND DIMS. SHOWN ARE SUGGESTED REQUIREMENTS ONLY. LOCATION AND ARRANGEMENT OF VALVES AND PIPING, ETC. ARE TO BE SPECIFIED BY THE ENGINEER AND ARE SUBJECT TO THEIR APPROVAL.
3. LOCATE ANCHOR BOLTS USING INSIDE EDGE OF CLEAR OPENING AND PUMP CENTERLINE AS REFERENCE POINT. BOLT LOCATION MUST BE HELD TO MAINTAIN EXACT POSITION OF PUMP TO CLEAR OPENING.

LIFT STATION LAYOUT: 4414T-SUB, 4x4

DR.	CHECKED	DATE	SCALE
JDA	--	04-06-2009	NONE

CORNELL PUMP COMPANY PORTLAND, OREGON

PAT. NO.
JOB. NO.
DWG NO. F12941

BALDOR • RELIANCE

Submersible Motors Application in Water and Sewage U/L listed, Class 1, Groups C & D

SPECIFICATIONS FOR SUBMERSIBLE MOTORS:

1-450 HP
Submersible Wet Pit
15 min in air

1-150 HP
Submersible Dry Pit
Continuous in air

1.0 SCOPE

This specification details the mechanical and electrical requirements for squirrel-cage induction motors, both single and three phase, designed for wet well and dry well submersible applications in water and sewage.

It is the intent of this specification to define submersible premium quality motors which will provide efficient operation with high mechanical integrity under adverse operating conditions for maximum life and minimum life cycle costs. This specification covers sewage wet well and dry well applications defined by the National Electric Code as Class 1: Division 1, hazardous locations section 501-8 (a) requiring explosion proof construction.

2.0 GENERAL

2.1 All motors covered by this specification shall conform to the latest applicable requirements of NEMA, IEEE, ANSI, and NEC standards.

2.2 Motors shall be designed for continuous submerged duty in water and sewage, and minimum 15 minute duty continuous in air under full load operating conditions. Motors used in dry well operation shall be designed for continuous in air under full load operating conditions.

2.3 Three (3) phase shall be rated 200/400, 230/460 or 575 volt. Single voltage motors will also be available. Single phase motors shall be rated 115/230 volts. Multi-voltage motors shall be final connected for the highest voltage unless specified by customer and designed for easy field reconnection.

2.4 Ratings will be based on 40 C ambient conditions.

2.5 Motor construction shall be designed to withstand 100 psi* water pressure at all seal locations. Maximum submerged depth is 160 feet.

*Total sum of operating depth and reflected pump pressure

2.6 All motors shall be furnished with Class F rated insulation materials or better. Insulation materials rated lower than Class F (Class B or A) are specifically prohibited.

2.7 Motors 1 horsepower up to and including 135 horsepower, shall be rated as Class F, 1.15 service factor, Class 1, Groups C& D. Motors under 1 HP shall be rated as Class B, 1.0 service factor, Class 1, Group D.

2.8 All motors will be CSA (Canadian Standard Association) and U.L (Underwriters Laboratories) approved and nameplated accordingly.

2.9 All motors shall be manufactured in the United States of America. The ability to provide any and all replacement parts, engineering design support, complete dynamometer testing, and U/L rerate capability shall be provided domestically.

3.0 MECHANICAL

3.1.0 Bearings and Lubrication

3.1.1 Bearings shall be ball, single row, deep groove, Conrad type, and shall have a Class 3 internal fit conforming to AFBMA Std. 20. Standard bearing size for 440TY frame is 7222 duplex bearing. Other arrangements are available depending on shaft loading. Please contact your local Baldor representative for assistance.

3.1.2 Bearing shall be selected to provide a minimum L10 rating life of 17,500 hours.

3.1.3 The motor shall be designed to limit the bearing temperature rise to a maximum of 60 degree C under full load conditions.

3.1.4 Motors shall be greased by the manufacturer with a premium moisture resistant polyurea thickened grease containing rust inhibitors and suitable for operation over a temperature range of -25 degree C to + 120 degree C.

3.2.0 Shaft Seal

3.2.1 Two independently-mounted mechanical face type seals shall be provided. The inner and outer seals shall be separated by an oil filled chamber. The oil chamber shall act as a barrier to trap moisture and provide sufficient time for a planned shutdown. The oil shall also provide lubrication to the internal seal.

3.2.2 Standard Type 21, Type 42, or Type 43, U.L approved seals shall be provided. Carbon rotating faces and ceramic stationary faces are standard. Optional seal constructions are available. See chart 1.

Seal	Description	Application
Type 21 Carbon Ceramic Faces	Standard seal offering. A general purpose seal of stainless steel construction with carbon ceramic seal faces.	Used wastewater applications with relatively clean effluent.
Type 21 Tungsten Carbide Faces	Same type of seal except with tungsten carbide faces. Harder seal faces.	For more demanding applications, more viscous fluid.
Type 21 Silicon Carbide Faces	Same type of seal except with silicon carbide faces.	For the most demanding, slurry type applications.
Hydropad Seal	Special seal design with hydropad scallops to run cooler.	Use in low specific gravity, light lubricity. Never operate in a dry condition.

3.2.2a Buna-N O-rings and elastomers are standard. Viton elastomers are recommended for ambients of 61 C and higher.

3.2.3 The outer seal construction shall be designed for easy replacement.

3.2.4 The outer seal assembly is selected to prevent the entrance of moisture into the motor oil chamber. The OEM is responsible for protecting the outer seal from exposure to solids and foreign materials (such as banding, ropes, or strings). It is the responsibility of the pump OEM to insure the outer seal is lubricated by the effluent for both 15 minute in air and continuous in air applications.

3.2.5 In compliance with U/L standards for explosion proof motors, a flamepath shall be proved by a labyrinth slinger in the bottom flange in order to prevent the ignition of ambient gases. Under such conditions the seal design shall allow for pressure relief across either seal face.

3.3.0 MOISTURE DETECTOR SYSTEM

3.3.1 Warrick type, dual (2) moisture sensing probes are to be provided that extend into the oil chamber to detect the presence of moisture should the outer seal fail.

3.3.2 The moisture detection system shall be selected by the customer to utilize the Warrick sensing probes. A relay, Warrick type 2810 or equivalent must be provided by others. For additional information on the moisture probes and relay go to www.gemssensors.com.

3.4.0 CAP/CABLE ASSEMBLY

3.4.1 The power cable and cap assembly shall be designed to prevent moisture from wicking through the cable assembly even when the cable jacket has been punctured.

3.4.2 Power and control cable entry into the lead connection chamber shall be epoxy encapsulated for positive moisture sealing.

3.4.3 A Buna-N power and control cable grommet shall be provided in addition to the epoxy filled leads.

3.5.0 ENCLOSURE AND SHAFT

3.5.1 The motor enclosure including frame, end brackets, flange and cap assembly shall be cast iron ASTM type A-48, Class 25 or better.

3.5.2 Motor 180 through 360 frame's construction will not have fins and will be a smooth surface to prevent the clogging of solids and provide for easy cleaning. 440 frames are constructed with finned stator frames and smooth end brackets.

3.5.3 The top end bracket will include integrally cast provisions for vertical lifting capability.

3.5.4 All mating frame fits to have rabbet joints with large overlap as well as O-ring shall be Buna-N (nitrile). Viton O-rings may be supplied as an option and are required for ambient conditions of 61 degrees C and higher.

3.5.5 Motor shaft material is 416 stainless steel. Other materials available as options are 303, 304, 410 stainless steel, 17-4PH, Carpenter 20, Monel, or Nitronic 50.

3.5.6 All external hardware including the motor nameplate shall be made of stainless steel.

3.5.7 Motor rotor construction shall be die cast aluminum. Rotors shall be dynamically balanced to NEMA limits per MG1-7.8.2 Table 7-1. Balance weights if required shall be secured to the rotor fan blades by rivets. Machine screws and nuts are prohibited.

3.5.8 The frame, opposite drive end bracket, and cable cap assembly shall receive an alkyd primer and epoxy ester finish coat of high grade paint to resist rust and corrosion.

3.5.9 The drive end bracket will have oil fill and drain holes.

4.0 ELECTRICAL

4.1 All motors shall successfully operate under power supply variations per NEMA MG1-14.30.

4.2 Motors shall be designed to limit the maximum surface temperature to NEC specifications for Division 1, Class 1, Group D or Class 1, Group C&D for hazardous locations.

4.3 All motors shall be NEMA Design B or A with torque and starting current in accordance with NEMA MG-1.

4.4 Motors shall have copper windings.

4.5 Motor insulation system shall be Class F minimum, utilizing material and insulation systems evaluated in accordance with IEEE 117 classification tests.

4.6 Motor leads shall be nonwicking type, Class F temperature rating or better and permanently numbered for identification.

4.7 The stator insulation system shall be treated with a non hydroscopic epoxy varnish with a dip and bake process.

4.8 All motors to include two (2) normally closed thermostats connected in series and embedded in adjoining phases as required by Underwriters Laboratories for motors of 1 HP or higher.

4.9 All motors operated on inverter power will be rated as Class 1, Group D with a T2A temperature code.

4.10 Each completed and assembled motor shall receive a routine factory test per NEMA MG-1. Tests are in accordance with IEEE Std. 112.

P.O. Box 2400, Fort Smith, AR 72902-2400 U.S.A., Ph: (1) 479.646.4711, Fax (1) 479.648.5792, International Fax (1) 479.648.5895
Baldor•Dodge®
6040 Ponders Court, Greenville, SC 29615-4617 U.S.A., Ph: (1) 864.297.4800, Fax: (1) 864.281.2433
www.baldor.com

Pump Monitor Relay PMR1

MADE IN THE U.S.A.

UL FILE #E101681

OPERATION

The Pump Monitor Relay provides Motor Over Temperature and Seal Leakage alarms for Submersible Pumps.

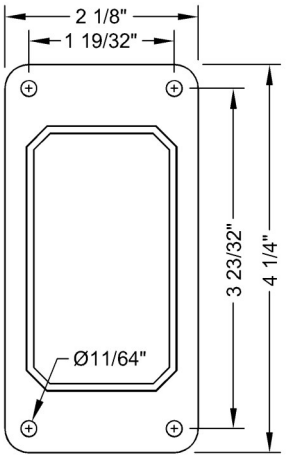
Motor Over Temperature Alarm - The unit applies a low voltage DC signal to the Motor Thermal Sensor to check its status. If the unit detects that the Motor Thermal Sensor contacts are closed (normal condition), the Overtemp indication remains off, and the Overtemp Relay is energized closing the contacts between terminals 2 and 11.

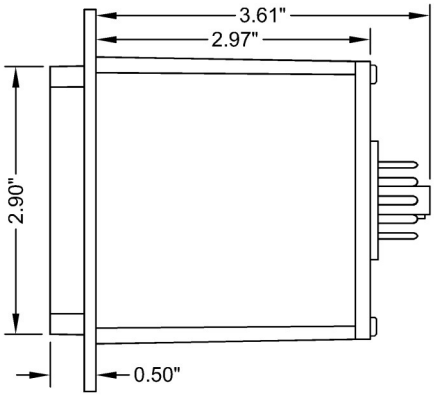
If the Motor Thermal Sensor contacts open (Over Temperature condition), the Overtemp Indication is turned on and the Overtemp Alarm Relay is de-energized opening the contacts between terminals 2 and 11 and closing the contacts between terminals 2 and 1.

When the High Motor Temperature condition has cleared, the unit will reset based on the position of Alarm Reset Mode Select Switch (Auto or Manual). When in the Auto position, the Overtemp Alarm resets automatically. If the switch is in the Manual position, the Overtemp Reset Push-button must be pushed for approximately 1.5 seconds to clear the alarm.

Seal Leakage Alarm - The unit detects moisture inside a pump motor by using a low voltage AC signal to measure the resistance between a single (or dual) Leakage Probe(s) and the grounded motor housing, or across two Leakage Probes. A Seal Leakage condition is considered present when the amount of moisture in the motor causes the resistance between terminal 6 and 5 to drop below the setting on the potentiometer. When this occurs the unit turns on the Leakage Indication and energizes the Leakage Alarm Relay closing the contacts between terminals 9 and 10.

The alarm trip point may be set by the following procedure: Isolate the Leakage Probe(s) from terminals 5 and 6. Connect a resistor, with the desired trip value, across terminals 5 and 6. Slowly adjust the potentiometer to the point where the alarm turns on. Remove the resistor and reconnect to the Leakage Probe(s).





SPECIFICATIONS

Input Power:	120 VAC ±10%, 7.0 VA max
Output Rating:	8A Resistive @ 120VAC
Operating Temp:	-20°C to +65 °C
Storage Temp:	-45°C to +85 °C
Temp Sensor Voltage:	6.6 VDC ±10%
Leak Sensor Voltage:	4.7 VAC ±10%
Enclosure:	White Lexan
Base:	Phenolic

ORDERING INFORMATION

Part Number: PMR1

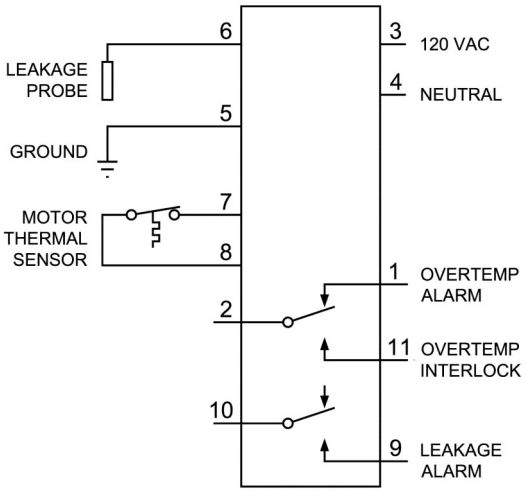
2464 Vulcan Road, Apopka, Florida 32703 • (407) 299-3825 • www.mpelectronics.com

Pump Monitor Relay

CONNECTION DIAGRAMS

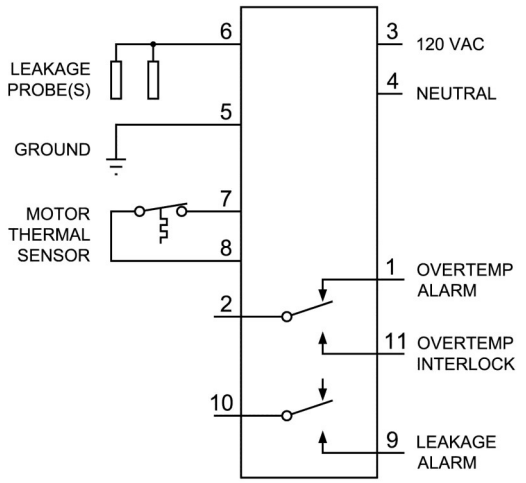
CHECKS RESISTANCE BETWEEN

ONE PROBE AND MOTOR HOUSING



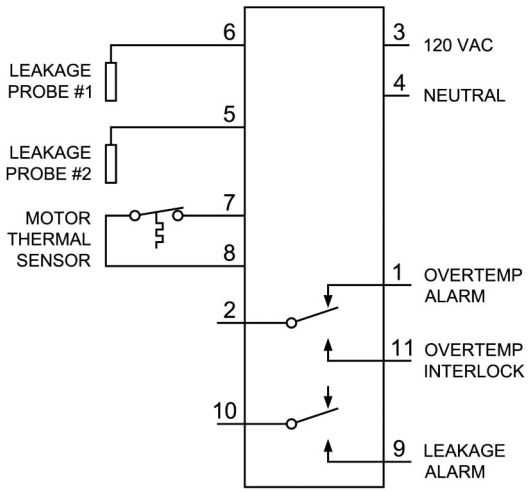
CHECKS RESISTANCE BETWEEN

TWO PROBES AND MOTOR HOUSING



CHECKS RESISTANCE BETWEEN

TWO PROBES



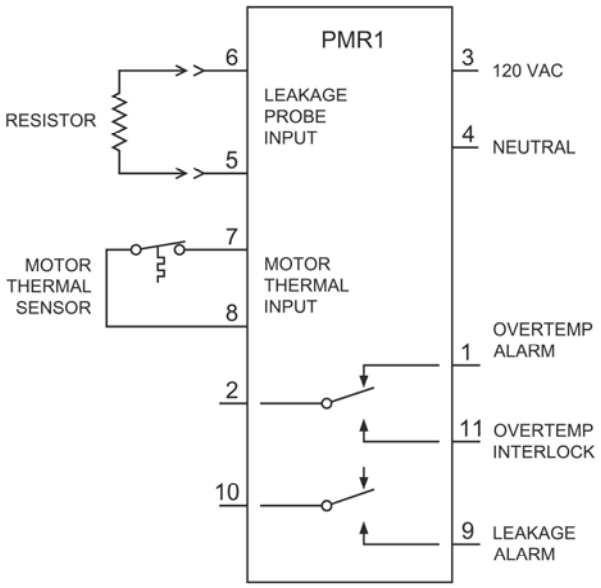
Pump Monitor Relay PMR1

How to Adjust the Leakage Alarm

The Leakage Alarm trip point may be set by the following procedure:

1) Temporarily remove the Leakage Probe Sensor wires from terminals 5 and 6.
2) Temporarily connect a resistor, with the desired trip value, across terminals 5 and 6, as shown below.
3) Slowly adjust the potentiometer to the point where the alarm turns on.
4) Remove the resistor and reconnect to the Leakage Probe Sensor wires.

Leakage Alarm Adjustment - Connection Diagram



Recommended Resistor Values:

For pump in Typical Sewage with Conductance Type Leakage Probe Sensor:	20K Ohm
For pump in Storm Water with Conductance Type Leakage Probe Sensor:	50K Ohm
For pump in Typical Sewage or Storm Water with a Float Type Leakage Probe Sensor:	20K Ohm

Specification: Pump Monitor Relay

The Pump Monitoring Relay shall perform both Motor Over-Temperature and Seal Leakage Monitoring in one unit. The unit shall be powered by 120VAC, with relay contacts rated for 8 Amps at 120VAC.

The Pump Monitoring Relay shall be able to be mounted on the deadfront door of the control panel so that the deadfront door need not be opened to see the status of either the Seal Leakage condition or the Pump Over-Temperature status.

The front of the Pump Monitoring Relay shall contain an LED indicator for power, an LED indicator for a Seal Leakage condition, and an LED indicator for an Over-Temperature condition.

The front of the Pump Monitoring Relay shall also contain a selector switch to choose between “Auto Reset” and “Manual Reset”. There shall be a Over-Temperature Reset pushbutton to reset the Pump Monitor relay once the Over-Temperature condition has cleared.

The front of the Pump Monitoring Relay shall also contain a potentiometer adjustment for setting where the unit will trip the alarm for the Seal Leakage condition.

The Pump Monitor Relay shall apply a low voltage DC signal to the Motor Thermal Sensor to check its status. When the Pump Monitor Relay detects that the Motor Thermal Sensor contacts are closed (normal condition), the Over-Temperature indicator shall remain off, and the Over-Temperature Relay shall be energized, closing the contacts between terminals 2 and 11.

When the Motor Thermal Sensor contacts open (Over-Temperature condition), the Over-Temperature Indicator shall energize, and the Over-Temperature Alarm Relay shall de-energize, opening the contacts between terminals 2 and 11 and closing the contacts between terminals 2 and 1.

When the Over-Temperature condition has cleared, the Pump Monitor Relay shall reset based on the selection of Alarm Reset Mode Select Switch (Auto or Manual). When in the Auto position, the Over-Temperature Alarm shall reset automatically. When in the Manual position, the Over-Temperature Reset Push-button must be pushed for approximately 1.5 seconds to clear the alarm.

The Pump Monitor Relay shall detect moisture inside a pump motor by using a low voltage AC signal to measure the resistance between a single (or dual) Leakage Probe(s) and the grounded motor housing, or between two Leakage Probes. A Seal Leakage condition shall be considered present when the amount of moisture in the motor causes the resistance between terminal 6 and 5 to drop below the setting on the potentiometer. When this condition exists, the Pump Monitor Relay shall turn on the Leakage Indicator and energizes the Leakage Alarm Relay, closing the contacts between terminals 9 and 10.

The leakage alarm trip point shall be set by the following procedure: Isolate the Leakage Probe(s) from terminals 5 and 6. Connect a resistor with the desired trip value across terminals 5 and 6. Slowly adjust the potentiometer to the point where the alarm turns on. Remove the resistor and reconnect to the Leakage Probe(s).

The Pump Monitor Relay shall be part number PMR1, as manufactured by Motor Protection Electronics, Apopka, Florida, 407-299-3825.

TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | MAY 10, 2022

ENGINEERING MATTER
ITEM 3: DISCUSSION CONCERNING THE DISTRICT'S 2021 SYSTEMWIDE MASTER PLAN AND CONDITION ASSESSMENT

In 1999, Trabuco Canyon Water District (District) approved the Water, Wastewater and Recycled Water Master Plan (Master Plan) developed by Montgomery Watson. Since that time, the District has evolved into a fully developed, and nearly a "built out" community. Several of the Capital Improvement Projects (CIP) and recommended actions identified in the 1999 Master Plan have been implemented. The District recognizes the need to update the 1999 Master Plan and develop the tools needed to assist in planning, operating, and maintaining District aging water, non-domestic water systems and sewer infrastructure. As the District's infrastructure ages, it is crucial to identify the needed system improvements with particular attention to the condition and operation of existing reservoirs, pump stations, lift stations, and treatment faciliies and allowing sufficient time to plan, finance, and construct the improvements.

At the October 21, 2021 Regular Board Meeting, the Board of Directors authorized the General Manager to execute a contract with Hazen Sawyer (Hazen) for the Districts 2021 Systemwide Master Plan and Condition Assessment, for 566,520, with a contingency of$25,000, for a not to exceed amount of $591,520. At the February 17, 2022 Regular Board Meeting, the Board of Directors authorized the General Manager to approve an amendment with Hazen for the Condition Assessment of the Robinson Ranch Wastewater Treatment Plant in the amount of $66,780. An updated project schedule is included as Exhibit 1 and the following summarized the project progress:

- Completed:
    - Field Assessments/comprehensive site visits
    - Hydraulic model software selection workshop
    - Fire hydrant flow testing at 18 locations with Staff
    - Sewer flows monitors placed at 8 sites for 3 weeks (ADS)
    - Hydraulic system schematics developed
    - Rose and Lang Wells Technical Memorandum completed (Exhibit 2)
- In Progress:
    - Asset register, condition assessment analysis and recommendations
    - Collection of SCADA data
    - Building Models
    - Master Plan Report/CIP Recommendations

FUNDING SOURCE:
General Fund

FISCAL IMPACT (PROJECT BUDGET):
Approved: $591,520
Revised: $658,300

ENVIRONMENTAL COMPLIANCE:
Not Applicable

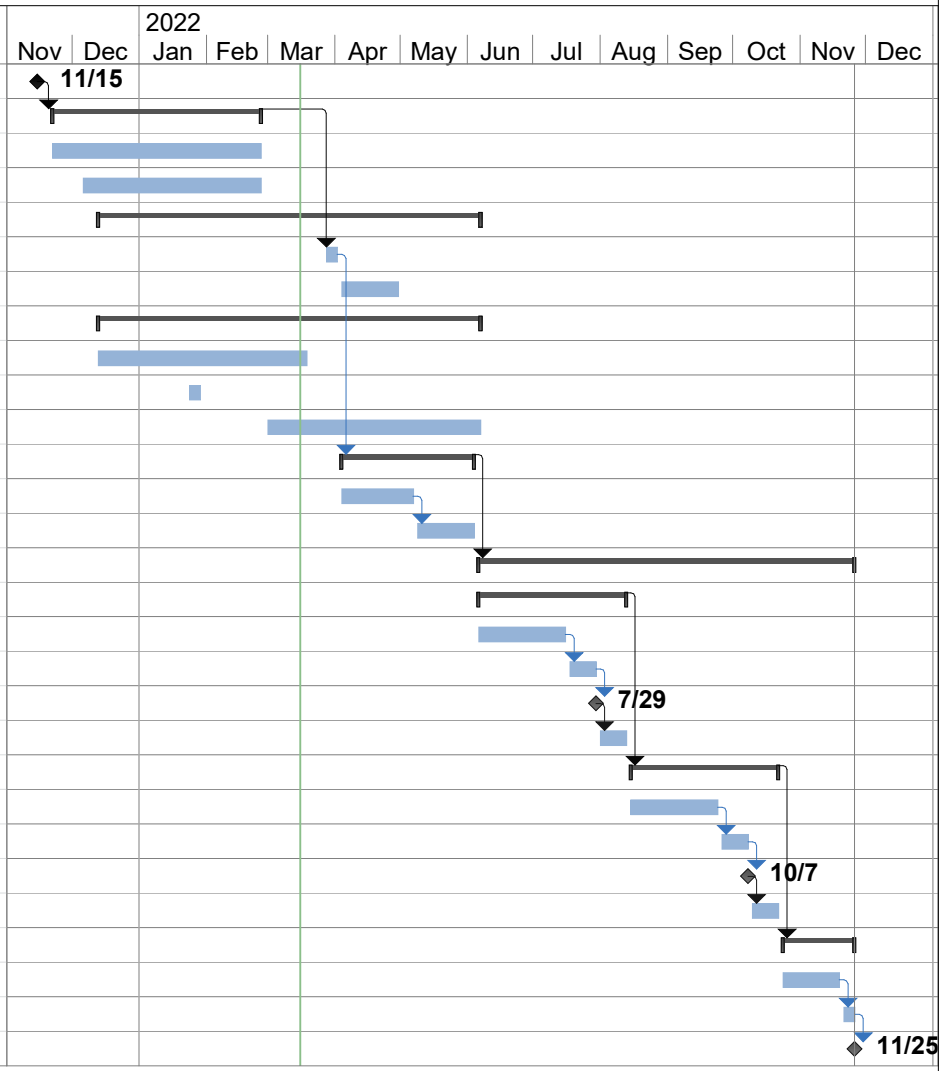
RECOMMENDED ACTION:
Committee to receive project status updates at time of the Committee Meeting.

EXHIBIT(S):
1. Project Schedule
2. Rose Canyon and Lang Wells-Preliminary Study and Cost Estimate TM

CONTACTS (staff responsible): PALUDI/LAUSTEN

Trabuco Canyon Water District
Master Plan and Condition Assessment Study
Project Schedule

ID	Task Name	Duration	Start	Finish
1	**NOTICE TO PROCEED**	**0 days**	**11/15/21**	**11/15/21**
2	**DATA COLLECTION AND REVIEW**	**14 wks**	**11/22/21**	**2/25/22**
3	Data Collection	14 wks	11/22/21	2/25/22
4	Data Review	12 wks	12/6/21	2/25/22
5	**FIELD WORK**	**25.2 wks**	**12/13/21**	**6/6/22**
6	Hydrant Tests	1 wk	3/28/22	4/1/22
7	Flow Monitoring	4 wks	4/4/22	4/29/22
8	**Condition Assessments**	**25.2 wks**	**12/13/21**	**6/6/22**
9	Asset Register Update	14 wks	12/13/21	3/18/22
10	Condition Assessments	1 wk	1/24/22	1/28/22
11	WWTP Condition Assessment	14 wks	3/1/22	6/6/22
12	**HYDRAULIC MODELS**	**9 wks**	**4/4/22**	**6/3/22**
13	Build/Update Models	5 wks	4/4/22	5/6/22
14	Model Calibration	4 wks	5/9/22	6/3/22
15	**MASTER PLAN UPDATE REPORT**	**25 wks**	**6/6/22**	**11/25/22**
16	**Draft #1 Final Report**	**10 wks**	**6/6/22**	**8/12/22**
17	Analysis/Report Preparation	6 wks	6/6/22	7/15/22
18	QC Report	2 wks	7/18/22	7/29/22
19	Deliverable to TCWD	0 days	7/29/22	7/29/22
20	TCWD Review	2 wks	8/1/22	8/12/22
21	**Draft #2 Final Report**	**10 wks**	**8/15/22**	**10/21/22**
22	Analysis/Report Preparation	6 wks	8/15/22	9/23/22
23	QC Report	2 wks	9/26/22	10/7/22
24	Deliverable to TCWD	0 days	10/7/22	10/7/22
25	TCWD Review	2 wks	10/10/22	10/21/22
26	**Final Report**	**5 wks**	**10/24/22**	**11/25/22**
27	Report Preparation	4 wks	10/24/22	11/18/22
28	QC Report	1 wk	11/21/22	11/25/22
29	Deliverable to TCWD	0 days	11/25/22	11/25/22



Hazen *Technical Memorandum*

March 18, 2022

To: Lorrie Lausten, PE, (Trabuco Canyon Water District)

From: Tori Yokoyama, PE (Hazen and Sawyer)
Steve Conner, PE (Hazen and Sawyer)
Kent O'Brien (Hazen and Sawyer)

Rose Canyon and Lang Wells

Preliminary Study and Cost Estimate Technical Memorandum

Introduction

The purpose of this study is to identify the improvements needed on the Rose Canyon and Lang Wells, with the intent of putting the wells back into service and operating the groundwater treatment facility.

Job no. 20120-002

1. Background

The Rose Canyon and Lang Wells Groundwater Treatment Facility is located at Trabuco Canyon Road and Rose Canyon Road, adjacent to Trabuco Canyon Creek. A site plan of the facilities in shown in Figure 1-1. The main process facilities include:

- Rose Canyon Well
- Lang Well
- Two-stage filtration system
- Chlorine contact tank
- Finished water pumps to the distribution system

Based on a site visit on 1/27/22 and discussions with TCWD staff, the existing submersible pumps are inadequate for several reasons. They are not set at a deep enough elevation to maximize the capture of local shallow groundwater. In addition, they have insufficient total dynamic head to pump through the existing treatment system and into the chlorine contact tank. Neither well has a pump to waste connection, which is needed for maintenance and required by California well standards.

The following additional data was reviewed in preparing this assessment and recommendation:

- Facility As-Builts (October 2009)
- Well Inspection Reports (March 2021)
- Monthly and annual production data from TCWD

The following sections describe the needed improvements at the Rose Canyon and Lang Wells and the associated costs.

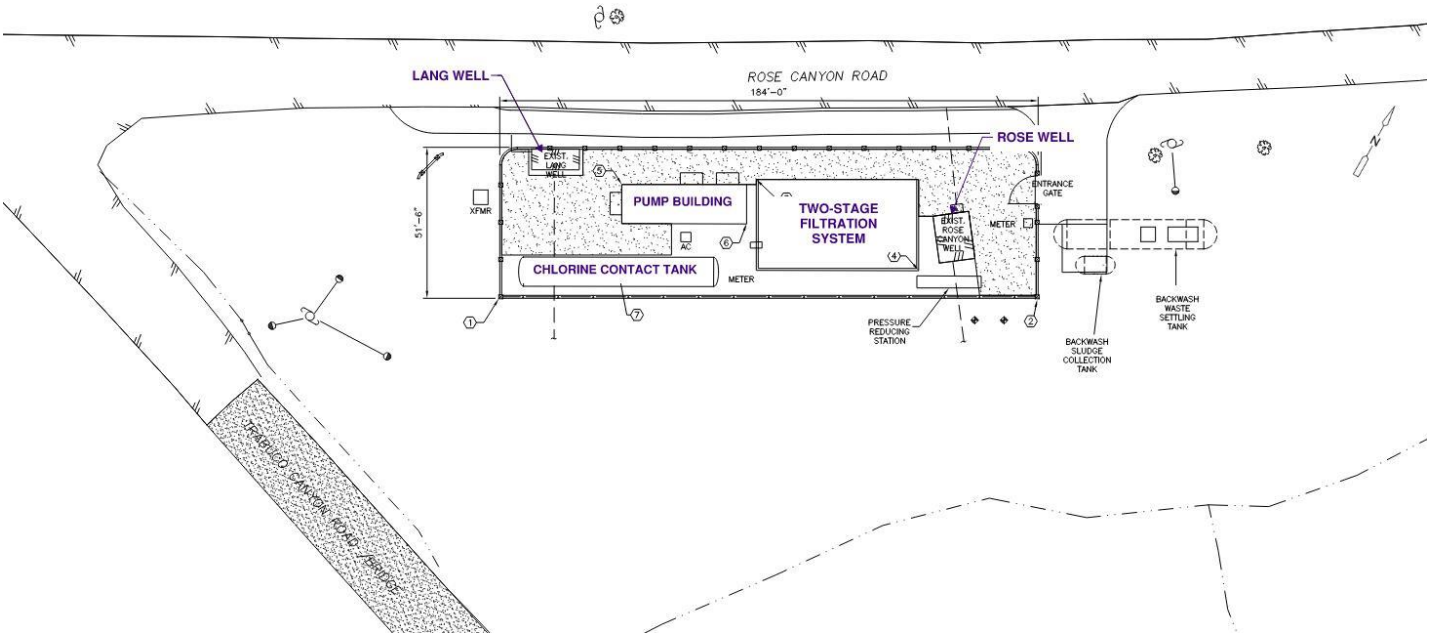


Figure 1-1: Site Plan

2. Facility Improvements

2.1 Well Rehabilitation

Well rehabilitation must be performed for each well. Well rehabilitation will include removing debris, brushing, bailing, surging, and pumping. The specifications will include requirements for monitoring removed material, sand content testing, and record keeping verifying that well production has been restored to the extent feasible. Well rehabilitation must occur when water levels are high to allow for pumping and removal of accumulated material.

As part of well rehabilitation, pumping tests must be performed. Based on our analysis of historical pumping records, the Rose Canyon Well pumped at a maximum rate of 600 gpm and the Lang Well produced a maximum rate of 300 gpm from 2011 production data. However, neither of these flow rates were sustained, and the cause of the flow reduction or lack of pump function is unknown. A pumping test at each well is required to ensure that the new pumps are appropriately sized and configured. This must be performed when water levels are high to allow for maximum pumping rates.

It is recommended to conduct both a 6-hour step-test and 24-hour pumping test at each well. During the step-test the pump is operated at three successively increasing flow rates for a total of 6 hours of pumping. The pumping characteristics of the well under the three different flow rates are used to determine the maximum pumping rate for the subsequent constant rate 24-hour pumping test. The results of the 24-hour pumping test are used to design the new production pumps and identify constraints related to water elevation in the well and sand entrainment.

2.2 Well Pump Installation

The Rose Canyon and Lang Wells must be equipped with new vertical turbine well pumps. Based on the existing wells and the hydraulic profile shown on the as-builts, the design parameters for the new pumps shall be:

- Rose Canyon Well
    - Vertical Turbine Pump
    - Max Design Flow: 500 gpm
    - Min Design Flow: 100 gpm
    - TDH: 110 ft
    - NPSHa: 20 ft
    - Well Depth: 41 ft
    - Well Casing Diameter: 24”
    - Motor: New electric motor (20 hp max), utilize existing VFD
        - Note, the existing motor VFD is 20 hp, so the new pump should be designed for 20 hp maximum.

- Lang Well
    - Vertical Turbine Pump
    - Max Design Flow: 500 gpm
    - Min Design Flow: 100 gpm
    - TDH: 110 ft
    - NPSHa: 20 ft
    - Well Depth: 39 ft
    - Well Casing Diameter: 14”
    - Motor: New electric motor, utilize existing VFD
        - Note, the existing motor VFD is 20 hp, so the new pump should be designed for 20 hp maximum.

Figure 2-1: Rose Well

Figure 2-2: Lang Well

2.3 Other Facility Improvements

Based on discussions with TCWD staff, additional improvements are needed at the facility.

The wells do not currently have a provision to "pump-to-waste" for a preset time period to flush the well before sending the water through the treatment system. Pump to waste piping should be provided that includes new pipe that would be installed from the well to an air gap location outside the block wall where it can discharge into the creek.

The 39,000 gallon chlorine contact tank also needs provisions so it can be drained. A port should be added to the tank for a temporary hose connection so it can be drained for maintenance.

Figure 2-3: Chlorine Contact Tank

2.4 Data to be Collected

The depth to water in the wells will vary considerably between the wet and dry season. As the water levels decline, the pumping rate in each well may require reduction to prevent air-entrainment and pump cavitation.

Understanding the seasonal fluctuations of the water level is important for the purpose of a pump design and for use in calculating the pumping rates from each well as water level changes. Water level data should be collected every two weeks starting in April 2022 and throughout the spring until low water levels during the mid-summer. Twice monthly water level measurements at each well should be collected again in October 2022 and continue through January 2023.

3. Schedule

The overall project schedule is estimated to be approximately 18 months:

- Design: 5 months
- Bidding/Award: 3 months
- Construction: 12 months

Note, the construction duration is not all “active construction” but also includes procurement time for long lead time items like the well pumps.

4. Cost Estimate

A cost estimate of the proposed improvements can be found in Appendix A. A basis of cost estimate memo is also included. The total cost estimated for the proposed improvements is $1.3 M.

Hazen

March 18, 2022

Appendix A: Cost Estimate

Hazen *Memorandum*

March 15, 2022

To: Hazen Design Team

From: Chris Portner, PE, CEP

Re: Trabuco Canyon Water District

Rose Canyon and Lang Wells

Preliminary Study Estimate

1. Introduction

This memorandum is a supplement to the cost estimate that corresponds to the Preliminary Study Estimate submitted to the client in March 2022. The project work is to be performed in Orange County, California. This estimate is for well rehabilitation, replacement of well pumps, modification of chlorine contact tank and modification of existing piping.

The probable construction cost for the project is $1.3M. The estimate serves for budget authorization and alternative analysis and is considered to be an AACE Class 5 level. Class 5 has a typical accuracy range of -50% on the low side and +100% on the high side. A 40% design contingency has been added to the estimate based on current status of the design documents, the nature of the project and the estimate classification.

2. Estimate Basis

Estimate costs are derived from the following:

1. Draft Preliminary Study, dated March 2022
2. Record Drawings – Groundwater Treatment Facility, dated October 2009
3. Discussions with Design Team

3. Planning Basis

Base Assumptions are the following

1. Construction NTP is assumed to be third quarter 2023
2. Construction Duration is assumed to be 12 months.
3. The project is assumed to be procured as a single prime contract through a traditional design/bid/build process.

4. Cost Basis

1. Wage rates utilized are based on prevailing wages published for Orange County current to June 30, 2022.
2. A 40-hour work week is assumed, no shift, weekend or other premium time is provided.
3. Wherever possible, equipment rates are based on current published rental rates as listed in the AED Blue Book, supplemented by RS Mean's data, the AED Green Book, and local rental suppliers.
4. Crews, equipment, and productivity used for work items are based mostly on standards specific to each trade. Some information was supplemented by RS Mean's data modified where necessary by estimator judgment.
5. The following item costs were based upon vendor quotes:

    - None

5. Itemized Estimate Notes

Estimated scope is as follows:

1. Well Rehab

    - Inspect, clean and test existing well (2)

2. Well Pump Replacement

    - Furnish/install well pump, 20 hp (2)

3. Pump to Waste

    - Furnish/install 6-inch diameter DIP, 1 per well
        - Assume 4-ft cover
        - Assume pipe discharges through abovegrade goose neck

4. Chlorine Contact Tank

    - Furnish/install flanged connection, isolation valve and quick connect fitting, 4-inch diameter
    - Allow for cutting/repair of tank

5. Electrical and Controls

    - Allow for miscellaneous conduit/wire to connect new pumps to existing power and controls

6. Below the Line Adders

The following adders were used:

Below the Line Adders	
Item	**%**
Small Tools Allowance	2
Subcontractor Overhead and Profit	25
Prime Contractor Mark-Up on Subcontractor	5
General Conditions (Div01)	15
Contractor Overhead	10
Contractor Profit	10
Annual labor escalation to mid-point of construction	3.5
Annual material escalation to mid-point of construction	5
Insurance and Bonding	3
Contingency	40
Design	20
Construction Management	15

These factors are generally in-line with recent estimated projects in this location and of this size and conform to the AACE Class of each scope.

7. Other Assumptions

Additional assumptions to the estimate include:

1. No hazardous materials are present onsite
2. High groundwater will not impact any excavations
3. Excavated material is assumed suitable for backfill
4. Chlorine contact tank is handed to contractor drained and cleaned
5. No new electrical infrastructure is required except for conduit/conductors to get from new pump to existing infrastructure

8. Exclusions

The following items are specifically excluded from the scope of this estimate:

1. Hazardous material abatement
2. Dewatering
3. Piles

9. Exceptions

None taken.

10. Risks and Opportunities

Some risk items and opportunities need to be considered in the process of reviewing estimated costs. These are the following:

1. Installing buried works carries the risk of encountering unexpected utilities, structures or artifacts which could delay the job.
2. The current pandemic has disrupted supply chains for both labor and materials. There has been a recent increase in the cost of raw materials for nearly all construction materials. The price increase has not been even across the board and varies locally. Additional schedule impacts may be felt by the project as sourcing materials has also been difficult recently. Expected bid prices have come in higher than expected as Contractor's have increased margins to deal with the uncertainty related to commodity pricing and the inability of vendors to provide price guarantees beyond 1 to 2 days in most cases.

11. Estimate Quality Assurance

Estimate review has been ongoing. No second party review has been undertaken.

12. Estimating Team

Oversight to the estimating team is provided by Tori Yokoyama, P.E. The principal or lead estimator is Chris Portner, P.E, CEP. All estimate reviews have been internally reviewed by the Design and Estimating Teams.

Hazen

Trabuco Canyon Water District
Rose Canyon and Lang Wells
Preliminary Study
Estimate Summary - Work Breakdown Structure (WBS)

Date: 3/15/2022

	Description					Total
	Well Rehab					*$ 47,290*
	Well Pump					*$ 326,526*
	Pump to Waste					*$ 25,080*
	Chlorine Contact Tank					*$ 14,428*
	Electrical and Controls					*$ 28,644*
	Subtotal:					**$ 441,969**
	Small Tools (Applied on Labor)	*2.0%*	*on*	*$*	*46,264*	*$ 925*
	Direct Costs Subtotal:					**$ 442,894**
	General Conditions	*15.0%*	*on*	*$*	*442,894*	*$ 66,434*
	Indirect Costs Subtotal:					**$ 66,434**
	Direct and Indirect Costs Total:					**$ 509,328**
	Add-On / Mark-Up					
	Labor Escalation at 3.5% annually	*5.9%*	*on*	*$*	*96,090*	*$ 5,670*
	Material/Equipment Escalation at 5% annually	*8.5%*	*on*	*$*	*413,236*	*$ 35,007*
	Subtotal:					**$ 550,005**
	Value of Subcontracted Work assumed at 10%			*$*	*55,001*	
	Subcontractor Overhead, Profit and Fee	*25.0%*	*on*	*$*	*55,001*	*$ 13,750*
	Subtotal:					**$ 563,756**
	Prime Contractor Overhead	*10.0%*	*on*	*$*	*495,005*	*$ 49,500*
	Subtotal:					**$ 613,256**
	Prime Contractor Profit	*10.0%*	*on*	*$*	*544,505*	*$ 54,451*
	Subtotal:					**$ 667,707**
	Prime Profit on Subcontracted Work	*5.0%*	*on*	*$*	*68,751*	*$ 3,438*
	Subtotal:					**$ 671,144**
	Bond and Insurance	*3.0%*				*$ 20,134*
	Subtotal:					**$ 691,278**
	Design Contingency	*40.0%*				*$ 276,511*
	Subtotal:					**$ 967,790**
	Total (rounded):					**$ 968,000**
	Design	*20.0%*				*$ 193,600*
	Construction Management	*15.0%*				*$ 145,200*
	Total (rounded):					**$ 1,307,000**

Location	CSI Div.	CSI Div. Name	Description	Quantity	Unit	Notes	Labor Unit Cost	Equipment Unit Cost	Material Unit Cost	Total Unit Cost	Total Amount
			Well Rehab				$0.00	$0.00		$ -	$ -
Well Rehab	Div 02	Existing Conditions	Rehab Rose Canyon well	1	ls	Per previous costs	$0.00	$0.00	$20,554.34	$ 20,554	$ 20,554
Well Rehab	Div 02	Existing Conditions	Rehab Lang well	1	ls	Per previous costs	$0.00	$0.00	$26,735.61	$ 26,736	$ 26,736
							$0.00	$0.00		$ -	$ -
			Well Pump Replacement				$0.00	$0.00		$ -	$ -
Well Pump	Div 43	Process Gas and Liquid H	Furnish/install well pump	2	ea	20-hp	$8,138.97	$3,025.73	$150,000.00	$ 161,165	$ 322,329
Well Pump	Div 43	Process Gas and Liquid H	Testing	4	cd		$1,049.22	$0.00		$ 1,049	$ 4,197
							$0.00	$0.00		$ -	$ -
			Pump to Waste				$0.00	$0.00		$ -	$ -
Pump to Was	Div 31	Earthwork	*First line*				$0.00	$0.00		$ -	$ -
Pump to Was	Div 31	Earthwork	Excavation	20	cy		$46.08	$22.33		$ 68	$ 1,394
Pump to Was	Div 31	Earthwork	Trench box	1	wk		$0.00	$0.00	$250.00	$ 250	$ 250
Pump to Was	Div 31	Earthwork	Gravel Bedding	4	cy		$92.16	$44.66	$35.00	$ 172	$ 636
Pump to Was	Div 31	Earthwork	Backfill (reuse)	20	cy		$46.08	$22.33		$ 68	$ 1,394
Pump to Was	Div 31	Earthwork	Disposal of soil	0	cy		$6.07	$4.92	$5.00	$ 16	$ -
							$0.00	$0.00		$ -	$ -
Pump to Was	Div 33	Utilities	6-inch diameter duct	40	lf	DIP	$10.51	$0.00	$58.38	$ 69	$ 2,756
Pump to Was	Div 33	Utilities	90-elbow	6	ea		$131.36	$0.00	$304.41	$ 436	$ 2,615
Pump to Was	Div 33	Utilities	Tee	1	ea		$197.82	$0.00	$621.33	$ 819	$ 819
							$0.00	$0.00		$ -	$ -
			Second line				$0.00	$0.00		$ -	$ -
Pump to Was	Div 31	Earthwork	Excavation	31	cy		$46.08	$22.33		$ 68	$ 2,090
Pump to Was	Div 31	Earthwork	Trench box	1	wk		$0.00	$0.00	$250.00	$ 250	$ 250
Pump to Was	Div 31	Earthwork	Gravel Bedding	6	cy		$92.16	$44.66	$35.00	$ 172	$ 955
Pump to Was	Div 31	Earthwork	Backfill (reuse)	31	cy		$46.08	$22.33		$ 68	$ 2,090
Pump to Was	Div 31	Earthwork	Disposal of soil	0	cy		$6.07	$4.92	$5.00	$ 16	$ -
							$0.00	$0.00		$ -	$ -
Pump to Was	Div 33	Utilities	6-inch diameter duct	60	lf	DIP	$10.51	$0.00	$58.38	$ 69	$ 4,133
Pump to Was	Div 33	Utilities	90-elbow	6	ea		$131.36	$0.00	$304.41	$ 436	$ 2,615
Pump to Was	Div 33	Utilities	Tee	1	ea		$197.82	$0.00	$621.33	$ 819	$ 819
							$0.00	$0.00		$ -	$ -
Pump to Was	Div 33	Utilities	Testing	2	cd		$1,132.30	$0.00		$ 1,132	$ 2,265
							$0.00	$0.00		$ -	$ -
			Chlorine Contact Tank				$0.00	$0.00		$ -	$ -
Chlorine Cont	Div 40	Process Interconnections	Furnish/install flanged connectio	1	ea	4-inch	$367.73	$0.58	$32.26	$ 401	$ 401
Chlorine Cont	Div 40	Process Interconnections	Furnish/install ball valve	1	ea	4-inch	$420.37	$0.00	$1,431.95	$ 1,852	$ 1,852
Chlorine Cont	Div 40	Process Interconnections	Furnish/install quick connect	1	ea	4-inch	$280.24	$0.00	$125.00	$ 405	$ 405
Chlorine Cont	Div 40	Process Interconnections	Cutting/repairing tank	1	ea		$5,044.39	$0.00	$5,044.39	$ 10,089	$ 10,089
							$0.00	$0.00		$ -	$ -
Chlorine Cont	Div 40	Process Interconnections	Testing	1	cd		$1,681.46	$0.00		$ 1,681	$ 1,681
							$0.00	$0.00		$ -	$ -
			Electrical and Controls				$0.00	$0.00		$ -	$ -
Electrical and	Div 26	Electrical	Miscellaneous electrical	5	cd		$1,432.20	$0.00	$4,296.61	$ 5,729	$ 28,644
							$0.00	$0.00		$ -	$ -
							$0.00	$0.00		$ -	$ -

TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | MAY 10, 2022

ENGINEERING MATTERS
ITEM 4: OTHER ENGINEERING AND OPERATIONS PROJECT UPDATES

1. Capital Improvement Plan Budget
2. SCADA Project
3. OC Rescue Mission Meter Relocation
4. AMR/AMI System Implementation
5. Other Projects

RECOMMENDED ACTION:
Committee to receive project status updates at time of the Committee Meeting.

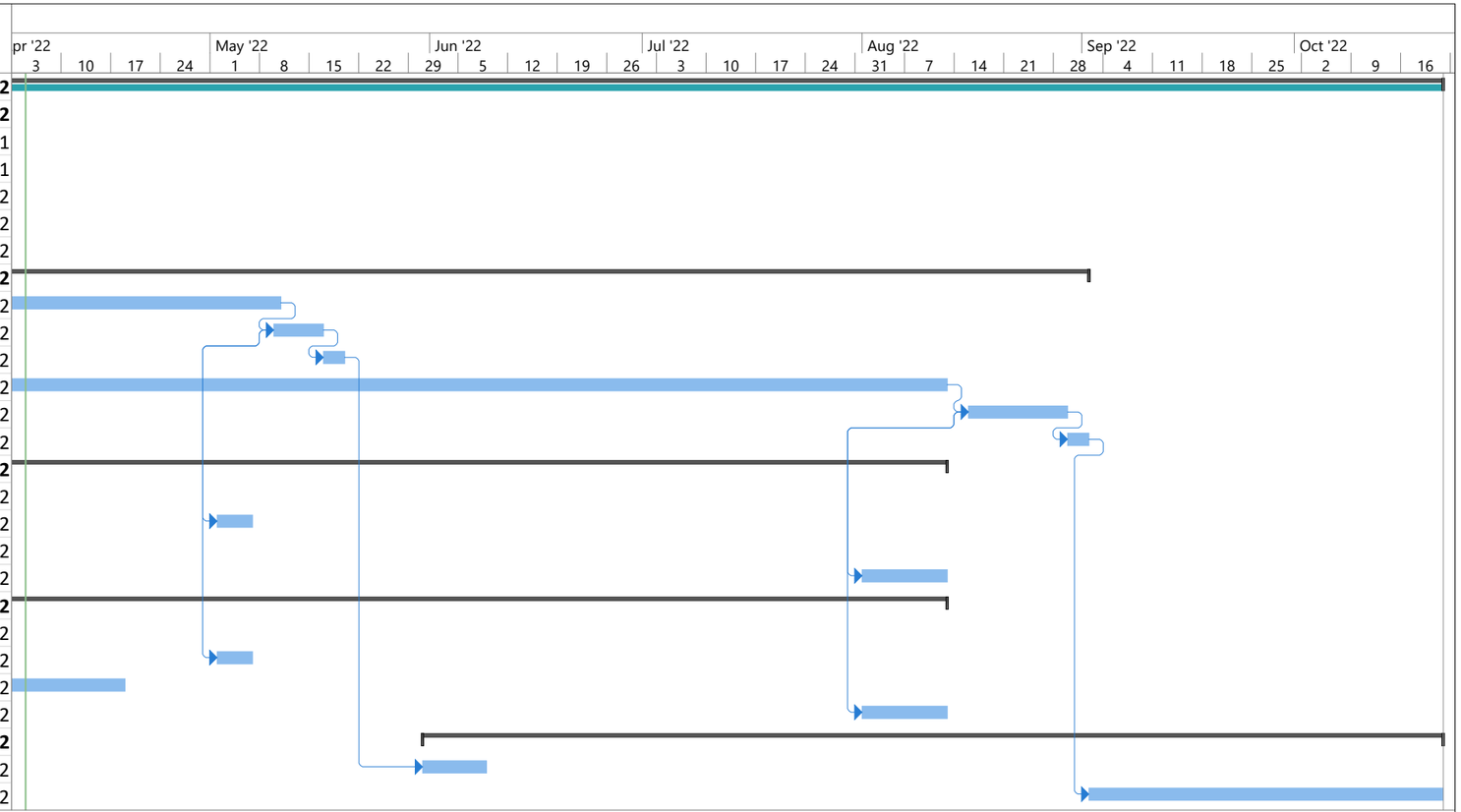
EXHIBIT(S):
1. CIP Budget
2. FY 2021/2022 SCADA Improvement Schedule

CONTACTS (staff responsible): PALUDI/PEREA/LAUSTEN

TRABUCO CANYON WATER DISTRICT
CAPITAL IMPROVEMENT PLAN BUDGET
F.Y. 2021/22 - 2023/24

ITEM	WATER	EXPENDED FY 2021/22	PROPOSED FY 2022/23	PROJECTED FY 2023/24
1	Dimension WTP Vault Improvements		$ 50,000	
2	PRV Improvements-Water	$ 3,100	$ 15,000	$ 15,000
3	Domestic Water Turbidimeter Replacement		$ 15,000	$ 15,000
4	Valve Replacement Program	$ 37,500	$ 45,000	$ 75,000
5	DWTP Office & Storage	$ 50,000	$ 300,000	
6	DWTP Filter 4 Recoating			$ 150,000
7	DWTP Backwash Recovery Tank Replacement	$ 66,000		
8	DWTP Flowmeter	$ 5,300		
9	Live Oak Transmission Main (Harris to Station 18) Scoping		$ 100,000	
10	Reservoir Rehabilitation Project			$ 75,000
11	El Toro Road Bike Trail Pipeline Improvements			$ 100,000
12	Meter Replacement Program	$ 48,200		$ 5,000
13	AMR/AMI System Implementation - Grant Funding	$ 200,000	$ 1,500,000	
14	Harris Grade Tank/Live Oak Pipeline			$ 375,000
	WATER SUBTOTAL	**$ 410,100**	**$ 2,025,000**	**$ 810,000**
	DISTRICT-WIDE	**FY 2021/22**	**FY 2022/23**	**FY 2023/24**
15	SCADA System Upgrades	$ 750,000	$ 900,000	$ 250,000
16	District Facility Security Improvements	$ 7,000		
17	Trucks	$ 44,000		$ 70,000
18	Admin Flood Damage	$ 47,000		
19	Forklift	$ 30,000		
20	Equipment Trailer		$ 39,000	
21	Pump Replacement Program	$ 250,000	$ 100,000	$ 100,000
22	CMMS Implementation	$ 35,350		
23	Master Plan and Condition Assessment	$ 350,000	$ 300,000	
	DISTRICT-WIDE SUBTOTAL	**$ 1,513,350**	**$ 1,339,000**	**$ 420,000**
	WASTEWATER / RECLAIMED / RECYCLED	**FY 2021/22**	**FY 2022/23**	**FY 2023/24**
24	Wet Well Recoating Program - Sewer			$ 20,000
25	Manhole Recoating Program - Sewer	$ 20,000	$ 20,000	$ 20,000
26	PRV Vault Improvements Program - Reclaimed		$ 45,000	$ 45,000
27	Golf Club SLS- Sewer ByPass, Bypass Valve, MCC, Valve, Force Main	$ 600,000		
28	Golf Club SLS Improvements-Wet Well, Surge Tank, Bypass, Dry Pit		$ 840,000	
29	Golf Club SLS New Pump Procurement (3)	$ 195,000		
30	Golf Club SLS Security Improvements (New Gate)			$ 60,000
31	WWTP Drying Bed/Sludge Bin Permanent Cover - Sewer			$ 100,000
32	WWTP Safety Railing Replacement - Sewer			$ 40,000
33	WWTP Brine Tank Removal - Sewer			$ 25,000
34	WWTP Blower Motors (2)		$ 200,000	
35	WWTP New Mixers		$ 200,000	
36	WWTP-Blower Room 75HP Motor	$ 8,500		
37	Chiquta CIP	$ 178,000	$ 178,000	$ 150,000
38	El Toro SLS Surge Tank Improvements	$ 30,000	$ 250,000	
39	El Toro SLS Improvements - Electrical for pumps/MCC	$ 193,000		
40	El Toro SLS Improvements - Force Main Discharge Valve Replacement		$ 35,000	
41	Dove New Lake Barge/Pump		$ 30,000	
	WASTEWATER / RECLAIMED / RECYCLED SUBTOTAL	**$ 1,224,500**	**$ 1,798,000**	**$ 460,000**
	TOTAL ANNUAL CIP	**$ 3,147,950**	**$ 5,162,000**	**$ 1,690,000**
	TOTAL 3-YEAR CIP	**$ 9,999,950**		

ID	Task Name	Duration	Start	Finish
1	**46178x7 TCWD 2021-2022 Fiscal Year**	**337 days**	**Thu 7/8/21**	**Fri 10/21/22**
2	**Engineering**	**178 days**	**Thu 7/8/21**	**Mon 3/14/22**
3	Notice to Proceed	1 day	Thu 7/8/21	Thu 7/8/21
4	Dimension WFP Engineering	80 days	Tue 8/3/21	Mon 11/22/21
5	Dimension Site Equipment release for procureme	6 wks	Wed 12/22/21	Tue 2/1/22
6	PLC Upgrade Sites Engineering	15 days	Tue 1/11/22	Mon 1/31/22
7	PLC Upgrade Sites release for procurement	6 wks	Tue 2/1/22	Mon 3/14/22
8	**Manufacturing**	**152 days**	**Wed 2/2/22**	**Thu 9/1/22**
9	Dimension WFP PLC manufacturing	14 wks	Wed 2/2/22	Tue 5/10/22
10	Dimension Panel WFAT testing	1 wk	Tue 5/10/22	Mon 5/16/22
11	Dimension Panel Shipment to site	3 days	Tue 5/17/22	Thu 5/19/22
12	PLC Upgrade Sites Manufacturing	22 wks	Mon 3/14/22	Fri 8/12/22
13	PLC Upgrade WFAT Sites Testing	2 wks	Tue 8/16/22	Mon 8/29/22
14	PLC Upgrade Sites Shipment to site	3 days	Tue 8/30/22	Thu 9/1/22
15	**PLC Programming**	**189 days**	**Tue 11/23/21**	**Fri 8/12/22**
16	Dimension PLC Program development	40 days	Tue 11/23/21	Mon 1/17/22
17	Dimension PLC Programming internal testing	1 wk	Mon 5/2/22	Fri 5/6/22
18	PLC Upgrade site PLC Programming Dev	40 days	Tue 2/1/22	Mon 3/28/22
19	PLC Upgrade site PLC Programming internal testin	2 wks	Mon 8/1/22	Fri 8/12/22
20	**SCADA Engineering**	**163 days**	**Wed 12/29/21**	**Fri 8/12/22**
21	Dimension SCADA Engineering	29 days	Wed 12/29/21	Mon 2/7/22
22	Dimension SCADA internal testing	1 wk	Mon 5/2/22	Fri 5/6/22
23	PLC Upgrade Sites SCADA Eng	36 days	Mon 2/28/22	Mon 4/18/22
24	PLC Upgrade sites SCADA internal testing	2 wks	Mon 8/1/22	Fri 8/12/22
25	**Field Service**	**104 days**	**Tue 5/31/22**	**Fri 10/21/22**
26	Dimension site startup	7 days	Tue 5/31/22	Wed 6/8/22
27	PLC Upgrade Site Startup	36 days	Fri 9/2/22	Fri 10/21/22



Project: Schedule
Date: Tue 4/5/22

Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone

TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | MAY 10, 2022

OPERATIONAL MATTERS
ITEM 5: WATER SYSTEM UPDATES

The following is a brief report of the water system for **April 2022**.

Projects and Repairs

Water Operations staff performed and/or completed the following tasks and projects:

1. Pulled new service on Snowdon in the Dove Canyon Community.
2. Replaced a struck Air Vac on Dove Canyon Dr in the Dove Canyon Community.
3. Repaired a Hydrant Bury in the Rancho Cielo Community.
4. Replaced a Curb Stop on Oak Ridge in the lower Robinson Ranch Community.
5. Replaced two fire hydrants in the Dove Canyon Community.

Dimension Water Treatment Plant

1. Worked with Ferreira Construction to repair a leak on the 16" water main.
2. Re- epoxied the floor in the Chlorine Room.
3. Repaired a leak on a 3'' domestic water supply line.
4. Replaced site tube on the Alum storage tank.

Monthly Water System Operations Summary

The Monthly Water System Operations Summary is attached for the Committee's review. Any anomalies will be presented at the time of the Engineering/Operational Committee Meeting.

RECOMMENDED ACTION:

Committee to receive system status updates. No action required.

EXHIBITS

1. Monthly Water System Operations Summary

CONTACTS (staff responsible): PALUDI/KESSLER

TRABUCO CANYON WATER DISTRICT
MONTHLY WATER SYSTEM OPERATIONS SUMMARY

2022													
DIMENSION WTP													
	JAN	**FEB**	**MARCH**	**APRIL**	**MAY**	**JUNE**	**JULY**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	***TOTAL***
SAC METER AC/FT	138	151	51	0									340
BACKWASH AC/FT	4	4	1	0									9
FLUSHWATER AC/FT	6	7	2	0									15
WTP EFFLUENT AC/FT	141	151	47	0									339
WELLS													
TRABUCO CREEK GWTF	0	0	0	0									0
US WELL AC/FT	0	0	0	0									0
AMP WATER													
SMWD AC/FT	0	0	27	57									84
IRWD AC/FT	3	0	80	117									200
TOTAL SUPPLY													
AC/FT	144	151	154	174									623
CFS DAILY AVERAGE	2.3	2.7	2.6	2.9									2.6
AC/FT PER DAY	4.6	5.4	5.0	5.8									5.2
OPERATIONS in GAL.													
WTP DOMESTIC	38,672	31,715	11,070	374									81,831
WWTP DOM	710	750	1,181	1,655									4,296
OPERATIONS (AF)													
SUPPLEMENT TO RW	0	0	0	0									0
LOSSES in GAL.													
FLUSHING (gal.)	0	0	170,000	0									170,000
SEWER CLEANING (gal.)	5,000	5,000	5,000	5,000									20,000
LINE BREAKS (gal.)	100,000	50,000	0	300,000									450,000
SYSTEM DEMAND **													
CFS DAILY AVERAGE	2.3	2.6	2.6	2.9									2.6
AC/FT PER DAY	4.6	5.4	5.0	5.8									5.2
RESERVOIR STORAGE													
MONTHLY AVG (MG)	8.8	9.0	8.9	8.8									9
DAYS OF STORAGE	3	4	4	3									4
ZONES (AF)													
RIDGELINE PS	130	140	43	0									313
EL TORO P.S.	3	0	80	117									200
TOPANGA	2	2	2	2									8
FALCON	0.4	0.5	0.6	0.7									2
ROSE PRV/ OAKS	3	2	4	3									12
CANYON CREEK	0.2	0.5	0.3	0.3									1
ROSE P.S.	0.4	0.2	0.2	0.1									1
ROBINSON RANCH	32	39	42	43									156
DOVE CANYON	59	62	70	70									261
PORTOLA HILLS	10	10	10	11									41
* Usage estimated new meter installed					** Excludes Operational use, losses, and supplement to Recycled Water Reservoir (RW)								

TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | MAY 10, 2022

OPERATIONAL MATTERS
ITEM 6: WASTEWATER SYSTEM UPDATES

The following is a brief report of the wastewater system for **April 2022.**

Projects and Repairs

Wastewater Operations staff performed and/or completed the following tasks and projects:

1. Cleaned trouble spots in the collections system throughout the District.
2. Cleaned O'Neil Park collections system.
3. Conducted the Golf Club Sewer Lift Station Startup with Tesco Controls and installed the submersible pump.
4. Assisted Hazen and Sawyer with the installation and removal of flow meters for the sewer collection system.
5. Assisted Hazen and Sawyer at the Wastewater Treatment Plant with the field condition assessment.

Sewer System Management Plan (SSMP) Report

The purpose of the program is to communicate on a regular basis with the public on the development, implementation, and performance of TCWD's SSMP. Status updates on the work and type of work performed on the sewer system will be provided, including sewer line and manhole cleaning, system repairs, lift station cleaning, and updates from satellite facilities:

Sewer System Management Plan (SSMP) Monthly Update	
Total Sewer Line, Feet*	210,495
Total Sewer Line Cleaned (Ft) – Month	**8,300**
Total Sewer Line Cleaned (Ft) – Cleaning Cycle	119,995
Cleaning Cycle Period (Mos.) [Start date: 8/9/21]	8
Total Sewer Line Cleaned, %	**57%**
The Oaks at Trabuco – Pumping Frequency for the Month	13
O'Neill Park Sewer System Status	Ok
O'Neill Park Sewer System Repairs	None
SSMP Quarterly Report – *Next Quarterly Report*	1Q 2022
SSMP Program Audit – *Next Audit Report***	April 2022

**This amount includes the OC Parks-owned O'Neill Park sewer system the District is contracted to clean.*
***Periodic internal audits shall be conducted, at a minimum every two years, with reports kept on file. The audit shall focus on evaluating the effectiveness of the SSMP and TCWD's compliance with the mandatory elements of TCWD's SSMP:*

Monthly Recycled Water System Operations Summary

The Monthly Recycled Water System Operations Summary is attached for the Committee's review. Any anomalies will be presented at the time of the Engineering/Operational Committee Meeting.

RECOMMENDED ACTION:

Committee to receive system status updates. No action required.

EXHIBITS

1. Monthly Recycled Water System Operations Summary
2. Sewer System Management Plan Quarterly Report – 1Q 2022
3. Sewer System Management Plan Program Audit

CONTACTS (staff responsible): PALUDI/PEREA/ULLOA

TRABUCO CANYON WATER DISTRICT | NON-DOMESTIC WATER SYSTEM SUMMARY - 2022

RECYCLED WATER SUPPLY	MAX	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	TOTAL	FIVE YEAR AVG
WWTP Reclaimed Water Production, AF	78.3	49.9	42.6	44.6	44.6									181.7	534.4
Reclaimed Reservoir Level, FT	1274.5	1,273.8	1,274.2	1,270.5	1,268.0									-	-
Reclaimed Reservoir Free Board, FT	25.5	0.7	0.3	4.0	6.5									-	-
Reclaimed Reservoir Storage, AF	145.5	138.6	140.5	122.8	108.9									-	-
Supplemental Domestic Water Added, AF	N/A	0.0	0.0	0.0	0.0									0.0	44.5

RECYCLED WATER SYSTEM DEMAND NON DOMESTIC WATER USER	ALLOC. AF	8% JAN	17% FEB	25% MAR	33% APR	42% MAY	50% JUN	58% JUL	67% AUG	75% SEP	83% OCT	92% NOV	100% DEC	TOTAL	ALLOC. %
Dahlia Court	8.2	0.2	0.2	0.2	0.2									0.7	8.3%
Dove Canyon Golf Course	106.7	5.8	13.3	21.1	26.3									66.5	62.4%
Dove Canyon Master Association	279.3	13.0	5.0	14.0	21.7									53.7	19.2%
Robinson Ranch	80.2	0.8	1.0	1.2	1.7									4.6	5.7%
Trabuco Highlands	159.7	1.2	2.3	5.0	6.9									15.5	9.7%
City of RSM	0.1	0.01	0.0	0.00	0.00									0.01	6.9%
Construction Water	N/A	0.0	0.0	0.0	0.0									0.0	N/A
Sakaida Nursery	1.1	0.0	0.0	0.0	0.0									0.0	0.0%
SMWD	N/A	0.0	0.0	0.0	0.0									0.0	N/A
TY Nursery	17.9	0.0	0.0	20.8	0.1									20.9	116.7%
TOTAL, AF	**653.2**	**21.1**	**21.7**	**62.2**	**56.8**									**161.8**	**24.8%**
PERCENTAGE OF NDW ALLOCATION/YEAR		**3.2%**	**6.6%**	**16.1%**	**24.8%**										
TOTAL ANNUAL AVG. NDW AVAILABLE**	**774.36**														

URBAN RUNOFF CAPTURE AND REUSE DISTRICT FACILITY		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	FIVE YEAR AVG
Shadow Rock Detention Basin Production		0.01	0.01	0.03	0.01									0.06	14.2
Dove | Tick Creek Production*	*Dry Season*	7.4	7.1	1.1	4.6									20.2	58.8
	TCWD Portion	7.4	7.1	1.1	2.3									17.9	-
	SMWD Portion	0.0	0.0	0.0	2.3									2.3	-
Dove Lake Water Pumped		0.0	0.0	0.0	0.0									0.0	185.8
Dove Lake Free Board, Ft		3.9	3.1	1.2	0.8									-	-
Dove Lake Storage, AF		161.0	165.0	176.3	177.3									-	-
Total Rainfall, In.		0.0	0.5	1.5	0.01									2.0	14.7

**** SMWD share of Dove/Tick Pump Station Dry Season Water is 50% of production.***

***** Based on 5-Year Average Reclaimed Water Reservoir Base Supply & Recycled Water Production***

TRABUCO CANYON WATER DISTRICT

Sewer System Management Plan (SSMP) Quarterly Report

Report Date: May 2, 2022
Report Period: First Quarter 2022 - January to March 2022
Prepared By: Oscar Ulloa, Wastewater Operations Superintendent

District Sub-Section	Santiago/Portola Hills			Dove Canyon			Rancho Cielo/Walden			Robinson Ranch/Trabuco Highlands		
	Total Amount	Amount Completed	% Completed	Total Amount	Amount Completed	% Completed	Total Amount	Amount Completed	% Completed	Total Amount	Amount Completed	% Completed
Sewer Line Cleaned, Feet	44,625	44,625	100%	64,135	64,135	100%	29,865	0	0%	59,170	0	0%
Manholes, Inspected/Cleaned	205	205	100%	212	212	100%	124	0	0%	236	0	0%
Manholes Needing Repair	0	0	0%	0	0	0%	0	0	0%	0	0	0%
Wet Wells, Inspected/Cleaned	2	2	100%	3	3	100%	1	1	100%	2	2	100%
Lift Stations, Inspected/Maintained	2	2	100%	3	3	100%	1	1	100%	2	2	100%
Grease Interceptors Inspected	2	2	100%	2	2	100%	10	10	100%	n/a	n/a	n/a

Note: All Sewage Lift stations are inspected 3-4 times a week

Contract Services	O'Neill Park/OCFA		
	Total Amount	Amount Completed	% Completed
Sewer Line Cleaned, Feet	12,700	12,700	100%
Manholes, Inspected/Cleaned	95	95	100%
Manholes Needing Repair	0	0	0%
Wet Wells, Inspected/Cleaned	1	1	100%
Lift Stations, Inspected/Maintained	1	1	100%
Grease Interceptors Inspected	0	0	0%

TRABUCO CANYON WATER DISTRICT
Sewer System Management Plan Annual Audit Report

Date of Audit: 5/2/2022

Name(s) of Auditor(s):
Michael Perea, Assistant General Manager
Oscar Ulloa, Wastewater Chief Plant Operator

SYSTEM OVERVIEW	
Miles of gravity sewer mains:	36.8
Miles of force main:	9
Total miles of all sewer lines:	45.8
Number of pump stations:	8
Population served:	12,921 (*2020 Urban Water Management Plan*)

Report Organization

The following sections are organized as the SSMP elements appear in Statewide Order 2006-003-DWQ, in this SSMP, and in the SSMP Comprehensive Audit Form. The responses provided on the Comprehensive Audit Form will help to complete this audit report. Reference materials are also listed with each element.

Element 1: Goal

1. Are the goals stated in the SSMP still appropriate and accurate? (circle one) (Y) N

2. If the answer to Question 1 is NO, please identify which goals require revision or replacement, the reason for such action, the content of the revised or new goal, and the schedule for implementation or updates. Comments for a YES response may also be provided here.

Element 2: Organization

Reference Material

- Trabuco Canyon Water District Organization Chart
- Telephone/E-mail Contact List

1. Is the SSMP current with agency organization and staffing contact information? (circle one) Y (N)

2. If the answer to Question 1 is NO, please identify what information requires revision or replacement, the reason for such action, the content of the revised or new information, and the schedule for implementation or updates. Comments for a YES response may also be provided here.

Section 3.2.3.1 Contact Information -
Wastewater Operations Superintendent - Oscar Ulloa
Wastewater Operations Chief Plant Operator - Oscar Ulloa

Element 3: Legal Authority

Reference Material

- TCWD Rules and Regulations
- State of California Water Codes

1. Does the SSMP contain current information about the District's legal authority? (circle one) Y N
2. Does the District have sufficient legal authority to control sewer use and maintenance? (circle one) Y N
3. If the answer to Questions 1, 2, is NO, please describe the content and schedule for necessary changes. Comments for a YES response may also be provided here.

Element 4: Operation and Maintenance

4.a. Collection System Maps

Reference Material

Summary of information included in the Districts mapping and GIS systems for the collection system.

1. Does the SSMP contain current information about the District's sanitary sewer maps? (circle one) Y N
2. Are the District's sewer collection system maps complete, current, and sufficiently detailed? (circle one) Y N
3. If the answer to Questions 1 and/or 2 is NO, please identify what information or maps require revision or replacement, the reason for such action, the content of the revised or new information and/or maps, and the schedule for implementation or updates. Comments for a YES response may also be provided here.

Collection System maps are always being updated with system redlines completed in the field. The District is currently upgrading its Computerized Maintenance Management System (CMMS) software solution and will complete the project in CY 2022.

Element 4: Operation and Maintenance

4.b. Resources and Budget

Reference Material

- Current Capital Improvement Plan (CIP)
- Current TCWD Operating Budget

1. Does the SSMP contain current information about the District's resources and budget? (circle one) Y N
2. Are the District's resources and budget sufficient to support effective sewer system management? (circle one) Y N
3. Does the District's planning efforts support long-term goals? (circle one) Y N

4. If the answer to Questions 1 and/or 2 is NO, please identify what information requires revision or replacement, the reason for such action, the content of the revised or new information, and the schedule for implementation or updates. Comments for a YES response may also be provided here.

Element 4: Operation and Maintenance
4.c. Prioritized Preventative Maintenance

Reference Material

- Cleaning Schedules
- List or Map of Hotspots
- Work Orders
- Service Call Data
- Customer Feedback

1. Does the SSMP contain current information about the preventative maintenance activities for the District collection system? (circle one) (Y) N
2. Considering the information in Tables 1, are the Districts preventative maintenance activities sufficient and effective in reducing and preventing SSOs and blockages? (circle one) (Y) N
3. If the answer to Questions 1 and/or 2 is NO, please identify what information requires revision or replacement, the reason for such action, the content of the revised or new information, and the schedule for implementation or updates. Comments for a YES response may also be provided here.

Known problem/trouble areas are cleaned on a quarterly basis to prevent SSO's.

Element 4: Operation and Maintenance
4.d. Scheduled Inspections and Condition Assessment

Reference Material

- Inspection Reports
- Pipe and Manhole Condition Data

1. Does the SSMP contain current information about the inspections and condition assessment for District systems? (circle one) (Y) N
2. Are the District's scheduled inspections and condition assessment system effective in locating, identifying, and addressing deficiencies? (circle one) (Y) N
3. If the answer to Questions 1 and/or 2 is NO, please identify what information requires revision or replacement, the reason for such action, the content of the revised or new information, and the schedule for implementation or updates. Comments for a YES response may also be provided here.

All pipeline and manhole inspections are completed during sewer line cleaning. Damaged pipes and manholes are promptly repaired. Video inspections performed as needed.

Element 4: Operation and Maintenance
4.e. Contingency Equipment and Replacement Inventories

Reference Material

- Funds Spent on Equipment and Materials
- Equipment and Parts Inventory

1. Does the SSMP contain current information about the District's equipment and replacement inventories? (circle one) (Y) N
2. Are contingency equipment and replacement parts sufficient to respond to emergencies and properly conduct regular maintenance? (circle one) (Y) N
3. If the answer to Questions 1 and/or 2 is NO, please identify what information requires revision or replacement, what equipment or parts need to be obtained, the reason for such action, the content of the revised or new information, and the schedule for implementation or updates. Comments for a YES response may also be provided here.

District Maintenance Superintendent and/or designee maintains and updates equipment/asset inventory and parts for the District's Sanitary Sewer System.
Basic Inspection of Terminals (BIT) are performed quarterly on commercial/ heavy equipment vehicles. Critical parts with long lead times are on shelf for repairs.

Element 4: Operation and Maintenance
4.f. Training

Reference Material

- Employee Training Records

1. Does the SSMP contain current information about the training expectations and programs for the staff that operates the District systems? (circle one) (Y) N
2. Do supervisors believe that their staff is sufficiently trained? (circle one) (Y) N
3. Are staff satisfied with the training opportunities and support offered to them? (circle one) (Y) N
4. If the answer to Questions 1, 2, and/or 3 is NO, please identify what information requires revision or replacement, the reason for such action, the content of the revised or new information, and the schedule for implementation or updates. Comments for a YES response may also be provided here.

Safety Training is completed on a weekly basis (tailgate meetings) and training records are kept by respective department Superintendent or designee.
Educational Training is provided through Seminars, Conferences, and other approved online training sources throughout the year.

Element 5: Design and Performance Provisions

Reference Material

- Design and Construction Standards
- Ordinances

1. Does the SSMP contain up-to-date information about the District's design and construction standards? (circle one) (Y) N
2. Are the design and construction standards, as well as inspection and testing standards for new and rehabilitated facilities, sufficiently comprehensive and up-to-date? (circle one) (Y) N
3. If the answer to Questions 1 and/or 2 is NO, please identify what information requires revision or replacement, the reason for such action, the content of the revised or new information, and the schedule for implementation or updates. Comments for a YES response may also be provided here.

SSMP references all design criteria and Standard Drawings as well as inspection and testing criteria documents which are on file with the District and maintained by the District Engineer.

Element 6: Overflow Emergency Response Plan

Reference Material

- Data Submitted to CIWQS – *See Table 1 – Annual SSO Statistics*
- Customer Service Call Data

1. Does the SSMP contain up-to-date information about the overflow emergency response plan used for the District systems? (circle one) (Y) N
2. Considering the information in Table 1, is the overflow emergency response plan (OERP) effective in handling SSOs? (circle one) (Y) N
3. If the answer to Questions 1 and/or 2 is NO, please identify what information requires revision or replacement, the reason for such action, the content of the revised or new information, and the schedule for implementation or updates. Comments for a YES response may also be provided here.

SSMP references the SSOP document which contains TCWD Emergency Response Plan.

Element 7: Fats, Oils, and Grease (FOG) Control Plan

Reference Material

- Cleaning Schedules
- Food Service Establishment Inspection Reports or Summaries
- Data Submitted to CIWQS *See Table 2 – FOG Control Statistics*
- Service Call Data

1. Does the SSMP contain current information about the FOG plan? (circle one) (Y) N
2. Considering the information in Table 2, is the current FOG program effective in documenting and controlling FOG sources? (circle one) (Y) N

3. If the answer to Questions 1 and/or 2 is NO, please identify what information requires revision or replacement, the reason for such action, the content of the revised or new information, and the schedule for implementation or updates.

Comments for a YES response may also be provided here.

TCWD monitors and inspects sixteen (16) businesses in its service area. These inspections are completed quarterly, and customers are notified of inspections or any potential violations.

Element 8: System Evaluation and Capacity Assurance Plan (SECAP)

Reference Material

- TCWD Master Plan
- Sub-Area Master Plans
- SSO Data – *See Table 3 – SSOs Caused by Hydraulic Limitations*

1. Does the SSMP contain current information about the capacity assessment for the District systems? (circle one) (Y) N
2. Has a capacity assessment identifying and addressing any hydraulic deficiencies been completed for the District systems? (circle one) (Y) N
3. If the answer to Questions 1 and/or 2 is NO, please identify what information requires revision or replacement, the reason for such action, the content of the revised or new information, and the schedule for implementation or updates.

Comments for a YES response may also be provided here.

The District is currently updating its Master Plan and performing a condition assessment of its facilities with the assistance of an independent third-party consultant which will be completed by the end of CY 2022.

Element 9: Monitoring, Measurement, and Program Modifications

1. Does the SSMP contain up-to-date information about the District's data collection and organization procedures? (circle one) (Y) N
2. Are the data collection and organization procedures sufficient to evaluate the effectiveness of its SSMP for the District's systems? (circle one) (Y) N
3. If the answer to Questions 1and/or 2 is NO, please identify what information requires revision or replacement, the reason for such action, the content of the revised or new information, and the schedule for implementation or updates.

Comments for a YES response may also be provided here.

District staff maintains sewer cleaning records through a GIS-based software program. The goal is to clean the entire sanitary sewer system on an annual basis.

Element 10: SSMP Program Audits

1. Has this SSMP Audit been completed and kept on file for the San Diego Regional Water Quality Control Board to review if needed? (circle one) (Y) N

SSMP Audit will be kept on file at the Administration office and the Robinson Ranch Wastewater Treatment Plant (WWTP).
SSMP is scheduled to be updated and re-certified by the Board of Directors every five years. The most recent update and re-certification was completed in 2019. The next update and re-certification will be completed in CY 2024.

Element 11: Communication Program

Reference Material

- Project Specific Mailings
- Website
- Meeting with Neighboring Agencies
- Monthly Operational and Engineering Committee meetings

1. Does the SSMP contain up-to-date information about the District's public outreach activities? (circle one) (Y) N
2. Has the District's effectively communicated with the public, other agencies, about the SSMP and addressed any feedback? (circle one) (Y) N
3. If the answer to Questions 1 and/or 2 is NO, please identify what information requires revision or replacement, the reason for such action, the content of the revised or new information, and the schedule for implementation or updates.
Comments for a YES response may also be provided here.

District staff (Engineering, Operations, & Maintenance) meet bi-monthly to review ongoing District projects and improvements.
Operational/Engineering Committee Meetings are held once a month with Board Members, at this time the SSMP is discussed and put on record for public participation and information purposes.

TABLE 1 – ANNUAL SSO STATISTICS

INDICATOR	2018	2019	2020	2021
Number of SSOs (total)	**0**	**2**	**0**	**2**
• Wet season SSOs (1)	0	0	0	0
• Dry season SSOs	0	2	0	2
Number of SSOs (by volume range)				
• < 10 gallons	0	0	0	
• 10 – 99 gallons	0	1	0	1
• 100 – 999 gallons	0	1	0	1
• 1,000 – 9,999 gallons	0	0	0	0
• H 10,000 gallons	0	0	0	0
Total SSO Volume (Gallons)	**0**	**300**	**0**	**400**
• Volume reaching waters of the State	0	0	0	0
• Volume not contained, but also not reaching the waters of the state	0	300	0	400
o Volume recovered	0	100	0	150
o Net volume (total minus recovered)	0	200	0	250
• Number of SSOs per 10 miles of sewer per year	0	0	0	0
• Volume of SSOs per 10 miles of sewer per year	0	0	0	0
• Total volume conveyed to the WWTP (million gallons)	169	148	186	185
• Total Volume SSO/Total Volume conveyed, gallons	0	0	0	0
• Number of SSOs (by cause)				
o Blockages	0	2	0	2
o Roots	0	0	0	0
o Grease	0	0	0	0
o Debris	0	0	0	0
o Debris from Laterals	0	0	0	0
o Animal Carcass	0	0	0	0
o Construction Debris	0	0	0	0
o Multiple Causes	0	0	0	0
• Infrastructure Failure	0	0	0	0
• Inflow & Infiltration (I&I)	0	0	0	0
• Power Failure	0	0	0	0
• Flow Capacity Deficiency	0	0	0	0
• Natural Disaster	0	0	0	0
• Bypass	0	0	0	0
• Cause Unknown	0	0	0	0
• Average Emergency Response Time (minutes)	15	15-30	15-30	15-30
o Business Hours	15	15	15	15
o Non-business Hours	30	30	30	30
• Number of locations with multiple SSOs	0	1	0	0

(1) Wet season is defined as November through April, with the dry season being May through October. This seasonal categorization does not reflect actual conditions at the time of an SSO even

TABLE 2 - FOG CONTROL STATISTICS

	2018	2019	2020	2021
Number of SSOs caused by FOG	0	0	0	0
Planned cleaning (linear foot)	194,369	194,369	194,369	194,369
Unplanned cleaning (linear foot)	0	0	0	0
Number of FOG inspections completed	39	64	64	64

TABLE 3 - SSOS CAUSED BY HYDRAULIC LIMITATIONS

	2018	2019	2020	2021
Number of SSOs caused by capacity limitations	0	0	0	0

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OPERATIONAL MATTERS
ITEM 7: MAINTENANCE DEPARTMENT UPDATES

The following is a brief report of the wastewater system for **April 2022.**

Projects and Repairs
Maintenance staff performed and/or completed the following tasks and projects:

RECOMMENDED ACTION:
Committee to receive system status updates. No action required.

EXHIBITS
None

CONTACTS (staff responsible): PALUDI/STROUD

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REGULATORY AND OTHER MATTERS
ITEM 8: OTHER MATTERS/REPORTS

Other Matters/Reports from the General Manager and/or District staff may be provided at the time of the Engineering/Operational Committee Meeting.

RECOMMENDED ACTION:
Hear Other Matters/Reports that may have arisen after the posting of the agenda.

EXHIBITS
None

CONTACTS (staff responsible): PALUDI