Docket		A.23-08-010
Exhibit Number	:	Cal Adv - #
Commissioner	:	Genevieve Shiroma
Administrative Law Judge	:	Amin Nojan
Public Advocates Office	:	Susana Nasserie
Witness(es)		

PUBLIC ADVOCATES OFFICE
CALIFORNIA PUBLIC UTILITIES COMMISSION

REPORT AND RECOMMENDATIONS ON REGION I - CAPITAL PROJECT FORECAST: (ARDEN CORDOVA, BAY POINT, CLEARLAKE, LOS OSOS, SANTA MARIA & SIMI VALLEY)

Los Angeles, California
February 27, 2024

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MEMORANDUM

The Public Advocates Office at the California Public Utilities Commission (Cal Advocates) examined requests and data presented by Golden State Water Company (GSWC) in Application (A.) 23-08-010 (Application) to provide the California Public Utilities Commission (Commission) with recommendations that represent the interests of ratepayers for safe and reliable service at the lowest cost. This Report is prepared by Susana Nasserie. Mehboob Aslam is Cal Advocates' project lead for this proceeding. Victor Chan is the oversight supervisor and Crystal Yu and Brett Palmer are legal counsels.

Although every effort was made to comprehensively review, analyze, and provide the Commission with recommendations on each ratemaking and policy aspect of the requests presented in the Application, the absence from Cal Advocates' testimony of any particular issue does not constitute its endorsement or acceptance of the underlying request, or of the methodology or policy position supporting the request.

CHAPTER 1 : PLANT – ARDEN CORDOVA

I. INTRODUCTION

This chapter presents Cal Advocates' recommended adjustments to GSWC's capital budget requests for the Arden Cordova Customer Service Area (CSA), which consists of the Arden, the Cordova, and the Robbins water systems.

II. SUMMARY OF RECOMMENDATIONS

The Commission should make the following adjustments to the Arden Cordova CSA budgets:

1. Reject GSWC's request of $3,761,600 in 2025 and 2026 to recoat the interior and exterior of the Coloma Water Treatment Plant (WTP) Reservoir 4 because GSWC has failed to properly maintain the reservoir and has not performed the necessary evaluations prior to recoating the reservoir.
2. Reject GSWC's request of $1,018,900 in 2025 and 2026 to install a backup generator in Folsom South Canal because the request is not justified and is unnecessary.
3. Reject GSWC's request of $809,900 in 2025 and 2026 to install a backup generator in Pyrites WTP because the request is not justified and is unnecessary.
4. Reject GSWC's request for various cost adders in 2024, 2025, and 2026 as discussed by witnesses in separate reports.[1]

Table 1-1 below presents a comparison of GSWC's total request and Cal Advocates' total recommended plant additions for specific projects in 2024, 2025, and 2026. Cal Advocates opposes several specific projects in 2025 and 2026 (see section III.

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[1] *See* Sari Ibrahim's testimony " Report On Capital Project Cost Estimates and Cost Adders and Region III Capital Projects Forecast Early Retirements and Rate base, and RO Model. *See also* Justin Menda's testimony "Report on the General Office Plant and Cost Adders."

DISCUSSION), but not in 2024. The difference in 2024 is due to the removal of various cost adders. For more details, see Cal Advocates witnesses, Sari Ibrahim and Justin Menda, per footnote 1.

Table 1-1: Proposed Capital Budget – Arden Cordova CSA

Arden Cordova ($000)	2024	2025	2026	Total
Cal Advocates	119.0	195.3	227.3	541.6
GSWC	197.5	874.9	5,375.0	6,447.4
GSWC > Cal Advocates	78.5	679.6	5,147.7	5,905.8
Cal Advocates as % of GSWC	60%	22%	4%	8%

Table 1-2 presents GSWC's request of plant addition (capital) budget for specific projects in 2024, 2025, and 2026. Table 1-3 presents Cal Advocates' recommended plant addition (capital) budget for specific projects in 2024, 2025, and 2026.

Table 1-2: GSWC Capital Budget – Arden Cordova CSA[2]

Budget Group	Description			2024 Proposed Budget	2025 Proposed Budget	2026 Proposed Budget
	Cordova					
51		Folsom South Canal, Install Back-up Generator		-	107,800	911,100
51		Coloma WTP (Pyrites), Recoat Reservoir No. 4		-	397,900	3,363,700
			Total Water Supply	**-**	**505,700**	**4,274,800**
	Cordova					
54		Coloma WTP, Replace Filter Media (N1, S1)		197,500	-	-
54		Coloma WTP, Replace Filter Media (S3, S4)		-	203,500	-
			Total Water Quality	**197,500**	**203,500**	**-**
	Cordova					
51		Pyrites WTP, Install Back-up Generator		-	85,700	724,200
			Total Water Supply	**-**	**85,700**	**724,200**
	Cordova					
54		Pyrites WTP, Replace Filter Media (Filters 1 & 2)		-	-	209,900
			Total Water Quality	**-**	**-**	**209,900**
	Cordova					
55		Cordova System, 2025 Urban Water Management Plan		-	80,000	-
			Total Miscellaneous	**-**	**80,000**	**-**
	Robbins					
51		Sac Valley Blvd Plant, Site Improvements		-	-	166,100
			Total Water Supply	**-**	**-**	**166,100**
			Grand Total	**197,500**	**874,900**	**5,375,000**

[2] GSWC Capital Projects Lists Workpapers, (RO Model)

Table 1-3: Cal Advocates Capital Budget – Arden Cordova CSA

Budget Group	Description			2024 Proposed Budget	2025 Proposed Budget	2026 Proposed Budget
	Cordova					
51		Folsom South Canal, Install Back-up Generator		-	-	-
51		Coloma WTP (Pyrites), Recoat Reservoir No. 4		-	-	-
			Total Water Supply	**-**	**-**	**-**
	Cordova					
54		Coloma WTP, Replace Filter Media (N1, S1)		119,000	-	-
54		Coloma WTP, Replace Filter Media (S3, S4)		-	122,600	-
			Total Water Quality	**119,000**	**122,600**	**-**
	Cordova					
51		Pyrites WTP, Install Back-up Generator		-	-	-
			Total Water Supply	**-**	**-**	**-**
	Cordova					
54		Pyrites WTP, Replace Filter Media (Filters 1 & 2)		-	-	126,300
			Total Water Quality	**-**	**-**	**126,300**
	Cordova					
55		Cordova System, 2025 Urban Water Management Plan		-	72,700	-
			Total Miscellaneous	**-**	**72,700**	**-**
	Robbins					
51		Sac Valley Blvd Plant, Site Improvements		-	-	101,000
			Total Water Supply	**-**	**-**	**101,000**
			Grand Total	**119,000**	**195,300**	**227,300**

III. DISCUSSION

A. Cordova – Recoat Coloma WTP Reservoir No.4

The Commission should deny GSWC's request to recoat the Coloma WTP Reservoir No.4 for a total of $3,761,600 in 2025 and 2026[3] because GSWC has not done its due diligence, which risks wasting ratepayers' funds on a project that might not be used and useful. GSWC has failed to follow its own Tank Management Program (TMP) by not performing either the seismic or structural evaluations before recoating the reservoir. GSWC also failed to properly maintain the reservoir and ignored its consultant's recommendation for maintenance and corrosion mitigation. The Commission should not include funding for this project until GSWC has done its due diligence and performed the required evaluations.

The TMP guidelines suggest that comprehensive evaluation of the reservoir is necessary to assess the conditions of the reservoirs and determine necessary reservoir improvements.[4] Specifically, the guidelines state that GSWC shall perform seismic and structural evaluation before performing major reservoir recoating as shown below:

> *"Structural and Seismic Reports:*
>
> *Structural and Seismic Reports shall be performed before major tank rehabilitation work (e.g. recoat). These reports may also be performed sooner based on observations in the tank inspections procured by Operations."*[5]

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[3] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, p.42 lines 14 to 16 identified design cost is $397,900 and construction cost is $3,363,700. P.43, line 5: Coloma Reservoir No. 4 is a 5.0 MG welded steel tank.

[4] GSWC's response to DR SN2-001, question 1.c: "Tank Management Program Guidelines Document, Golden State Water Company, August 2019" p.9, Section 5. Tank Reports: GSWC states, "Comprehensive tank reports are necessary to assess the condition of the tank and determine necessary improvements. The common types of tank reports include corrosion, seismic, structural, health and safety." Attachment 1-1, p. A-15.

[5] GSWC's response to DR SN2-001, question 1.c: "Tank Management Program Guidelines Document, Golden State Water Company, August 2019," p.10. Attachment 1-1, p. A-16.

As shown, the TMP guidelines require GSWC to perform seismic and structural evaluations before recoating a reservoir. However, GSWC admitted that no seismic and structural evaluations were completed. Further, GSWC stated that structural and seismic evaluations are only necessary when severe corrosion is present.[6] Severe corrosion is in fact occurring in the reservoir as evidenced by the consultant reports GSWC provided and GSWC was aware of it. In response to discovery, GSWC stated that the severity of corrosion is determined by an outside consultant.[7] The 2021 field/dive inspection report indicated the "…*corrosion is causing integrity loss on the trusses*."[8] The latest 2022 inspection report clearly states "*…corrosion related structural damage is occurring*"[9] Based on the consultant's inspection reports and its TMP guidelines, GSWC is required to conduct structural and seismic evaluations before recoating the reservoir.

GSWC should conduct all necessary evaluations before asking ratepayers to fund a return on such a significant capital investment. Recoating a 5 MG capacity reservoir, which costs nearly $3.8 million and has substantial corrosion, without verifying its seismic/structural conditions is an imprudent investment. GSWC should ensure the reservoir has a solid structure before recoating the reservoir. Otherwise, it risks wasting ratepayers' funds on a project that might not be used and useful. The Commission should

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[6] GSWC's response to DR SN2-004, questions 10.a. and 10.b: GSWC states, "No", also GSWC states, "*Structural and Seismic inspection is not typically needed as frequently as corrosion inspection. However, if severe corrosion is noted, that will trigger GSWC to pursue an additional evaluation prior to performing the recoating work*." Attachment 1-5, pp. A-74 to A-75.

[7] GSWC's response to DR SN2-004, questions 7.d and 7.e: GSWC states, "*GSWC did not develop a corrosion level, which requires remediation. The recommendation would come from a consultant's full inspection report*." Attachment 1-5, p. A-73.

[8] GSWC's response to DR SN2-001, question 1.d: Attachment '2021-Cordova-Res 4' p.10 of 10 *See* recommendation note. Attachment 1-1, p. A-41.

[9] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, Attachment AC01, the Harper and Associates Engineering (HAE), Inc., Corrosion Engineering Evaluation report (August 2022) for Coloma Reservoir No.4 (5.0 MG Welded Steel Water Storage Reservoir), the report identifies corrosion related structure damage is occurring, p.11 of 51, Section VI. Recommendations A.2. Interior Surfaces (b). Attachment 1-2 C, p. A-46. And other severe corrosions in the reservoir's interior surfaces, see Attachment 1-2 A and 1-2 B, pp. A-43 to A-45.

require GSWC to follow its own guidelines and perform structural and seismic evaluations before recoating the reservoir.

GSWC also has a history of mismanaging this reservoir. GSWC has known about the corrosion since at least 2015,[10] but failed to address the issue. In a 2021 inspection report, the corrosion in the interior roof had increased from the condition identified in 2015 inspection report. The 2021 report indicated that "…, [since] the last inspection the corrosion has increased about 5% totaling around 15 % of the trusses being covered in corrosion."[11] The report also showed pictures of corrosion covering 20% in the interior roof as shown in Figure 1.1.[12]

Figure 1.1: Coloma WTP Reservoir No.4 Interior Roof

INTERIOR ROOF

Coating					
Satisfactory		Y		N	X
Blistering		Y		N	X
Cracking		Y		N	X
Peeling		Y		N	X
Holidays		Y	X	N	
Corrosion	20%	Y	X	N	
Seams/Welds	Fair-poor				
Trusses	Poor				
Gussets	Fair-poor				
Coating					
Blistering		Y		N	X
Cracking		Y		N	X
Peeling		Y	X	N	
Holidays		Y	X	N	
Corrosion	20%	Y	X	N	
Vent Penetration	Fair-poor				
Roof Hatch	Fair-poor				

Conclusion/Discrepancies: Coating on the edges of the trusses has failed and corrosion has damaged the edges of the trusses. Corrosion also noted along the seams

[10] GSWC's response to DR SN2-001, question 1.d: Attachment '2015-Cordova-Res 4. Recommendation. Attachment 1-1, p. A-29.

[11] GSWC's response to DR SN2-001, question 1.d: Attachment '2021-Cordova-Res 4' p.10 of 10, *see* recommendation note. Attachment 1-1, p. A-41.

[12] GSWC's response to DR SN2-001, question 1.d: Attachment '2021-Cordova-Res 4' p.5 of 10. Attachment 1-1, p. A-36.

As a result of GSWC's failure to maintain the reservoirs properly, both the 2021 and the 2022 inspection reports identified that the reservoir is experiencing substantial corrosion and damage to its interior surface. This includes corrosion on the edges of the trusses, corrosion related to structural damage, and loss of truss integrity, all of which is also depicted in the photos within the reports. This corrosion is significantly worse than was observed in the 2015 inspection report.

GSWC has not only failed to follow its own guidelines and consultants' recommendations, but it also failed to follow the water industry standards. The American Water Works Association (AWWA) refers to the importance of inspecting a reservoir every 3 to 5 years.[13] GSWC performed only three inspections for the Coloma Reservoir No.4,[14] which is a 20-year-old reservoir built in 2002.

GSWC's failure to follow recommendations from its consultants, the AWWA, and the TPM guidelines has contributed to causing significant damage to this expensive plant asset. It is unreasonable for GSWC to ask its ratepayers now to pay for its past mismanagement of this asset. The Commission should require GSWC to follow its own guidelines and perform structural and seismic evaluations before recoating the reservoir. If GSWC believes the project is still prudent after the necessary evaluations are complete, it can propose the recoating project in a future rate case. The Commission can then accurately assess the reasonableness of this project. The Commission should deny GSWC's current request to recoat the Coloma WTP Reservoir No.4 for a total of $3,761,600 in rates because GSWC has failed to properly maintain the reservoir and did not perform the necessary evaluations prior to recoating the reservoir.

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[13] GSWC's response to DR SN2-001, question 1.c: GSWC states, "AWWA Manual M42 states that each "tank should be inspected at least once every 3 to 5 years" (p.108). Attachment 1-1, p. A-4.

[14] GSWC's response to DR SN2-001, question 1.d: GSWC provides field/dive cleaning & inspections reports in 2015, 2021. Attachment 1-1, p. A-5, Attachment 1-1, pp. A-20 to A-41. Also, an inspection report in 2022 (Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, Attachment AC01).

B. Cordova – Install two backup generators in Folsom South Canal plant and Pyrites WTP in 2025 and 2026.

The Commission should deny GSWC's request to install two additional backup generators in the Cordova system at the Folsom South Canal plant for a total of $1,018,900, and at the Pyrites plant for a total of $809,900 (2025 and 2026).[15] GSWC has sufficient system reliability/resiliency to handle power outages and meet system demands with its current generators.[16]

The Cordova system has two zones, the Cordova East Zone and the Cordova West Zone. GSWC proposes to install generators at the Folsom South Canal plant and the Pyrites Water Treatment Plant (WTP) in the Cordova East Zone. The Sacramento Municipal Unified District (SMUD) is the electrical utility provider serving the two plants.

GSWC’s reasons to request two permanent (standby) generators are to 1) address power outage problems that could affect the water supply, 2) increase system reliability to meet customers’ demands, and 3) reduce strain on the electrical grid during emergencies.[17] However, Cal Advocates’ analysis revealed that the Cordova system does not need generators as GSWC claims. The system has met customer demands and overcame every temporary outage in the past 10 years.[18]

GSWC provides no evidence that past power outages at the plant site affected its water supply. Based on historical power outage frequency and duration data from the

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[15] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, pages 40-42, Folsom South Canal Plant, Install Backup Generator (2025 and 2026), pages 45-47, Pyrites WTP, Install Backup Generator (2025 and 2026).

[16] GSWC’s Response to DR SN2-012, question 3, attachment ‘SN2-012 Q3 – Generators.’ Attachment 1-7, p. A-86 and p. A-96.

[17] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, pages 40-42, Folsom South Canal Plant, Install Backup Generator (2025 and 2026), pages 45-47, Pyrites WTP, Install Backup Generator (2025 and 2026).

[18] GSWC’s Response to DR SN2-001, question 3, attachment ‘SN2-012 Q3 – Generators.’ Attachment 1-7, p. A-86 and p. A-96.

past ten years, SMUD provides a very reliable electricity service to run the facilities. From 2014-2023, the Folsom South Canal plant only experienced 21 power outages that lasted between 1 second and 71 minutes as shown in Figure 1.2. The plant also had a planned outage for 5.5 hours on June 24, 2017, but the facility was able to operate without a generator. On June 17, 2022, GSWC performed a scheduled facility maintenance that required a 10-hour outage. GSWC rented a portable generator for $1,716.39 to meet the power need during this outage.[19]

Figure 1.2: Power Outage from 2014 to 2023 at the Folsom South Canal Plant.[20, 21]

Address: Folsom South	Meter #2517682	
Date	Duration of Outage	Reason of Outage
5/16/2014	0:00:04	Squirrel got into Disc and caused fire
2/6/2015	0:52	Lightening
4/7/2015	0:00:07	Damaged overhead equipment
8/10/2015	0:48	Primary Insulation Failure
12/5/2015	0:09	Squirrel into lightning arrestors
12/14/2015	0:03	Vehicle Accident
1/19/2016	0:00:19	Wind
9/30/2016	1:10	Tree Fell
12/15/2016	0:00:01	Tree outage
1/7/2017	0:47	Tree fell
3/6/2017	0:38	Switch Outage
6/24/2017	5:36	Planned Outage to fix line arm
1/6/2019	0:03	Tree Outage
3/2/2020	0:47	Damaged Equipment
3/7/2021	0:00:03	Feeder Outage
8/21/2021	0:51	Vehicle Accident
10/25/2021	0:29	Emergency Shut Down Vehicle Accident
12/15/2021	1:11	Broken Cross Arm
6/17/2022	10:01	Planned Maintenance
11/12/2022	0:00:01	No Cause Found
5/14/2023	0:00:01	Feeder Outage

There was not outage in 2013.

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[19] GSWC's Response to DR SN2-002 Generator (August 7, 2023), question 1.d. attachment 'SUNBELTRENTALSINC Invoice': June 16 to June 17, 2022, rental of a portable generator (250kW) for a total $1,1716 (*See* total invoice for $1,716.39). Attachment 1-4, p. A-66.

[20] GSWC's Response to DR SN2-002 Generator (August 7, 2023), question.1.a, attachment '10 Year History Folsom South Canal.' Note that there were no power outages in 2013. Attachment 1-4, p. A-65.

[21] GSWC's response to DR SN2-002 follow-up question by email (Unit of Time). Attachment 1-8, p. A-120.

In the same years, the Pyrites WTP experienced 26 power outages, which lasted between 1 second and 80 minutes.[22] During each of the power outages, the plant operated without running a generator. GSWC also has two large backup booster pumps that operate on natural gas instead of electricity at this facility.[23] The two natural gas booster pumps provide system reliability by making sure that facility can continue to supply water during an electrical power outage. Based on the power outage historical information and GSWC's operational ability to work without such standby generators, GSWC does not need to install a generator at each plant site. Should it become necessary, GSWC has the option to rent a portable generator as it did in 2022.

GSWC does not need to install additional permanent generators to increase the system's reliability to meet customers' demands in the Cordova system because the system already has sufficient reliability for the Cordova East Zone as GSWC identifies in its Water Master Plan and its responses to Cal Advocates discovery.

In GSWC's response to Cal Advocates' question on how GSWC has resolved the demand issues for the past ten years without a backup generator in the facility, GSWC admits that there were no incidents of the system being unable to meet customers' demands in the Cordova East Zone for the past ten years.[24, 25]

This is also supported by the Cordova System Master Plan, which states that the existing Cordova system has an adequate supply and storage capacity to meet its

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[22] GSWC's Response to DR SN2-002, question 2.a, attachment '10 Year History Coloma Pyrites WTP.' There were no power outages in 2013. Attachment 1-4, pp. A-67 to A-68.

[23] GSWC's Response to DR SN2-012, question 7.a, b, c, and d. Attachment 1-7, p. A-88. Also, the Cordova Water System Master Plan indicates the capacity of each natural gas booster pump (A & B) is 4,000 gpm. Coloma Treatment Plant and Pyrites WTP are located in the same facility.

[24] GSWC's Response to DR SN2-012, question 4.a, and 5.a GSWC indicates the system was capable to meet demands in the past 10 years. Attachment 1-7, pp. A-86 to A-87.

[25] GSWC's Response to DR SN2-006, question 1.a, and 2.a. system's supply and storage capacity met requirements in the past 10 years. Attachment 1-6, pp. A-77 to A-78.

demands as shown in Figure 1.3.[26] GSWC's Master Plan concludes that the Cordova system has no deficiencies for its supply and storage capacity.[27]

Figure 1.3: Cordova System – Existing System Supply and Capacity Analysis.

		Planning Scenario							
		ADD		**MDD**		**PHD**		**MDD+FF**	
Duration (Hours)		24		24		4		3	
Demand		GPM	MG	GPM	MG	GPM	MG	GPM	MG
Total Demand		**8,821**	**12.702**	**16,528**	**23.800**	**24,791**	**5.950**	**20,528**	**3.695**
Supply	Capacity								
Wells	11,500a	5,696	8.202	7,388	10.639	7,388	1.773	10,588	1.906
Connections	3,125	3,125	4.500	3,125	4.500	3,125	0.750	3,125	0.563
Boosters	31,750	-	-	6,015	8.661	14,278	3.427	6,815	1.227
Reservoirs	0.5	-	-	-	-	-	-	-	-
Total Supply		**8,821**	**12.702**	**16,528**	**23.800**	**24,791**	**5.950**	**20,528**	**3.695**
Supply Minus Demand		**0**	**0.000**	**0**	**0.000**	**0**	**0.000**	**0**	**0.000**
Supply Meets Demand		**YES**		**YES**		**YES**		**YES**	

Another reason GSWC proposes two backup generators in the Cordova system is to deal with climate change issues such as heat waves that cause spikes in energy consumption. During such incidents in 2022, the state governor and California ISO (CAISO) issued statewide flex alerts requesting Californians to conserve electricity due to the strain on the electrical grid. GSWC provided Cal Advocates an email dated Sept 5, 2022, from California Energy Commission (CEC) to California Public and Water Agencies.[28] The email announced that California's state entities such as Governor's Office, CEC, CPUC, California Air Resources Board (CARB) are working together during the extreme heat event in a coordinated effort to reduce demand using all the tools enabled under the governor's emergency proclamation. These state entities, including CEC and CPUC, requested public and water agencies to reduce maximum load possible

[26] GSWC's Cordova System Master Plan (December 2022), pp. 5-7 to 5-11, Section 5.3.4 Existing System Supply and Capacity Analysis. GSWC states, "The systemwide supply and storage analysis results for the existing system indicate that the existing supply meets the demands for all planning scenarios," and pp. 5-11 to 5-13, Section 5.3.5 Existing System Storage Analysis. GSWC states, "The existing system storage analysis results indicate no overall storage deficiency."

[27] GSWC's Cordova System Master Plan (December 2022), p.5-13, Section 5.3.7 Recommended Improvements to Address Deficiencies in the Existing System. GSWC states that "No deficiencies were identified in the Cordova System."

[28] GSWC's Response to DR SN2-012, question 11. Attachment 1-7, p. A-91, and Attachment 1-3, pp. A-48 to A-51.

from the electrical grid at their facilities from September 5 to September 8, 2022, typically from 4PM-10PM, with a specific focus between 5PM-8PM. Based on this email, GSWC claims it needs to add the two new generators to reduce the electric demands from the grid.

However, GSWC's interpretation of the governor's order, the State's emails, and the State's alerts is incorrect. The State's announcement did not request water utilities to purchase and install new generators on their facilities to reduce electric demands.[29] It asks the public and water agencies to utilize existing and available tools (including the existing generators) to mitigate the electric load issues during heat wave events. The announcement also introduces and promotes programs that are provided by the CEC and CPUC to compensate participants (public and water agencies) for emergency load reduction under the Demand Side Grid Support program (DSGS) and the Emergency Load Reduction Program (ELRP). The CEC encourages public and water utilities (such as GSWC) to enroll in the program to track the progress of load reduction from the grid and to compensate GSWC's effort for the load reductions by using GSWC's existing generator(s).[30] Neither the CEC nor CAISO requests water utilities (GSWC) to install new or additional generator(s) for the purpose of reducing load from the electric grid.[31, 32] The CEC-DSGS also does not set target requirements for utilities to reduce the load from the electric grid.[33] Based on this information, the Commission should encourage GSWC

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[29] GSWC's Response to DR SN2-012, question 11, see attachment 'SN2-002 Q11-Request.' Attachment 1-3 A, pp. A-48 to A-51.

[30] GSWC's Response to DR SN2-012, question 11, see attachment 'SN2-002 Q11-Request.' Attachment 1-3 A, pp. A-48 to A-51.

[31] CEC–DSGS email to Susana Nasserie (Cal Advocates), question 3. Attachment 1-3 B, p. A-55.

[32] CAISO email to Susana Nasserie (Cal Advocates). Attachment 1-3 C, p. A-56.

[33] CEC–DSGS email to Susana Nasserie. CEC-DSGS's Response to question 2.b: DSGS states: " The DSGS program team does not set load reduction targets for any participants." Attachment 1-3 B, p. A-54.

to participate in the DSGS program. GSWC has multiple generators[34] that can be used to participate in the program or during emergencies. The CEC or the CAISO does not require GSWC to install additional generators to participate in the program nor to reduce strain on the electrical grid during emergencies.

GSWC's requests for generators are not justified and are unnecessary. The Commission should deny GSWC's request to install two backup generators in the Cordova system at the Folsom South Canal plant for $1,018,900 (2025 and 2026) and at the Pyrites WTP for $809,900 (2025 and 2026).[35]

IV. CONCLUSION

The Commission should adopt the following to the Arden Cordova CSA budgets:

1. Reject GSWC's request of $3,761,600, in 2025 and 2026 to recoat the interior and exterior of the Coloma Water Treatment Plant (WTP) Reservoir 4 because GSWC has failed to properly maintain the reservoir and did not perform the necessary evaluations prior to recoating the reservoir.
2. Reject GSWC's request of $1,018,900 in 2025 and 2026 to install a backup generator in Folsom South Canal because the request is not justified and is unnecessary.
3. Reject GSWC's request of $809,900 in 2025 and 2026 to install a backup generator in Pyrites WTP because the request is not justified and is unnecessary.
4. Reject GSWC's request for various cost adders in 2024, 2025, and 2026 as discussed by Cal Advocates witnesses in separate reports, see footnote 1.

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[34] GSWC's Response to DR SN2-012, question 3, attachment 'SN2-012 Q3 – Generators.' Attachment 1-7, p. A-96.

[35] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, pages 40-42, Folsom South Canal Plant, Install Backup Generator (2025 and 2026), pages 45-47, Pyrites WTP, Install Backup Generator (2025 and 2026).

CHAPTER 2 : PLANT – BAY POINT

I. INTRODUCTION

This chapter presents Cal Advocates' recommended adjustments to GSWC's capital budget requests for the Bay Point CSA. The Bay Point CSA has one water system.

II. SUMMARY OF RECOMMENDATIONS

The Commission should make the following adjustments to GSWC's Bay Point CSA budgets:

1. Reject GSWC's request for $317,800 in 2025 to replace Hill Street Well No.2 (Phase 1) because it does not provide ratepayer benefit in this GRC cycle.
2. Reject GSWC's request for $189,900 in 2026 to perform a recycled water study because it does not provide ratepayer benefit in this GRC cycle.
3. Reject GSWC's request for $113,300 in 2025 to perform a ductile iron pipeline study because it does not provide ratepayer benefit in this GRC cycle.
4. Reject GSWC's request for various cost adders in 2025 and 2026 as discussed by Cal Advocates witnesses in separate reports, see footnote 1.

Table 2-1 below presents a comparison of GSWC's total request and Cal Advocates' total recommended plant additions for specific projects in 2025 and 2026. Cal Advocates opposes several specific projects in 2025 and 2026 as presented in section III. DISCUSSION.

Table 2-1: Proposed Capital Budget – Bay Point CSA[36]

Bay Point ($000)	2024	2025	2026	Total
Cal Advocates	-	72.7	70.1	142.8
GSWC	-	511.1	306.3	817.4
GSWC > Cal Advocates	-	438.4	236.2	674.6
Cal Advocates as % of GSWC	-	14%	23%	17%

Table 2-2 presents GSWC's request of plant addition (capital) budget for specific projects in 2024, 2025, and 2026. Table 2-3 presents Cal Advocates' recommended plant addition (capital) budget for specific projects in 2024, 2025 and 2026.

Table 2-2: GSWC Capital Budget – Bay Point CSA[37]

Budget Group	Description	2024 Proposed Budget	2025 Proposed Budget	2026 Proposed Budget
	Bay Point			
51	Hill Street Plant, Replace Well No. 2	-	317,800	-
	Total Water Supply	-	**317,800**	-
	Bay Point			
55	Baypoint System, Trailer Vac Assembly	-	-	116,400
55	Baypoint System, Recycled Water Study	-	-	189,900
55	Bay Point System, Ductile Iron Pipeline Condition Pilot Study	-	113,300	-
	Total Miscellaneous	-	**113,300**	**306,300**
	Bay Point			
55	Bay Point System, 2025 Urban Water Management Plan	-	80,000	-
	Total Miscellaneous	-	**80,000**	-
	Grand Total	-	**511,100**	**306,300**

[36] GSWC does not request budgets for specific projects in 2024.

[37] GSWC Capital Projects Lists Workpapers, (RO Model)

Table 2-3: Cal Advocates Capital Budget – Bay Point CSA

Budget Group	Description			2024 Proposed Budget	2025 Proposed Budget	2026 Proposed Budget
	Bay Point					
51		Hill Street Plant, Replace Well No. 2		-	-	-
			Total Water Supply	-	-	-
	Bay Point					
55		Baypoint System, Trailer Vac Assembly		-	-	70,100
55		Baypoint System, Recycled Water Study		-	-	-
55		Bay Point System, Ductile Iron Pipeline Condition Pilot Study		-	-	-
			Total Miscellaneous	-	-	**70,100**
	Bay Point					
55		Bay Point System, 2025 Urban Water Management Plan		-	72,700	-
			Total Miscellaneous	-	**72,700**	-
			Grand Total	-	**72,700**	**70,100**

III. DISCUSSION

A. Hill Street Well No. 2, Replace Well – Phase 1

The Commission should deny GSWC's request to replace Hill Street Well No.2 for $317,800 in 2025[38] because the Phase 1 (design and permit) of the project does not provide any tangible benefits for ratepayers in this GRC cycle. The project will provide ratepayer benefit when it is completed and becomes used and useful. There is no need for the ratepayers to fund Phase 1 of the project in this GRC.

GSWC proposes to complete this well replacement project in two phases. Phase 1 covers the design and permit in this GRC, and Phase 2 will cover the drill and equip the well and tie it into the distribution system construction in the next GRC. The Phase 1 project in this GRC will not provide tangible benefits for the ratepayers and as such should not be allowed to earn a return on such capital expenditure. Instead, GSWC may include the cost of design and permit along with the cost of drilling and equipping the well in a future rate case when the proposed project is expected to be used and useful

[38] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, pp. 52-53.

during the period for which rates are set. The Commission should deny GSWC's request to place $317,800 in 2025 rate base for the design and permitting of Hill Street Well No.2 replacement, as no portion of the project will be used and useful during the years in which rate base is established in this proceeding.

B. Recycled Water Study

The Commission should deny GSWC's request to perform a $189,900 study in 2026 to determine the feasibility for implementing recycled water for the Bay Point system.[39] This study provides no benefits for the ratepayers in this GRC cycle because the result of the study is unknown until it is completed. GSWC's request to earn a return on the study would shift the entire risk of the study onto ratepayers as the study may not result in an actual project. Ratepayers should only pay for used and useful projects that provide them with tangible benefits.

GSWC should request the cost of the study in a future GRC when the result of the study is determined and would lead to a useful project for the ratepayers. For this GRC, the Commission should deny GSWC's request for advance ratepayer funding of the proposed Recycled Water study for $189,900 in 2026.

C. Ductile Iron Pipeline Condition Pilot Study

The Commission should deny GSWC's request to have ratepayers provide funding for GSWC to perform a study for $113,300 in 2025 on ductile iron pipelines.[40] This study provides no benefits for the ratepayers in this GRC because the result of the study is unknown until it is completed. GSWC's request to earn a return on the study prior to the study's recommendations becoming used and useful projects, would shift the entire risk of the study onto ratepayers as the study may not result in an actual project.

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[39] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, pp. 55-56.

[40] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, pp. 57-58.

Ratepayers should only have to pay for used and useful projects that provide them with tangible benefits.

GSWC should request the cost of the study in a future GRC when the result of the study is determined and shown to produce a useful project for the ratepayers. For this GRC, the Commission should deny GSWC's request to have ratepayers fund a ductile iron pipeline study for $113,300 in 2025.

IV. CONCLUSION

The Commission should adopt GSWC's Bay Point CSA budgets as the following:

1. Reject GSWC's request for $317,800 in 2025 to replace Hill Street Well No.2 (Phase 1) because it does not provide ratepayer benefit in this GRC cycle.
2. Reject GSWC's request for $189,900 in 2026 to perform a recycled water study because it does not provide ratepayer benefit in this GRC cycle.
3. Reject GSWC's request for $113,300 in 2025 to perform a ductile iron pipeline study because it does not provide ratepayer benefit in this GRC cycle.
4. Reject GSWC's request for various cost adders in 2025 and 2026 as discussed by Cal Advocates witnesses in separate reports, see footnote 1.

CHAPTER 3 : PLANT – CLEARLAKE

I. INTRODUCTION

This chapter presents Cal Advocates' recommended adjustments to GSWC's capital budget requests for the Clearlake CSA.

II. SUMMARY OF RECOMMENDATIONS

The Commission should make the following adjustments to GSWC's Clearlake CSA budgets:

1. Reduce GSWC's request of a total amount of $394,900 in 2025 and 2026 for site improvements in Manchester Plant to $70,400, because the pump house replacement is not needed.
2. Deny GSWC's request of $970,600 in 2026 for Supervisory Control and Data Acquisition (SCADA) upgrade design (Phase 1) because it does not provide benefit to ratepayers in this GRC cycle.
3. Reject GSWC's request for various cost adders in 2025 and 2026 as discussed by Cal Advocates witnesses in separate reports, see footnote 1.

Table 3-1 below presents a comparison of GSWC's total request and Cal Advocates' total recommended plant additions for specific projects in 2025 and 2026. Cal Advocates opposes several specific projects in 2025 and 2026 as presented in section III. DISCUSSION.

Table 3-1: Proposed Capital Budget – Clearlake CSA[41]

Clearlake ($000)	2024	2025	2026	Total
Cal Advocates	-	318.8	70.4	389.2
GSWC	-	652.4	1,323.1	1,975.5
GSWC > Cal Advocates	-	333.6	1,252.7	1,586.3
Cal Advocates as % of GSWC	-	49%	5%	20%

Table 3-2 presents GSWC's request of plant addition (capital) budget for specific projects in 2024, 2025, and 2026. Table 3-3 presents Cal Advocates' recommended plant addition (capital) budget for specific projects in 2024, 2025 and 2026.

Table 3-2: GSWC Capital Budget – Clearlake CSA[42]

Budget Group	Description			2024 Proposed Budget	2025 Proposed Budget	2026 Proposed Budget
	Clearlake					
51		Manchester Plant, Site Improvements		-	41,800	353,100
			Total Water Supply	-	41,800	353,100
	Clearlake					
54		Sonoma WTP, Change-out GAC & Recoat Interior		-	610,600	-
			Total Water Quality	-	610,600	-
	Clearlake					
51		Clearlake Systemwide SCADA Upgrade Design		-	-	970,000
			Total Water Supply	-	-	970,000
			Grand Total	-	652,400	1,323,100

41 GSWC does not request budgets for specific projects in 2024.

42 GSWC Capital Projects Lists Workpapers, (RO Model)

Table 3-3: Cal Advocates Capital Budget – Clearlake CSA

Budget Group	Description	2024 Proposed Budget	2025 Proposed Budget	2026 Proposed Budget
	Clearlake			
51	Manchester Plant, Site Improvements	-	-	70,400
	Total Water Supply	**-**	**-**	**70,400**
	Clearlake			
54	Sonoma WTP, Change-out GAC & Recoat Interior	-	318,800	-
	Total Water Quality	**-**	**318,800**	**-**
	Clearlake			
51	Clearlake Systemwide SCADA Upgrade Design	-	-	-
	Total Water Supply	**-**	**-**	**-**
	Grand Total	**-**	**318,800**	**70,400**

III. DISCUSSION

A. Clearlake – Site Improvements in Manchester Plant.

The Commission should reduce GSWC's request of a total amount of $394,900 in 2025 and 2026[43] for site improvements in Manchester Plant to $70,400[44] because GSWC does not justify the need to replace the existing wooden pump house. GSWC's request consists of installing a chain link fence for $134,500 and replacing the pump house for $260,400.[45] After removing unnecessary cost adders, the total amount to replace the chain link fence is $70,400.[46]

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[43] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, pp. 52-53. ($41,800 in 2025 and $353,100 in 2026)

[44] This cost is for chain link fence installation, after the removal of various cost adders.

[45] GSWC's workpapers: PCE_RI - Clearlake (Manchester Plant, Site Improvements) and . These costs include the cost adders. Cal Advocates calculation for GSWC's pump house of $260,400. Attachment 3-2, pp. A-148 to A-149.

[46] Cal Advocates recalculates using GSWC's workpapers: PCE_RI - Clearlake (Manchester Plant, Site Improvements) and SEC-51_RB_FDR Capital Budget, Project List - DO NOT SORT! Sheet. The $70,400 includes $55,750 cost of chain link fence related items (chain link, demolition to existing fencing, and gates, after removal of various cost adders), and $14,650 Cal Advocates recommended Escalation and Overhead cost.

GSWC's proposed budget to replace a 32 sqft[47] pump house for $260,400 is unreasonable to ratepayers and should not be included in rates. The request is unnecessary because GSWC has adequate access to the pump house. The current pump house is in good condition and has hinges that can be opened to allow access to the pump.

Figure 3-1. Cal Advocates field trip to Manchester plant site on October 30, 2023

During the site visit, Cal Advocates did not observe any apparent issues with the wooden pump house.[48] Furthermore, it should be readily evident from the picture above that $260,400 to replace the wooden pump house appears incredibly excessive. Records show that GSWC is able to operate the booster pump and perform necessary maintenance. GSWC's pump test reports show that from 2019 to 2023, its operator accessed the pump 5 times in the last five years for the annual routine pump tests.[49]

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[47] GSWC's response to DR SN2-016, question 4. The wooden structure is 8 ft long x 4 ft wide x 3.5 ft high. Cal Advocates calculates the wooden footprint area is 8 x 4 = 32 sqft. Attachment 3-1, p. A-128.

[48] Cal Advocates field trip to Manchester plant site on October 30, 2023.

[49] GSWC's Response to DR SN2-016, question 1. See attachment 'SN2-016 Q1 - Pump Tests.' (2019 to 2023). Attachment 3-1, pp. A-129 to A-147.

The Commission should reject the pump house replacement for $260,500 and allow only $70,400 in 2025 and 2026 for installing the chain link fence at the Manchester plant.

B. Clearlake – SCADA Upgrade Design in 2026

The Commission should deny ratepayer funding for the SCADA Upgrade Design project in 2026 for $970,000[50], [51] because GSWC's request in this GRC is limited to the design and permit phase of the project and will not produce any used and useful project in the current GRC cycle. A SCADA system is a distributed computerized system primarily used to remotely control and monitor the condition of field-based assets from a central location. Field-based assets include wells, pump stations, valves, treatment plants, and reservoirs.[52] In this GRC, GSWC proposes to complete this SCADA project in two phases. Phase 1 covers the design and permit in this GRC, and Phase 2 will cover the SCADA system upgrade construction including installations of the SCADA system in the Clearlake Office and its remote sites in a future GRC.[53]

As discussed previously, a project is not used and useful until it is completed. Ratepayers will not receive benefit when only the design and permit phase is completed. GSWC may include the cost of the design and permit in a future GRC when it is ready to present the project as used and useful and providing actual ratepayer benefit. Ratepayers should only pay for projects that provide them with benefits.

The Commission should deny GSWC's request of SCADA Upgrade Design project for $970,000 (in 2026) in rates as this project is not used and useful in this GRC cycle.

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[50] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, p.62.

[51] GSWC's testimony: Jeung and Kubiak Field Technology Testimony - Vol 1 of 2 - APP, p.68, line 17.

[52] https://www.uky.edu/WDST/SCADA.html

[53] GSWC's testimony: Jeung and Kubiak Field Technology Testimony - Vol 1 of 2 - APP, pp. 54 – 73.

IV. CONCLUSION

The Commission should adopt GSWC's Clearlake CSA budgets as the following:

1. Reduce GSWC's request of $394,900 in 2025 and 2026 for site improvements in Manchester Plant to $70,400 because the pump house replacement is not needed.
2. Deny GSWC's request of $970,600 in 2026 for SCADA upgrade design (Phase 1) because it does not provide benefit to ratepayers in this GRC cycle.
3. Reject GSWC's request for various cost adders in 2025 and 2026 as discussed by Cal Advocates witnesses in separate reports, see footnote 1.

CHAPTER 4 : PLANT – LOS OSOS

I. INTRODUCTION

This chapter presents Cal Advocates' recommended adjustments to GSWC's capital budget in the Los Osos CSA, which consists of the Los Osos and Edna Road water systems.

II. SUMMARY OF RECOMMENDATIONS

The Commission should make the following adjustments to GSWC's request for the Los Osos CSA budgets:

1. Reject GSWC's request of $824,800 in 2026 to perform well rehabilitation for Rosina Well No.1 because this project is premature.
2. Reject GSWC's request of $996,700 in 2026 to perform well rehabilitation for South Bay Well No.1 because this project is premature.
3. Reduce GSWC's request of $447,900 in 2025 and 2026 for fire hardening improvements in three plant sites to a total of $224,400 because chain link fence is a more cost-effective alternative to GSWC's proposed masonry wall at the South Bay Plant.
4. Reduce GSWC's request of $238,600 to recoat the exterior of Calle Cordoniz Reservoir to $118,400 in 2026 because GSWC has revised the cost due to an estimate error.
5. Reject GSWC's request for various cost adders in 2025 and 2026 as discussed by Cal Advocates witnesses in separate reports, see footnote 1.

Table 4-1 below presents a comparison of GSWC's total request and Cal Advocates' total recommended plant additions for specific projects in 2025 and 2026. Cal Advocates opposes several specific projects in 2025 and 2026 as presented in section III. DISCUSSION.

Table 4-1: Proposed Capital Budget – Los Osos CSA[54]

Los Osos ($000)	2024	2025	2026	Total
Cal Advocates	-	18.7	642.4	661.1
GSWC	-	78.6	2,952.8	3,031.4
GSWC > Cal Advocates	-	59.9	2,310.4	2,370.3
Cal Advocates as % of GSWC	-	24%	22%	22%

Table 4-2 presents GSWC's request of plant addition (capital) budget for specific projects in 2024, 2025, and 2026. Table 4-3 presents Cal Advocates' recommended plant addition (capital) budget for specific projects in 2024, 2025 and 2026.

Table 4-2: GSWC Capital Budget – Los Osos CSA[55]

Budget Group	Description			2024 Proposed Budget	2025 Proposed Budget	2026 Proposed Budget
	Los Osos					
51		South Bay Well No. 1, Well Improvemen		-	-	996,700
51		Rosina Well No. 1, Well Improvements		-	-	824,800
			Total Water Supply	-	-	1,821,500
	Los Osos					
54		Los Osos System, Chlorine Analyzers		-	-	171,000
			Total Water Quality	-	-	171,000
	Los Osos					
51		Los Osos System, Fire Hardening Improv		-	47,900	400,000
51		Calle Cordoniz Plant, Recoat Reservoir		-	-	238,600
			Total Water Supply	-	47,900	638,600
	Los Osos					
51		Travis Dr, Replace Check Valve with PRV		-	30,700	-
	Edna Road					
51		Edna Road, Destroy Well No. 2		-	-	321,700
			Total Water Supply	-	30,700	321,700
		Grand Total		-	78,600	2,952,800

54 GSWC does not request budgets for specific projects in 2024.

55 GSWC Capital Projects Lists Workpapers, (RO Model)

Table 4-3: Cal Advocates Capital Budget – Los Osos CSA

Budget Group	Description		2024 Proposed Budget	2025 Proposed Budget	2026 Proposed Budget
	Los Osos				
51		South Bay Well No. 1, Well Improvements	-	-	-
51		Rosina Well No. 1, Well Improvements	-	-	-
		Total Water Supply	**-**	**-**	**-**
	Los Osos				
54		Los Osos System, Chlorine Analyzers	-	-	104,100
		Total Water Quality	**-**	**-**	**104,100**
	Los Osos				
51		Los Osos System, Fire Hardening Improvements	-	-	224,200
51		Calle Cordoniz Plant, Recoat Reservoir	-	-	118,400
		Total Water Supply	**-**	**-**	**342,600**
	Los Osos				
51		Travis Dr, Replace Check Valve with PRV	-	18,700	-
	Edna Road				
51		Edna Road, Destroy Well No. 2	-	-	195,700
		Total Water Supply	**-**	**18,700**	**195,700**
		Grand Total	**-**	**18,700**	**642,400**

III. DISCUSSION

A. Los Osos – Well Rehabilitation: Rosina Well No.1

The Commission should deny GSWC's request of $824,800 in 2026 to perform well rehabilitation for Rosina Well No.1[56] because this well project is premature. Rosina Well No.1 is subjected to seawater intrusion. GSWC has not completed its systemwide well study that the Commission authorized in the last GRC to identify a suitable location for drilling a new well, address water quality issues, and mitigate seawater intrusion risk in the Los Osos system.[57] To ensure the prudency of the proposed investment, GSWC

[56] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, pp. 64-65.

[57] GSWC 2020 GRC -GSWC's Hanford and Insco Operating District Capital Testimony APP, pp. 69-70, GSWC requested a systemwide new well study budget in 2020 GRC. Attachment 4-2, pp. A-166 to A-168. And GSWC’s workpaper: CWIP file: Y_SEC-50_RB_CWIP, tab: IN_CWIP. Line 687, GSWC indicates that the study will be completed in 2024 for a total of $578,000 ($1,670 in 2022, $45,000 in 2023, $531,330 in 2024).

should allow the well study to be completed before proposing rehabilitation of Rosina Well No.1.[58]

In its testimony, GSWC states that the purpose to rehabilitate the Rosina Well No.1 is to increase its pumping capacity and to extend the well's useful life.[59] However, GSWC's stated purpose does not make sense for the following reasons:

1) Rosina Well No.1 has a problem with seawater intrusion.[60] Increasing production risks further impacting the Los Osos Groundwater Basin (the Basin) and exacerbating the seawater intrusion problem. GSWC also states that "Rosina Well is rarely used now" in order to reduce the burden of seawater intrusion.[61] It does not make sense that GSWC insists on rehabilitating and increasing its well capacity knowing that the well is rarely used and that increasing production could worsen the seawater intrusion problem.
2) In the prior 2020 GRC, the Commission authorized GSWC to perform a systemwide study to identify the well option and optimal site for new well(s) in the Los Osos system. The study aims to maintain a reliable water supply for GSWC's customers while addressing the seawater intrusion and other water quality issues in the Los Osos system.[62] GSWC's consultant is still performing

[58] GSWC's workpaper: CWIP file: Y_SEC-50_RB_CWIP, tab: IN_CWIP. Line 687.

[59] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, p. 64. Lines: 8-10. Project Description: Perform rehabilitation of Rosina Well No.1 to improve yield and efficiency and extend the useful life of the well.

[60] GSWC's Los Osos Water System Master Plan (December 2022), section 7.4.3 Seawater Intrusion, Total Dissolved Solids and Chloride pp. 7-6 to 7-7.

[61] GSWC's Los Osos Water System Master Plan (December 2022), section 7.4.3 Seawater Intrusion, Total Dissolved Solids and Chloride pp. 7-6 to 7-7.

[62] GSWC 2020 GRC -GSWC's Hanford and Insco Operating District Capital Testimony APP, pp. 69-70. Systemwide, New Well Study in 2022 for $159,400 in 2022 as submitted in A.20-07-012. Attachment 4-2, pp. A-166 to A-168.

the study.[63] As described above, GSWC does not use Rosina Well No.1 regularly to meet its normal customer demand. GSWC may have to abandon this well depending on the final result of the systemwide study.[64] GSWC should wait and consider the results of the study before rehabilitating well(s) in the Los Osos system. Without considering the study results, this well rehabilitation project risks ratepayers investing in an expensive asset that may not be used and useful.

GSWC's request for the well rehabilitation project is both premature and unnecessary in this GRC. The Commission should deny GSWC's request to improve the well for $824,800 in 2026 until it has completed its systemwide study.

B. Los Osos – Well Rehabilitation: South Bay Well No.1

The Commission should deny GSWC's request of $996,700 in 2026 to rehabilitate the South Bay Well No.1 because the project is unnecessary. GSWC plans to rehabilitate the well to improve the well's capacity, efficiency, and extend its useful life.[65] However, GSWC fails to justify the need for this project.

GSWC's request to rehabilitate this well is not supported. GSWC indicates that the well is running fine after a successful recent rehabilitation.[66] The South Bay Well No.1 has a design capacity of 250 gpm.[67] In 2023, GSWC replaced the well pump and its

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[63] GSWC's workpaper: CWIP file: Y_SEC-50_RB_CWIP, tab: IN_CWIP. Line 687, GSWC indicates that the study will be completed in 2024.

[64] GSWC's Los Osos Water System Master Plan (December 2022), section 7.4.3 Seawater Intrusion, Total Dissolved Solids and Chloride pp. 7-6 to 7-7. GSWC states "Seawater intrusion in the basin has been caused by over pumping of lower aquifer wells on the west side of the basin. To mitigate this, the basin plan calls for the abandonment of westerly lower aquifer wells, and for future wells to be drilled either in the upper aquifer or on the east side of the basin. Within the next one to five years a new well that meets the above requirements should be drilled. A replacement well drilled in the upper aquifer would likely be high in nitrate and necessitate additional nitrate treatment capacity in the system."

[65] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, pp. 63-64.

[66] GSWC's Response to DR SN2-013, question 25. Attachment 4-1, p. A-165.

[67] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, p.63, line 12.

column which restored its well pump capacity.[68] Even though the well capacity has been restored, GSWC still requests to spend another $996,700 to rehabilitate the well. Based on this more recent information, further rehabilitation of the well is not needed at this time.

In addition, GSWC has not completed its systemwide well study in the Los Osos system that the Commission authorized in the last GRC. GSWC has water quality issues in the Los Osos system[69] and is conducting a study to determine if its wells, including South Bay Well No.1, should be relocated and to identify potential sites for drilling the new wells. Therefore, spending additional funds on rehabilitating the existing wells that might be relocated or abandoned is not the best use of ratepayer funds. GSWC should complete its systemwide study before rehabilitating South Bay No.1 in this GRC cycle.

The Commission should deny GSWC's request of $996,700 in 2026 to rehabilitate the South Bay Well No.1 as the need for the rehabilitation is not justified and, in addition, the Commission should require GSWC to complete the study, evaluate the result, and then decide if it makes sense to perform the well rehabilitation projects. GSWC may propose an appropriate solution based on the result of the study in a subsequent GRC.

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[68] GSWC's Response to DR SN2-013, question 25. GSWC states that well pumping rate was restored. Attachment 4-1, p. A-165.

[69] GSWC's Los Osos Water System Master Plan (December 2022), section 7.4 Water Quality Evaluation p. 7-3, subsection 7.4.3 Seawater Intrusion, Total Dissolved Solids and Chloride pp. 7-6 to 7-7. Also, GSWC's Response to DR SN2-013, questions 8, and 16 (dated Dec 6, 2023), the Los Osos system is subjected to seawater intrusion and other water quality (nitrates) issues. Attachment 4-1, pp. A-156 to A-158, and p. A-162.

C. Los Osos – Recoat Reservoir in Calle Cordoniz Plant

The Commission should reduce GSWC's request of $238,600[70] to recoat the exterior of Calle Cordoniz Reservoir [71] to $118,400[72] in 2026 because GSWC revised its cost estimate during discovery and opposes the various cost adders.

GSWC requests to recoat the exterior of the Calle Cordoniz Reservoir in Calle Cordoniz plant. Cal Advocates discovered that GSWC's estimated cost of cleaning and painting the reservoir was two times higher than its consultant's estimate. In its DR response, GSWC admitted the error[73] and Cal Advocates revised the unit cost in its workpaper from $54,000 to $27,000.[74] Cal Advocates also opposes various cost adders, as discussed by other witnesses in different report. The correction of this error has resulted in $118,400[75] as the new project estimate after the removal of various cost adders. The Commission should reduce GSWC requested budget to $118,400 in 2026.

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[70] GSWC's workpaper: PCE_RI - Los Osos (Calle Cordoniz Plant, Recoat Reservoir).xlxs, tab Estimate Creator. The $238,600 budget includes $54,000 reservoir exterior recoating cost, $66,750 other reservoir cost (Inspection cost $60,000, install second roof hatch $4,500, install mesh screening to the center vent $,2,250, totaling $66,750), and $117,850 cost adders.

[71] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, pp. 69-70.

[72] This is a total cost after the correction and the removal of the various cost adders.

[73] GSWC's Response to DR SN2-012, question 16. b.i. GSWC states, "This number is entered in error. The correct number would be the average, which is $27,000." Attachment 1-7, p. A-93.

[74] GSWC's workpaper: PCE_RI - Los Osos (Calle Cordoniz Plant, Recoat Reservoir).xlxs, Tab Estimate Creator, line 515, shows the unit cost of abrasive blast cleaning exterior & epoxy/urethane paint as $54,000, Cal Advocates revised it to $27,000.

[75] Cal Advocates recalculates using GSWC's workpapers: PCE_RI - Los Osos (Calle Cordoniz Plant, Recoat Reservoir).xlxs and SEC-51_RB_FDR Capital Budget, Project List - DO NOT SORT! Sheet. The $118,400 includes a $27,000 of corrected recoating cost, a $66,750 of other reservoir related cost, and a $24,650 of escalation and overhead cost (after the removal of various cost adders).

D. Los Osos – Fire Hardening Improvement

The Commission should reduce GSWC's request of $447,900[76] to perform fire hardening improvements at three plant sites in the Los Osos System to a total of $224,200[77] in 2025 and 2026 because GSWC does not need to replace the existing wooden fence with a masonry wall. Instead, GSWC should install chain-link fencing, which is a more cost-effective alternative.

GSWC requests to perform fire hardening improvements at three plant sites, Calle Cordoniz, South Bay, and Country Club locations. GSWC's consultant, Rohde & Associates LLC (RA), provides recommendations to fire-harden the three plant sites.[78] The RA consultant recommends that the South Bay plant site should replace its wooden fence with either chain link or a fire resistive wall.[79] GSWC proposes installing a masonry wall, which costs $360 per linear foot (LF),[80] instead of $115 per LF for a chain link fence.

GSWC's consultant recommends GSWC use either a masonry wall or chain-link fence. Given that chain-link fence is substantially more cost effective while providing similar benefits, it makes logical sense that GSWC should select the chain-link fence. However, GSWC decides to select the masonry wall option instead. GSWC's decision to

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[76] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, pp. 69-70. Calle Cordoniz Plant Site, South Bay Plant Site, and Country Club Plant Site.

[77] Cal Advocates recalculates using GSWC's workpapers: PCE_RI - Los Osos (Los Osos System, Fire Hardening Improvements), and SEC-51_RB_FDR Capital Budget, Project List - DO NOT SORT! Sheet. The 224,200 includes a $177,520 cost after replacing existing fence with chain-link instead of a masonry wall, a $46,680 of escalation and overhead cost (after the removal of various cost adders). Attachment 4-4, p. 4.28.

[78] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, Attachment LO02, the Rohde & Associates LLC (RA), Los Osos/Edna Wildfire Resiliency Review, March 2020.

[79] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, Attachment LO02, the RA Los Osos/Edna Wildfire Resiliency Review, March 2020. On p.9 of 14, section Needs, in South Bay plant the RA consultant states, "Recommend replacement of the wooden fence with either chain link or a fire resistive wall."

[80] GSWC's workpapers file: PCE_RI - Los Osos (Los Osos System, Fire Hardening Improvements), tab: Estimate Creator, line 521: item South Bay: Install masonry wall 6 feet high for $360/LF (cell:I521).

select the more expensive option will only benefit itself at the expense of the ratepayers. To minimize the rate impact onto the ratepayers, Cal Advocates replaces the budget of the masonry wall with the chain-link fence in its workpapers.[81] This adjustment will lower GSWC's budget to $224,200 for the three plant sites.

IV. CONCLUSION

The Commission should make the following adjustments to GSWC's requests for the Los Osos budget:

1. Reject GSWC's request of $824,800 in 2026 to perform well rehabilitation for Rosina Well No.1 because this project is premature.
2. Reject GSWC's request of $996,700 in 2026 to perform well rehabilitation for South Bay Well No.1 because this project is premature.
3. Reduce GSWC's request of $447,900 in 2025 and 2026 for fire hardening improvements in three plant sites to a total of $224,400 because chain link fence is a more cost-effective alternative to GSWC's proposed masonry wall at the South Bay Plant.
4. Reduce GSWC's request of $238,600 to recoat the exterior of Calle Cordoniz Reservoir to $118,400 in 2026 because GSWC has revised the cost due to an estimate error.
5. Reject GSWC's request for various cost adders in 2025 and 2026 as discussed by Cal Advocates witnesses in separate reports, see footnote 1.

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[81] GSWC's workpapers file: PCE_RI - Los Osos (Los Osos System, Fire Hardening Improvements), tab: Estimate Creator, line 521: removed masonry wall. Added line 121 for item 'Chain Link' with unit cost $115 per LF. Attachment 4-4, p. 4.28.

CHAPTER 5 : PLANT - SANTA MARIA

I. INTRODUCTION

This chapter presents Cal Advocates' recommended adjustments to GSWC's capital budget requests for the Santa Maria CSA, which consists of six water systems: Lake Marie, Orcutt, Sisquoc, Tanglewood, Nipomo and Cypress Ridge.

II. SUMMARY OF RECOMMENDATION

The Commission should make the following adjustments to GSWC's request for the Santa Maria CSA budgets:

1. Reject GSWC's request of a total of $1,200,100 in 2025 and 2026 to reconstruct the Lake Marie booster station because it is not needed.
2. Reject GSWC's request of 207,600 in 2026 to perform Nitrate Blending Modifications study at Mira Flores No.1 Plant because it does not provide ratepayer benefit in this GRC.
3. Reject GSWC's request of $69,000 in 2026 to destroy Mira Flores Well No.3 at Mira Flores Plant including disposing facilities associated with the well (Phase 1) because it does not provide ratepayer benefit in this GRC cycle.
4. Reject GSWC's request of $359,200 in 2026 to replace Orcutt Well No.1 (Phase 1) because it does not provide ratepayer benefit in this GRC cycle.
5. Reject GSWC's request of $69,000 in 2026 to destroy Willowood Well No.1 at Willowood Plant including disposing facilities associated with the well (Phase 1) because it does not provide ratepayer benefit in this GRC cycle.
6. Reject GSWC's request of $358,100 in 2026 to drill a new well in Willowood Plant (Phase 1) because it does not provide ratepayer benefit in this GRC cycle.
7. Reject GSWC's request for a total of $2,446,100 in 2024 and 2025 to recoat the La Serena Reservoir No.1 and La Serena Reservoir No.2 because the current problems with the reservoirs are the result of GSWC's mismanagement and failure to adequately maintain these reservoirs.

8. Reject GSWC’s request of a total of $2,282,100 in 2025 and 2026 to replace Reservoir No.1 in Cypress Ridge Plant because it is not needed.
9. Reject GSWC's request for a total of $2,005,700 in 2024 and 2025 to equip Rural Well No.5 in Cypress Ridge system because the supply capacity from this well is not needed.
10. Reject GSWC’s request of $282,600 in 2025 to perform Nitrate Treatment Feasibility study at Cypress Ridge system because it does not provide ratepayer benefit in this GRC cycle.
11. Reduce GSWC’s request of $2,926,800 in 2024 for SCADA upgrades in the Lake Marie, Sisquoc, Tanglewood and Nipomo systems (Santa Maria CSA) to 412,500 based on the 2018 to 2022 average of SCADA installation historical expenditure in Santa Maria CSA because GSWC has not shown any cost savings that usually result from such upgrades that benefit the ratepayers.
12. Reject GSWC’s request for various cost adders in 2024, 2025, and 2026 as discussed by Cal Advocates witnesses in separate reports, see footnote 1.

Table 5-1 below presents a comparison of GSWC’s total request and Cal Advocates’ total recommended plant additions for specific projects in 2024, 2025, and 2026. Cal Advocates opposes several specific projects in 2024, 2025, and 2026 as presented in section III. DISCUSSION.

Table 5-1: Proposed Capital Budget – Santa Maria CSA

Santa Maria ($000)	2024	2025	2026	Total
Cal Advocates	494.0	72.7	1,269.6	1,836.3
GSWC	3,510.7	4,252.3	6,500.2	14,263.2
GSWC > Cal Advocates	3,016.7	4,179.6	5,230.6	12,426.9
Cal Advocates as % of GSWC	14%	2%	20%	13%

Table 5-2 presents GSWC's request of plant addition (capital) budget for specific projects in 2024, 2025, and 2026. Table 5-3 presents Cal Advocates' recommended plant addition (capital) budget for specific projects in 2024, 2025, and 2026.

Table 5-2: GSWC Capital Budget – Santa Maria CSA[82]

Budget Group	Description	2024 Proposed Budget	2025 Proposed Budget	2026 Proposed Budget
	Lake Marie			
51	Lake Marie Plant, Replace Booster Station	-	126,900	1,073,200
51	Lake Marie Systemwide SCADA Upgrade	390,300	-	-
	Total Water Supply	**390,300**	**126,900**	**1,073,200**
	Orcutt			
51	Mesa Verde Plant, Raze Site	-	-	205,500
	Total Water Supply	**-**	**-**	**205,500**
	Orcutt			
55	Mira Flores No. 1 Plant, Nitrate Blending Modifications Study	-	-	207,600
	Total Miscellaneous	**-**	**-**	**207,600**
	Orcutt			
51	Orcutt Hill Plant, Recoat Reservoir No. 2	-	-	370,200
51	Mira Flores Well No. 3, Destroy Well, Raze Site, and Pipeline	-	-	69,600
51	Orcutt Well Plant, Replace Well No. 1	-	-	359,200
	Total Water Supply	**-**	**-**	**799,000**
	Orcutt			
55	Orcutt System, 2025 Urban Water Management Plan	-	80,000	-
	Total Miscellaneous	**-**	**80,000**	**-**
	Sisquoc			
51	Sisquoc Systemwide SCADA Upgrade	585,300	-	-
	Total Water Supply	**585,300**	**-**	**-**
				-
	Tanglewood			
51	Willowood Plant, Destroy Well No. 1	-	-	41,300
51	Willowood Plant, Drill New Well	-	-	358,100
51	Tanglewood Systemwide SCADA Upgrade	585,300	-	-
	Total Water Supply	**585,300**	**-**	**399,400**
	Nipomo			
51	La Serena Plant, Recoat Reservoir No.1 & 2	237,500	2,008,600	-
	Total Water Supply	**237,500**	**2,008,600**	**-**
	Nipomo			
54	Nipomo System, Chlorine Analyzers	-	-	171,600
	Total Water Quality	**-**	**-**	**171,600**
	Nipomo			
51	Nipomo Systemwide SCADA Upgrade	1,365,900	-	-
	Total Water Supply	**1,365,900**	**-**	**-**
	Cypress Ridge			
51	Cypress Ridge Plant, Replace Reservoir No. 1	-	243,200	2,038,900
51	Rural Well No. 1, Destroy Well	-	-	322,900
51	Rural Well No. 5, Equip Well	212,100	1,793,600	-
51	Cypress Ridge Well No. 8, Destroy Well	-	-	360,400
51	El Campo Rd, Replace NC Valve with PRV	134,300	-	-
	Total Water Supply	**346,400**	**2,036,800**	**2,722,200**
	Cypress Ridge			
55	Cypress Ridge System, Nitrate Treatment Feasibility Study	-	-	282,600
	Total Miscellaneous	**-**	**-**	**282,600**
	Cypress Ridge			
51	Cypress Ridge System, Fire Hardening Improvements	-	-	639,100
	Total Water Supply	**-**	**-**	**639,100**
	Grand Total	**3,510,700**	**4,252,300**	**6,500,200**

[82] GSWC Capital Projects Lists Workpapers, (RO Model)

Table 5-3: Cal Advocates Capital Budget – Santa Maria CSA

Budget Group	Description		2024 Proposed Budget	2025 Proposed Budget	2026 Proposed Budget
	Lake Marie				
51	Lake Marie Plant, Replace Booster Station		-	-	-
51	Lake Marie Systemwide SCADA Upgrade		55,000	-	-
		Total Water Supply	**55,000**	**-**	**-**
	Orcutt				
51	Mesa Verde Plant, Raze Site		-	-	125,000
		Total Water Supply	**-**	**-**	**125,000**
	Orcutt				
55	Mira Flores No. 1 Plant, Nitrate Blending Modifications Study		-	-	-
		Total Miscellaneous	**-**	**-**	**-**
	Orcutt				
51	Orcutt Hill Plant, Recoat Reservoir No. 2		-	-	238,900
51	Mira Flores Well No. 3, Destroy Well, Raze Site, and Pipeline		-	-	-
51	Orcutt Well Plant, Replace Well No. 1		-	-	-
		Total Water Supply	**-**	**-**	**238,900**
	Orcutt				
55	Orcutt System, 2025 Urban Water Management Plan		-	72,700	-
		Total Miscellaneous	**-**	**72,700**	**-**
	Sisquoc				
51	Sisquoc Systemwide SCADA Upgrade		82,500	-	-
		Total Water Supply	**82,500**	**-**	**-**
					-
	Tanglewood				
51	Willowood Plant, Destroy Well No. 1		-	-	-
51	Willowood Plant, Drill New Well		-	-	-
51	Tanglewood Systemwide SCADA Upgrade		82,500	-	-
		Total Water Supply	**82,500**	**-**	**-**
	Nipomo				
51	La Serena Plant, Recoat Reservoir No.1 & 2		-	-	-
		Total Water Supply	**-**	**-**	**-**
	Nipomo				
54	Nipomo System, Chlorine Analyzers		-	-	104,100
		Total Water Quality	**-**	**-**	**104,100**
	Nipomo				
51	Nipomo Systemwide SCADA Upgrade		192,500	-	-
		Total Water Supply	**192,500**	**-**	**-**
	Cypress Ridge				
51	Cypress Ridge Plant, Replace Reservoir No. 1		-	-	-
51	Rural Well No. 1, Destroy Well		-	-	195,700
51	Rural Well No. 5, Equip Well		-	-	-
51	Cypress Ridge Well No. 8, Destroy Well		-	-	218,500
51	El Campo Rd, Replace NC Valve with PRV		81,500	-	-
		Total Water Supply	**81,500**	**-**	**414,200**
	Cypress Ridge				
55	Cypress Ridge System, Nitrate Treatment Feasibility Study		-	-	-
		Total Miscellaneous	**-**	**-**	**-**
	Cypress Ridge				
51	Cypress Ridge System, Fire Hardening Improvements		-	-	387,400
		Total Water Supply	**-**	**-**	**387,400**
		Grand Total	**494,000**	**72,700**	**1,269,600**

III. DISCUSSION

A. Lake Marie – Reconstruct Booster Pump Station

The Commission should deny GSWC's request to reconstruct the booster pump station at the Lake Maria plant for a total of $1,200,100 in 2025 and 2026[83] because GSWC's request to reconstruct the booster pump station is not needed.

The Lake Marie plant has one concrete reservoir, one well, and a booster pump station. The pump station has two electric booster pumps (boosters A & B) and one diesel booster pump (booster C). The two electric pumps are located separately from the diesel pump (about 30 feet away). In the last GRC, the Commission authorized $553,900 for the installation of a new electric pump to replace the outdated diesel booster pump (booster C) and a backup permanent generator.[84] GSWC has almost completed the generator installation but not the replacement of booster C.[85]

In this GRC, GSWC claims that the company was unable to replace booster C because the spare pump can[86] was plugged with concrete.[87] GSWC is now requesting to reconstruct the booster pump station due to its own failure to properly inspect the diesel

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[83] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, p.72. Lake Marie Plant, Replace Booster Station: Design & Permit for $126,900 in 2025, and Construction for $1,073,200 in 2026, a total budget of $1,200,100. The project includes to install three new booster cans, relocate the two existing boosters to the new cans and install one new booster pump.

[84] GSWC's Response to DR SN2-010, question 7: GSWC 2020 GRC -GSWC's Hanford and Insco Operating District Capital Testimony APP, pp. 91-92, and Lake Marie System Water Master Plan, December 2019, page 8-2 as submitted in A.20-07-012. Attachment 5-1, pp. A-200 to A-202.

[85] GSWC's Response to DR SN2-011, question 4.(i) to (iii). Attachment 5-2, pp. A-209 to A-210.

[86] A pump container (can) for the booster pump C replacement, which is located between booster pumps A and B.

[87] GSWC's Response to DR SN2-010, question 4.c: GSWC states, "The concrete plug was not visible upon standard inspection of the spare pump can. A concrete plug six feet below grade was an unforeseen circumstance." Attachment 5-1, p. A-182. And GSWC's Response to DR SN2-011, 2.ii.ii. GSWC states "The spare pump can was visually inspected by GSWC and the contractor and water was visible in the can. It was assumed the water level was at the HGL of the reservoir." Attachment 5-2, p. A-207.

pump replacement in the prior GRC.[88] GSWC admitted that the company did not thoroughly evaluate whether installing the replacement pump between boosters A & B was viable.[89] Instead of performing its due diligence and thoroughly checking the proposed location, GSWC assumed there would not be any issues to install booster pump C at the location between boosters A & B.[90] Should the Commission approve this project, GSWC's failure to properly inspect the feasibility of the booster pump C replacement would result in a significant cost increase to ratepayers. Replacing the booster station will cost ratepayers an additional $1,200,100. GSWC should not burden the ratepayers with unnecessary costs due to GSWC's inspection failures.

In addition, GSWC does not need to reconstruct a new booster station. GSWC can simply replace the diesel pump at its existing location. GSWC does not consider this cost-effective approach as a viable option. GSWC states that the diesel pump (booster C) must remain in service to supply water during high demand. GSWC also claimed that taking it offline during construction would interrupt the water service.[91] GSWC's

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[88] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, p.73 lines: 5-15 and conclusion lines: 18-21 states, "GSWC should reconstruct the booster pump station at Lake Marie Plant Site. This is due to the discovery during the design phase that the original project in the 2020 GRC to replace the diesel-powered Booster C with an electric booster in the spare pump can was not feasible under existing conditions."

[89] GSWC's Response to DR SN2-010, question 4.c: GSWC states, "The concrete plug was not visible upon standard inspection of the spare pump can. A concrete plug six feet below grade was an unforeseen circumstance." Attachment 5-1, p. A-182. And GSWC's Response to DR SN2-011, 2.ii.ii. GSWC states "The spare pump can was visually inspected by GSWC and the contractor and water was visible in the can. It was assumed the water level was at the HGL of the reservoir." Attachment 5-2, p. A-207.

[90] GSWC's Response to DR SN2-010, question 4.c: GSWC states, "The concrete plug was not visible upon standard inspection of the spare pump can. A concrete plug six feet below grade was an unforeseen circumstance." Attachment 5-1, p. A-182. And GSWC's Response to DR SN2-011, 2.ii.ii. GSWC states "The spare pump can was visually inspected by GSWC and the contractor and water was visible in the can. It was assumed the water level was at the HGL of the reservoir." Attachment 5-2, p. A-207.

[91] GSWC's Response to DR SN2-011, question 2.i.vi. GSWC states, "Installing a replacement electric booster in the same location as the current diesel powered booster pump identified as Pump C is not a viable option. The existing Pump C must remain in service to supply the system during periods of high demands. Constructing a new Pump C in a different location on the plant site would minimize the disruption to water supply during construction. The existing Pump C can continue to be utilized during

explanation does not make sense. The diesel pump runs infrequently. Its usage meter shows 422 hours usage since its installation.[92] The diesel pump C age is 22 years[93] and has an average annual usage of 19.18 hours (422 hours /22 year = 19.18 hours per year). Because this pump have averaged less than one full day of operation over twenty-two years of service, GSWC should be able to replace the diesel pump without interrupting the service with just a modicum of planning. It could perform the replacement during periods of low demand, such as wintertime. If necessary, GSWC can also rent a portable booster pump during the installation of the new booster pump.[94] Under normal operation, both (boosters A & B) are sufficient to meet the system demands and fire flow capacity needs. The diesel pump's (booster C) primary purpose is to provide additional fire flow reliability in case one of the two electric pumps is taken offline for maintenance.[95] Therefore, there is no need to reconstruct the entire booster pump station. GSWC's entire proposal appears to construct a redundancy on an existing redundancy.

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construction of the new Pump C at a different location, with only a short period of downtime to connect the pump to the reservoir." Attachment 5-2, p. A-207.

[92] GSWC's Response to DR SN2-011, question 1.e. Attachment 5-2, p. A-205.

[93] GSWC's Response to DR SN2-010, question 1, see GSWC's table shows Booster C installed year of 2001. Attachment 5-1, pp. A-180 to A-181. And GSWC's Response to DR SN2-011, question 1.a. Attachment 5-2, p. A-205.

[94] GSWC's Response to DR SN2-011, question 2.i.iv and 2.i.v renting portable booster pump for a short-term can be a solution. Attachment 5-2, p.A-207.

[95] GSWC's Response to DR SN2-010, question 5, attachment 'SN2-010 Q5 Communication'. Email from James Fields of GSWC to Chris Malejan of WSC-Inc., dated Jan 17, 2023. GSWC states, "One of the options is to let go of the 3rd booster, however the purpose of the new booster was to give the system more reliability on fire flow in order to perform pump maintenance at the site. Both A & B boosters alternate run times during the day for system demand, and both are needed to run for a fire flow. When one of the boosters are taken offline, the Lake Marie system does not have fire flow capacity until the pump is back online." (the 3rd booster is the booster pump C). Attachment 5-1, p. A-196.

Email from Chris Malejan to James Field, (dated Jan 16, 2023) questioning whether GSWC has considered to abandon the diesel booster pump. Chris Malejan stated, "Has GS considered just abandoning the installation of the third pump? What operational benefits does GS gain with the addition of the third pump (perhaps other than redundancy)?" Attachment 5-1, p. A-197.

GSWC was already authorized and funded the installation of an electric booster pump to replace the booster C in the last GRC. Due to GSWC's negligence, the project could not be completed. The Commission should reject GSWC's request for the reconstruction of Lake Marie booster station for $1,200,100 in 2025 and 2026 because the project is unnecessary.

B. Orcutt – Nitrate Blending Modifications Study.

The Commission should deny GSWC's request of $207,600 in 2026 to perform a Nitrate Blending Modifications study at Mira Flores Well No.1 and Woodmere Well No. 1 & 2 in the Orcutt system[96] because the result of this study is unknown and may not result in a useful project. Granting GSWC's request for this project would unreasonably shift the risk of the study from GSWC to ratepayers. Further, the study by itself does not provide tangible benefits for the ratepayers in this GRC cycle.

A project must be used and useful for the ratepayers in order to be included in rate base earning GSWC profit. Since the results of the study are unknown and the study provides no benefits for the ratepayers in this GRC cycle, the ratepayers should not fund the project in this GRC cycle. For this reason, the Commission should deny GSWC's request for ratepayer funding of the study for $207,600 in 2026 as this project is not used and useful in this GRC cycle. If GSWC proceeds with a Nitrate Blending Modifications Study that results in a prudent and reasonable project that provides beneficial service to ratepayers, it may proceed to request recovery of project costs (including the cost of a Nitrate Blending Modifications Study) in a subsequent GRC.

C. Orcutt – Destroy Mira Flores Well No.3, Raze Site –Phase 1

The Commission should deny GSWC's request of $69,000 in 2026 for the Phase 1 project to destroy Mira Flores Well No.3 at Mira Flores Plant including raze facilities'

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[96] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, pp. 75-76.

site, and improvement to reconnect pipelines[97] because the Phase 1 (design and permit) project itself does not provide any tangible benefits for ratepayers. A project needs to be used and useful for the ratepayers. As there are no benefits for the ratepayers from merely design and permitting costs during this GRC cycle, the ratepayers should not fund Phase 1 of the project in this GRC cycle.

GSWC splits the project into two separate phases. Phase 1 is for design and permit in the current GRC, and Phase 2 is to perform the well demolition, raze site, and improvement to reconnect pipelines in the future GRC.[98] GSWC ratepayers will not receive tangible benefits for completing Phase 1 of the project in this GRC cycle. The Commission should deny GSWC's request for $69,000 (in 2026) to complete Phase 1 of the project. If GSWC proceeds with design and permitting that results in a prudent and reasonable project that provides beneficial service to ratepayers, it may proceed to request recovery of project costs (including design and permitting) in a subsequent GRC.

D. Orcutt – Orcutt Plant, Replace Well No. 1 – Phase 1

The Commission should deny GSWC's request to replace Orcutt Well No.1 for $359,200 in 2026[99] because the Phase 1 (design and permit) project does not provide any tangible benefits for ratepayers. A project needs to be used and useful for the ratepayers. As there are no benefits for the ratepayers from merely design and permitting costs during this GRC cycle, the ratepayers should not fund Phase 1 of the project in this GRC cycle.

GSWC splits the project into two separate phases. Phase 1 is for design and permit in the current GRC and Phase 2 is for drilling and equipping the well and tie it into

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[97] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, pp. 77-79.

[98] GSWC's Response to DR SN2-008, question 1. GSWC states, "GSWC is proposing design costs in 2026." Attachment 5-3, p. A-212.

[99] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, pp. 79-80.

the distribution system in the future GRC.[100] GSWC ratepayers will not receive tangible benefits for completing Phase 1 of the project in this GRC cycle. The Commission should deny GSWC's request for $359,200 (in 2026) to complete Phase 1 of the project. If GSWC proceeds with design and permitting that results in a prudent and reasonable project that provides beneficial service to ratepayers, it may proceed to request recovery of project costs (including design and permitting) in a subsequent GRC.

E. Tanglewood – Willowood Plant, Destroy Well No. 1 – Phase 1

The Commission should deny GSWC's request to destroy Willowood Well No.1 at Willowood Plant, including disposing of facilities associated with the well for $41,300 in 2026,[101] because the Phase 1 (design and permit) project does not provide any tangible benefits for ratepayers. A project needs to be used and useful for the ratepayers. As there are no benefits for the ratepayers from merely design and permitting costs during this GRC cycle, the ratepayers should not fund Phase 1 of the project in this GRC cycle.

GSWC splits the project into two separate phases. Phase 1 is for design and permit in the current GRC and Phase 2 is for well demolition and removal/disposal of facilities associated with the well in the future GRC.[102] GSWC ratepayers will not receive tangible benefits for completing Phase 1 of the project in this GRC cycle. The Commission should deny GSWC's request for $41,300 (in 2026) in rates to complete Phase 1 of the project. If GSWC proceeds with design and permitting that results in a prudent and reasonable project that provides beneficial service to ratepayers, it may proceed to request recovery of project costs (including design and permitting) in a subsequent GRC.

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[100] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, p. 79, lines 9-11.

[101] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, pp. 81-82.

[102] GSWC's Response to DR SN2-008, question 1. Attachment 5-3, p. A-212.

F. Tanglewood – Willowood Plant, Drill New Well No. 1 – Phase 1

The Commission should deny GSWC's request to drill a new well in Willowood Plant for $358,100 in 2026[103] because the Phase 1 (design and permit) project does not provide any tangible benefits for ratepayers. The project will provide ratepayer benefit when it is completed and becomes used and useful. As there are no benefits for the ratepayers from merely design and permitting costs during this GRC cycle, the ratepayers should not fund Phase 1 of the project in this GRC.

GSWC splits the project into two separate phases. Phase 1 is for design and permit in the current GRC and Phase 2 is to drill and equip the well and tie it into the distribution system in the next GRC.[104] GSWC ratepayers will not receive tangible benefits for completing Phase 1 of the project in this GRC cycle. The Commission should deny GSWC's request for $358,100 (in 2026) in rates to complete Phase 1 of the project. If GSWC proceeds with design and permitting that results in a prudent and reasonable project that provides beneficial service to ratepayers, it may proceed to request recovery of project costs (including design and permitting) in a subsequent GRC.

G. Nipomo – La Serena Reservoir No.1 and Reservoir No.2

The Commission should deny GSWC's request to recoat the La Serena Reservoir No.1 (0.5 MG) and La Serena Reservoir No. 2 (0.5 MG) for a total of $2,446,100 in 2024 and 2025[105] because the current problems with the reservoirs are the result of GSWC's failure to maintain these reservoirs. The Commission should deny GSWC's request because it unreasonably burdens ratepayers by forcing them to pay to fix a problem GSWC caused by mismanaging its assets.

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[103] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, pp. 82-83.

[104] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, pp. 82-83

[105] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, p.84, La Serena Plant, Recoat Reservoir No.1 &2: Design & Permit for $237,500 in 2025 and Construction for $2,008,600 in 2026, a total budget of $2,446,100.

La Serena Reservoir No.1 and No.2 are located at the La Serena plant. The 2022 Corrosion Engineering evaluation reports identify the ages of La Serena Reservoir No.1 and No.2 as 39 years and 16 years old, respectively.[106] The reports indicate that both reservoirs' interior coating systems are in poor condition and have severe corrosion.[107] Reservoir No.2's coating system is only 16 years old, and had a 20- to 25-year life expectancy.[108] During discovery, Cal Advocates requested maintenance records for the reservoirs to understand why Reservoir No.2 needs a new recoating despite its relatively young age. However, GSWC stated that no tank maintenance records are available for Reservoir No.1 and No.2.[109] Cal Advocates further asked why the tank maintenance records are unavailable. GSWC states that the current staff has been unable to locate any maintenance records for the La Serena Reservoirs.[110] In addition, GSWC's consultant identified that cathodic protection system is not installed in the La Serena Reservoir No.2. GSWC explains that the company does not know why it was not installed during construction.[111] The absence of a cathodic protection system likely contributed to the short lifespan of the coating. Ratepayers should not be held responsible for GSWC's failure to properly design and maintain the reservoir.

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[106] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, pp 84-85, Attachment SM05, the Harper and Associates Engineering (HAE), Inc., Corrosion Engineering Evaluation report (August 2022) for La Serena Reservoir No.1. And Attachment SM06, the HAE, Inc., Corrosion Engineering Evaluation report (August 2022) for La Serena Reservoir No.2.

[107] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, Attachment SM05, see p.12 of 49, Section VI. Recommendations A.2.b Interior Surfaces (a), (b). And Attachment SM06, see p.11 of 49, Section VI. Recommendations A.2.b Interior Surfaces (a), (b)

[108] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, Attachment SM06, see p.11 of 49, Section IV. Conclusions A.2.a. Underside of Roof and Structural Members (1) it states, "…The coating system is only 16 years old and should have a 20 to 25 year life expectancy."

[109] GSWC's response to DR SN2-001, question 2.b and 2.c. Attachment 1-1, p. A-5.

[110] GSWC's response to DR SN2-012, question 18. Attachment 1-7, p. A-94.

[111] GSWC's response to DR SN2-001, question 2.a. Attachment 1-1, p. A-5.

In addition, GSWC's lack of maintenance conflicts with standard industry practice. Keeping good maintenance is crucial in managing and extending the lifespan of its assets. It also allows GSWC to schedule timely preventive maintenance tasks, avoiding costly repairs and downtime. Without the maintenance records, Cal Advocates can only assume that GSWC has not carried out the necessary maintenance on the reservoirs over the years, which resulted in their current poor condition. GSWC's lack of maintenance has resulted in severe corrosion to the reservoirs that requires additional repairs and/or replacement as stated on the inspection report:

> "Due to the areas of severe corrosion, it is expected metal loss will occur when the rafters are abrasive blast cleaned. However, the degree of metal loss cannot be determined until the rafters are abrasive blast cleaned. Therefore, it is recommended an additive bid item be included for an inspection blast to determine if repairs and/or replacement of rafters is necessary. An additive bid item should also be included for repairs and/or replacement of the rafters if necessary." [112]

The American Water Works Association (AWWA) and GSWC's TMP guidelines recommend that reservoirs should be inspected once every 3 to 5 years.[113] GSWC did not follow this recommendation. In fact, Reservoirs No.1 and 2 have not been inspected since they were placed into service.

Finally, the TMP guidelines recommend that GSWC should conduct the Structural and Seismic evaluation before recoating the reservoir. Both Reservoir No.1 and No.2 have severe corrosion and GSWC, according to its own standards,[114] should perform

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[112] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, Attachments: SM05 Section VI. Recommendations A.2.b Interior Surfaces, and SM06 Section VI. Recommendations A.2.b Interior Surfaces.

[113] GSWC's response to DR SN2-001, question 1.c: GSWC states, "AWWA Manual M42 states that each "tank should be inspected at least once every 3 to 5 years" (p.108). Attachment 1-1, p. A-4.

[114] GSWC's response to DR SN2-004, questions 10.a. and 10.b: GSWC states, "No", also GSWC states, "*Structural and Seismic inspection is not typically needed as frequently as corrosion inspection.*

structural and seismic evaluations to ensure the integrity of the Reservoir No.1 and No.2 are sound. Recoating reservoirs that have severe corrosion without verifying their seismic/structural conditions can be an imprudent investment. It risks wasting ratepayers' funds on a project that might not be used and useful due to its condition.

GSWC has not followed the proper maintenance requirements on the La Serena No.1 and No.2 reservoirs. GSWC has no maintenance records to demonstrate that it has properly maintained the reservoirs since they were placed into service. GSWC's negligence contributed to the poor condition of both reservoirs. The Commission should deny GSWC's request to include a total of $2,446,100 in rates in 2024 and 2025 to recoat the two reservoirs.

H. Cypress Ridge – Replace Cypress Ridge Reservoir No.1

The Commission should deny GSWC's request of a total of $2,282,100 in 2025 and 2026 to replace Reservoir No.1 in Cypress Ridge Plant[115] because there is no need for additional storage capacity in the Cypress Ridge system.

The Cypress Ridge plant is in the Cypress Ridge Zone. The plant has two reservoirs: Reservoir No.1 (North) and Reservoir No.2 (South). Each reservoir has a capacity of 0.275 MG. The total storage capacity is 2 X 0.275MG = 0.550 MG. Even without the capacity from Reservoir No.1, the Cypress Ridge Zone by itself has an excess storage capacity of 94,000 gallons, while the Cypress Ridge systemwide has an excess storage capacity of 312,000 gallons.[116]

Using data from GSWC's Water Master Plan as shown in the Figure 5.1, Cal Advocates calculates the excess storage as follows:

However, if severe corrosion is noted, that will trigger GSWC to pursue an additional evaluation prior to performing the recoating work." Attachment 1-1, pp. A-74 to A-75.

[115] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, pp.87 -88 Cypress Ridge Plant, Replace Reservoir No.1: Design & Permit for $243,200 in 2025 and Construction for $2,038,900 in 2026, a total budget of $2,282,100.

[116] GSWC's Cypress Ridge Water System Master Plan (December 2022), p. 5-11, See Table 5-13. System Storage Analysis indicates all zones and systemwide have adequate storage capacities.

Excess Storage = Available Storage – Recommended Storage

- For Cypress Ridge Zone, without storage capacity from Reservoir No.1, Excess Storage equal to Available Storage from Reservoir No.2 minus Recommended Storage = 0.275 MG – 0.181MG = 0.094 MG (94,000 gallons).
- For the Cypress Ridge systemwide, without storage capacity from Reservoir No.1: Excess Storage = Systemwide Available Storage (excludes Reservoir No.1 capacity) minus systemwide recommended storage = (1.182 MG – 0.275 MG) – 0.595 MG = 0.312 MG (312,000 gallons).

Figure 5.1: Cypress Ridge Systemwide - Existing System Storage Analysis[117]

	Zones				
	Main Zone	Falcon Crest Regulator Zone	Cypress Ridge Zone	Indian Hills Zone	Total
Cypress Ridge Tank 1 (North)	-	-	0.275	-	0.275
Cypress Ridge Tank 2 (South)	-	-	0.275	-	0.275
El Campo Tank 1 (Northeast)	0.188	0.012	-	-	0.200
El Campo Tank 2 (Southwest)	0.200	0.020	-	-	0.220
Falcon Crest Tank	0.184	-	-	0.028	0.212
Available Storage	0.572	0.032	0.550	0.028	1.182
Recommended Storage*	0.353	0.032	0.181	0.028	0.595
Available Minus Recommended	0.219	0.000	0.369	0.000	0.587
Adequate Storage	**YES**	**YES**	**YES**	**YES**	**YES**

Since the Cypress Ridge zone and Cypress Ridge Systemwide both have excess storage capacity without replacing Reservoir No.1, the Commission should reject GSWC's request to replace Reservoir No.1 for $2,282,100 in 2025 and 2026.

[117] GSWC's Cypress Ridge Water System Master Plan (December 2022), p. 5-11, Table 5-13

I. Cypress Ridge – Equip Rural Well No.5 in El Campo plant.

The Commission should deny GSWC's request for a total of $2,005,700 in 2024 and 2025 to equip Rural Well No.5 in Cypress Ridge system[118] because the system already has sufficient supply redundancy to meet customers' demands. GSWC's request to equip Rural Well No.5 is unnecessary.

The Cypress Ridge system has four zones: Main Zone, Cypress Ridge Zone, Indian Hills Zone, and Falcon Cress Zone. The Rural Well No.5 is located in the El Campo plant in the Main Zone. The well is currently inactive and has been out of service since GSWC acquired the Cypress Ridge system in 2015. GSWC requests to reactivate this well based on an investigation that concludes that the Rural Well No.5 is suitable to be utilized as a water supply well.[119] The well is estimated to have a capacity of 35 gpm.[120]

The supply from this well is not needed. The December 2022 Cypress Ridges System Water Master Plan (MP)'s analysis for the Cypress Ridge systemwide shows that the existing system supply and capacity are sufficient to meet the demands.[121] GSWC evaluates each demand scenario: average day demand (ADD), maximum day demand (MDD), peak hour demand (PHD), and maximum day demand plus fire flow (MDD+FF) for Cypress Ridge systemwide. Similarly, the analysis for Main Zone shows the existing supply is also sufficient to meet its demand.[122] To better illustrate how much redundancy

[118] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, p.90 Rural Well No. 5, Equip Well: Design & Permit for $212,100 in 2025 and Construction for $1,793,600 in 2026, a total budget of $2,005,700.

[119] Gisler, Insco - Vol 5 R1 Attachments SM05 to SV02, attachment SM10 – Cypress Ridge Well Reactivation Investigation, 2023 (dated May 15, 2023), p.1 of 2.

[120] GSWC's Response to DR SN2-009, question 3.c. Attachment 5-4, p. A-225.

[121] GSWC's Cypress Ridge Water System Master Plan (December 2022), pp. 5-9 to 5-10 Systemwide Capacity Analysis indicates the system meets the demands, also see Table 5-11.

[122] GSWC's Cypress Ridge Water System Master Plan (December 2022), pp. 5-9 to 5-10 Main Zone Capacity Analysis indicates the system meets the demands, also see Table 5-7.

GSWC already has in the Main Zone and in the Cypress Ridge systemwide, Cal Advocates calculates excess supply capacity for each demand scenario. The Figure 5-2 below shows the results of Cal Advocates' calculation for excess supply capacity for each demand scenario in the Main Zone.[123] The excess supply for each demand scenario indicates the Main Zone has sufficient system redundancy of 670%, 359%, 206% and 2% for demand scenario ADD, MDD, PHD, and MDD+FF, respectively. Therefore, GSWC's request to increase redundancy by adding supply capacity from Rural Well No.5 for 35 gpm is unnecessary.

Figure 5-2: Excess Supply Capacity Analysis in Main Zone (by Cal Advocates)

	ADD	MDD	PHD	MDD+FF
	(gpm)			
Supply from Wells + Boosters (440 gpm +1,517 gpm)	1,957	1,957	1,957	1,957
Demands (Supply needed for demands)	254	426	639	1,926
Excess supply (gpm)	1,703	1,531	1,318	31
Excess supply (%)	670%	359%	206%	2%

Cal Advocates further evaluates and calculates the Cypress Ridge systemwide redundancy by applying the same methodology and using the supply capacity analysis information for the Cypress Ridge system from GSWC's Master Plan.[124] As shown in Figure 5-3 below, the Cypress Ridge system has excess supply of 1,046%, 585%, 356% and 94% for each demand scenario of ADD, MDD, PHD and MDD+FF, respectively.

[123] Cal Advocates' calculations for excess supply capacity for each demand scenario in Main Zone and the Cypress Ridge systemwide. Attachment 5-7, p. A-235.

[124] Cal Advocates' calculations for excess supply capacity for each demand scenario in Main Zone and the Cypress Ridge systemwide. Attachment 5-7, pp. A-236 to A-237.

Figure 5-3: Excess Supply Capacity Analysis in Cypress Ridge systemwide (by Cal Advocates)

	ADD	MDD	PHD	MDD+FF
	(gpm)			
Supply from Wells + Boosters (440 gpm +3,607 gpm)	4,047	4,047	4,047	4,047
Demands (Supply needed for demands)	353	591	887	2,091
Excess supply (gpm)	3,694	3,456	3,160	1,956
Excess supply (%)	1046%	585%	356%	94%

As discussed above, Cal Advocates' calculations for the Cypress Ridge systemwide illustrate that the system has more than enough redundancy. The other three zones: Falcon Cress, Cypress Ridge, and Indian Hill zones will not be impacted by the supply from the Rural Well No.5 because this well is in the El Campo plant and if this well is active, the supply capacity from El Campo wells is limited by the boosters in the El Campo plant.[125] The booster capacity remains at 1,517 gpm. Even if the well capacity were to increase by 35 gpm, it would have no impact on the system supply since the system will still be limited by the boosters.

As discussed above, the Cypress Ridge systemwide and the Main Zone have sufficient supply redundancy for GSWC customers in the system. There is more than enough capacity without the supply from Rural Well No.5. The Commission should reject GSWC's request to equip Rural Well No.5 for a total of $2,005,700 in 2025 and 2026.

[125] GSWC's Cypress Ridge Water System Master Plan (December 2022), p. 5-7 Table 5-7 Existing System Supply and Capacity Analysis for Main Zone, shows the booster capacity of 1,517 gpm. Also see the explanation (under Table 5-7) indicates the supply capacity from El Campo wells is limited by the booster's capacity of the El Campo Plant.

J. Cypress Ridge – Nitrate Treatment Feasibility Study.

The Commission should deny GSWC's request of $282,600 in 2026 to perform a Nitrate Treatment Feasibility study to determine the viability of implementing nitrate treatment for Rural Water Wells No. 8 & 9 and Fowler Well No. 3 in the Cypress Ridge system.[126] This study provides no benefits for the ratepayers in this GRC cycle because the result of the study is unknown until it is completed. GSWC's request to earn a return on the study would place the entire risk of the study onto ratepayers as the study may or may not result in an actual project. Ratepayers should only have to pay for used and useful projects that provide them with tangible benefits.

GSWC should request the cost of the study in a future GRC when the result of the study is determined, and it leads to a useful project for the ratepayers. For this GRC, the Commission should deny GSWC's request to perform the Nitrate Treatment Feasibility study for $282,600 in 2026.

K. SCADA Upgrades (Santa Maria CSA)

The Commission should reduce GSWC's request of $2,926,800 to $412,500[127] in 2024 for SCADA upgrades in the Lake Marie, Sisquoc, Tanglewood, and Nipomo systems[128] (Santa Maria CSA) because GSWC has not accounted for any cost savings that usually result from such upgrades and benefits the ratepayers. SCADA system is a distributed computerized system primarily used to remotely control and monitor the condition of field-based assets from a central location. Field-based assets include wells,

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[126] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, pp. 75-76.

[127] The SCADA upgrade budget of $412,500 in 2024 includes a $346,561 of 5-year average SCADA upgrades cost in 2022, plus a $65,939 of overhead and escalation to 2024 cost. See Cal Advocates calculation of 5 years SCADA budget. Attachment 5-6, p. 5-56, and GSWC 's RO Model workbook SEC-51_RB_FDR Capital Budget Project List - DO NOT SORT! Sheet, lines: 64,75,79, and 83, column AK for a total of $412,500 (in ROM provided by Cal Advocates)

[128] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, pp. 72, 81, 83, and 87.

pump stations, valves, treatment plants, and reservoirs.[129] A SCADA system provide potential benefits to increase labor efficiency therefore it could provide cost savings.[130]

As a support for the requested upgrades and budgets, GSWC states potential benefits such as lower operation and maintenance cost that lead to cost savings for the ratepayers.[131] However, in discovery, GSWC does not reflect any cost savings in its expenses.[132]

In the absence of any quantitative savings associated with GSCW's huge SCADA upgrades, Cal Advocates used a more reasonable forecast of $346,561[133] for the SCADA upgrades, which is based on the 5-year (2018 to 2022) average of SCADA installation historical expenditure in Santa Maria CSA. Adding a total cost of overhead and escalation of $65,939, increased the total SCADA budget to $412,500 in 2024. Therefore, the Commission should reduce GSWC's request for SCADA upgrades in the Santa Maria CSA from $2,926,800 to $412,500 in 2024.

IV. CONCLUSION

The Commission should make the following adjustments to GSWC's request for the Santa Maria CSA budgets:

1. Reject GSWC's request of a total of $1,200,100 in 2025 and 2026 to reconstruct the Lake Marie booster station because it is not needed.

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[129] https://www.uky.edu/WDST/SCADA.html

[130] https://sensorex.com/scada-systems-applications-water-treatment-plants/
See "Reducing Water Costs for Consumers."

[131] Jeung and Kubiak Field Technology Testimony - Vol 1 of 2 – APP P. 70 lines 11-24.

[132] GSWC's Response to DR SN2-017, question 4. GSWC states, "…GSWC cannot quantify potential cost savings at this time." Attachment 5-5, p. 5-52.

[133] GSWC's Response to DR SN2-017, question 1, and see Cal Advocates calculation of 5 years average SCADA budget (2022) for Santa Maria CSA. Attachment 5-6, p. 5-56.

2. Reject GSWC’s request of 207,600 in 2026 to perform Nitrate Blending Modifications study at Mira Flores No.1 Plant because it does not provide ratepayer benefit in this GRC.
3. Reject GSWC’s request of $69,000 in 2026 to destroy Mira Flores Well No.3 at Mira Flores Plant including disposing facilities associated with the well (Phase 1) because it does not provide ratepayer benefit in this GRC cycle.
4. Reject GSWC’s request of $359,200 in 2026 to replace Orcutt Well No.1 (Phase 1) because it does not provide ratepayer benefit in this GRC cycle.
5. Reject GSWC’s request of $69,000 in 2026 to destroy Willowood Well No.1 at Willowood Plant including disposing facilities associated with the well (Phase 1) because it does not provide ratepayer benefit in this GRC cycle.
6. Reject GSWC’s request of $358,100 in 2026 to drill a new well in Willowood Plant (Phase 1) because it does not provide ratepayer benefit in this GRC cycle.
7. Reject GSWC’s request for a total of $2,446,100 in 2024 and 2025 to recoat the La Serena Reservoir No.1 and La Serena Reservoir No.2 because the current problems with the reservoirs are the result of GSWC’s mismanagement and failure to adequately maintain these reservoirs.
8. Reject GSWC’s request of a total of $2,282,100 in 2025 and 2026 to replace Reservoir No.1 in Cypress Ridge Plant because it is not needed.
9. Reject GSWC's request for a total of $2,005,700 in 2024 and 2025 to equip Rural Well No.5 in Cypress Ridge system because the supply capacity from this well is not needed.
10. Reject GSWC’s request of $282,600 in 2025 to perform Nitrate Treatment Feasibility study at Cypress Ridge system because it does not provide ratepayer benefit in this GRC cycle.
11. Reduce GSWC’s request of $2,926,800 in 2024 for SCADA upgrades in the Lake Marie, Sisquoc, Tanglewood and Nipomo systems (Santa Maria CSA) to 412,500 based on the 2018 to 2022 average of SCADA installation historical

expenditure in Santa Maria CSA because GSWC has not shown any cost savings that usually result from such upgrades that benefit the ratepayers.

12. Reject GSWC's request for various cost adders in 2024, 2025, and 2026 as discussed by Cal Advocates witnesses in separate reports, see footnote 1.

CHAPTER 6 : PLANT – SIMI VALLEY

INTRODUCTION

This chapter presents Cal Advocates' recommended adjustments to GSWC's capital budget requests for the Simi Valley CSA. Simi Valley CSA only has one system, which is the Simi Valley water system.

I. SUMMARY OF RECOMMENDATIONS

The Commission should make the following adjustments to GSWC's request for the Simi Valley's CSA budgets:

Cal Advocates does not recommend specific projects in 2024, 2025, and 2026 to be adjusted or rejected in the Simi Valley CSA. Cal Advocates and GSWC cost differences presented in Table 6-1 and Table 6-3 are adjustments due to GSWC's project cost adders as discussed by Cal Advocates witnesses in separate reports, see footnote 1.

Table 6-1 below presents a comparison of GSWC's total request and Cal Advocates' total recommended plant additions for specific projects in 2024 and 2025.

Table 6-1: Proposed Capital Budget – Simi Valley CSA[134]

Simi Valley ($000)	2024	2025	2026	Total
Cal Advocates	-	363.1	-	363.1
GSWC	49.2	505.7	-	554.9
GSWC > Cal Advocates	49.2	142.6	-	191.8
Cal Advocates as % of GSWC	0%	72%	-	65%

Table 6-2 presents GSWC's request of plant addition (capital) budget for specific projects in 2024, 2025, and 2026. Table 6-3 presents Cal Advocates' recommended plant addition (capital) budget for specific projects in 2024, 2025, and 2026.

Table 6-2: GSWC Capital Budget – Simi Valley CSA[135]

Budget Group	Description	2024 Proposed Budget	2025 Proposed Budget	2026 Proposed Budget
	Simi Valley			
51	Simi Valley System, Fire Hardening Improvements	-	10,900	-
51	Tapo Plant, Access Road	49,200	414,800	-
	Total Water Supply	**49,200**	**425,700**	-
	Simi Valley			
55	Simi Valley System, 2025 Urban Water Management Plan	-	80,000	-
	Total Miscellaneous	-	**80,000**	-
	Grand Total	**49,200**	**505,700**	-

134 GSWC does not request budgets for specific projects in 2026.

135 GSWC Capital Projects Lists Workpapers, (RO Model)

Table 6-3: Cal Advocates Capital Budget – Simi Valley CSA

Budget Group	Description			2024 Proposed Budget	2025 Proposed Budget	2026 Proposed Budget
	Simi Valley					
51		Simi Valley System, Fire Hardening Improvements		-	6,600	-
51		Tapo Plant, Access Road		-	283,800	-
			Total Water Supply	**-**	**290,400**	**-**
	Simi Valley					
55		Simi Valley System, 2025 Urban Water Management Plan		-	72,700	-
			Total Miscellaneous	**-**	**72,700**	**-**
			Grand Total	**-**	**363,100**	**-**

II. DISCUSSION

A. No Specific Project Recommendation

Cal Advocates provides no capital addition budget reduction or rejection for GSWS's request of specific projects. However, Cal Advocates opposes various cost adders as discussed by Cal Advocates witnesses in separate reports, see footnote 1.

III. CONCLUSION

The Commission should adopt GSWC's Simi Valley CSA budget as presented in Table 6-3 above, based on Cal Advocates removal of the cost adders as discussed by Cal Advocates witnesses in separate reports, see footnote 1.

ATTACHMENTS

Qualifications of Witness

QUALIFICATIONS AND PREPARED TESTIMONY
OF SUSANA NASSERIE

Q.1 Please state your name and address.

A.1 My name is Susana Nasserie, and my business address is 320 West 4th Street, Suite 500, Los Angeles, California 90013.

Q.2 By whom are you employed and what is your job title?

A.2 I am a Utilities Engineer in the Water Branch of the Public Advocates Office.

Q.3 Please describe your educational and professional experience.

A.3 I received a Master of Science Degree in Environmental Engineering from California State University of Fullerton in 2014. I have been employed by Public Advocates Office – Water Brance since September 2010 and participated in several GRCs. My previous professional experiences include Air Resources Engineer at the Air Resources Board where I worked from 2009 to 2010 in Mobile Source Control Division. From 2000 to 2009, I served as the Staff Programmer Analyst position at the Los Angeles Regional Water Quality Control Board.

Q.4 What is your area of responsibility in this proceeding?

A.4 I am responsible for the Specific Projects in Plant Additions of Region I.

Q.5 Does that complete your prepared testimony?

A.5 Yes, it does.

Attachment Chapter 1:
Arden Cordova CSA

Attachment 1-1

GSWC's response to DR SN2-001, including selected attachments:

1) Question 1 .c.
2) Question 1.d.

Golden State
Water Company
A Subsidiary of American States Water Company

July 25, 2023

Susana Nasserie, Public Advocates Office
CALIFORNIA PUBLIC UTILITIES COMMISSION
505 Van Ness Avenue
San Francisco, CA 94102

Subject: Data Request SN2-001 (A.23-XX-0XX) Reservoir Recoating
Extended Due Date: July 31, 2023

Dear Susana Nasserie,

In response to the above referenced data request number, we are pleased to submit the following responses:

Question 1:
Please refer to Golden State Testimony's Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – PA: *Coloma WTP, Recoat Reservoir No. 4* (Cordova). The Harper & Associates Engineering (HAE) identified that the tank age was 20 years in 2022 and the exterior surface is in overall good condition. Respond to the following questions:

GSWC proposes to recoat internal and exterior surfaces in 2025 ($397,900) and 2026 ($3,363,700) for a total of $3,761,600.

a. Considering the exterior surface is still in good condition, has GSWC considered an alternative to recoating the outer shell in the next GRC (2027) instead of recoating the interior and exterior tank as GSWC proposed?
    - If yes, provide the cost-benefit analysis and ratemaking impact for the two alternatives.
    - If not, provide reasons why this option was not considered.

b. The HAE identified the tank lifespan as 20-25 years. In 2022 the tank age was only 20 years. Has GSWC considered optimizing to fully utilize the tank's lifespan to recoat internal and exterior surfaces in 2027?
  - If yes, provide the cost-benefit analysis and ratemaking impact for the two alternatives.
  - If not, provide reasons why this option was not considered.

c. Does Golden State have a Tank Maintenance Program for Region I or each Region I RMAs?
  - If yes, please explain the program in detail for Region I or each Region I RMAs.
  - If not, provide reasons why the program is not available.
  - Provide supporting documentation for the Tank Maintenance Program.

d. Please provide the tank maintenance records for Reservoir No. 4.

Response 1:

a. No. Per the 2022 Harper & Associates seismic/structural/safety and corrosion inspection report, "…it has reached its useful lifespan… it is recommended to repaint the exterior surfaces when the interior remedial coating work is accomplished." (Section VI.A.1.a., page 11) Recoating the exterior surface while the tank is out of service for interior recoating will minimize impact to tank operations and allow for a single mobilization effort for the contractor.
b. No. The coating system's lifespan is a range of 20-25 years, and "corrosion related structural damage is occurring" in the interior (page 11). And, as stated above, it is recommended to repaint the exterior surfaces when the interior remedial coating work is accomplished.
c. Yes. GSWC Operations performs a weekly visual inspection. In addition GSWC has a Tank Management Program (TMP) that addresses water tanks, or reservoirs, that are used to provide storage for operational flexibility, fire protection, or emergency scenarios; tanks are also used as part of the water treatment process (clearwells and clarifiers) and plant operation (forebays). The principal objectives of the TMP are to help Golden State Water mitigate risk, bolster water service reliability through successfully maximizing the life cycle of our tank assets, and effectively plan and deliver tank projects. AWWA Manual M42 states that each "tank should be inspected at least once every 3 to 5 years" (p.108). This results in projects with more refined budgets and scopes of work; thus reducing potential change orders, changes in scope, and project cost overruns. Reducing these items allows for a more expedient and smooth delivery of capital projects. The tank reports contain professional recommendations, calculations, references to codes and standards, cost analyses, and more information that serve as substantial evidence for the need

to complete the project. Effective monitoring of Golden State Water's tanks is the best approach to prolong their life spans and minimize lifetime costs. AWWA Manual M42 states that a good comprehensive preventive maintenance program can extend the life of existing tanks. Tank improvements completed in a timely manner could minimize the need for larger and more expensive projects. A TMP will help Golden State Water more effectively monitor the condition of the water tanks, as well as assist in the development of tank improvement and replacement projects. The TMP Guidelines Document and the Tank Database, which was used in preparation for the GRC, are attached.

d. The Weekly Reservoir Inspection Reports for Reservoir No. 4, dated 01/23-06/23; Field Report, dated 2/19/15; Field Report, dated 4/28/21and are attached.

Question 2:
Please refer to Golden State Testimony's 'Gisler, Insco - Vol 5 Attachments SM05 to SV02 - PA,' La Serena Plant, Recoat Reservoir No.1 & 2 (Santa Maria, Nipomo). The HAE identified that La Serena tank no.1 and La Serena tank no.2 ages were 39 years and 16 years old respectively in 2022. Respond to the following questions:

GSWC proposes to recoat both tanks in 2024 ($237,500) and 2025 ($2,008,600) a total of $2,246,100.

a. The HAE identified that no cathodic protection system is currently installed in La Serena Tank no. 2. Please explain the reasons why cathodic protection is not installed in the tank.

b. Please provide the tank maintenance records for Reservoir No. 1.

c. Please provide the tank maintenance records for Reservoir No. 2.

Response 2:

a. It is unknown why cathodic protection was not installed at the time of tank construction in 2006.
b. No tank maintenance records are available for Reservoir No. 1.
c. No tank maintenance records are available for Reservoir No. 2.

END OF RESPONSE

Tank Management Program Guidelines Document

Golden State Water Company

August 2019

Table of Contents

1 Executive Summary

Water tanks are a critical component of Golden State Water Company's infrastructure and are necessary to safely, efficiently, and flawlessly deliver life-essential water service. Typically water tanks, or reservoirs, are used to provide storage for operational flexibility, fire protection, or emergency scenarios; however, tanks are also used as part of the water treatment process (clearwells and clarifiers) and plant operation (forebays). This program does not address pressurized vessels such as hydropneumatic tanks or pressure filters. Without question, the most common type of water tank owned by Golden State Water is an above-ground welded steel storage tank. In addition to above-ground welded steel tanks, Golden State Water owns above-ground bolted steel tanks, elevated tanks, buried and partially-buried concrete tanks with either Concrete Masonry Units (CMU) or cast-in-place concrete walls. Water tanks represent a large and essential portion of Golden State Water's assets and, therefore, necessitate a Tank Management Program (TMP).

The principal objectives of the TMP are to help Golden State Water mitigate risk, bolster water service reliability through successfully maximizing the life cycle of our tank assets, and effectively plan and deliver tank projects. Water tanks are some of Golden State Water's most valuable assets. If not properly maintained, the life cycle costs of tanks could escalate and potentially become liabilities. The TMP helps Golden State Water more effectively monitor our water tanks and assist in the development of tank improvement and replacement projects to maximize the service life of our facilities.

Golden State Water is fiducially responsible for managing its water tanks in a manner that will avoid exposing customers, employees, or property to unreasonable risk of harm while maintaining high water quality and providing reliable water service. Golden State Water can maximize its system reliability by performing the analyses that will determine what reasonable improvements could be done to optimize tank performance.

The TMP will provide support for the regulatory approval and delivery of tank projects. By obtaining tank reports prior to filing for a General Rate Case (GRC), Golden State Water's Engineering Planning Department (EPD) has the information available to help develop tank projects. The tank reports provide detailed descriptions of all tank improvements that need to be performed, as well as cost estimates for the proposed improvements. Per AWWA Manual 42: "If the evaluation is performed properly by a registered professional engineer experienced in tank design and maintenance, the repair procedures can be more exactly defined, potentially saving a significant amount of money." This results in projects developed by EPD with more refined budgets and scopes of work; thus reducing potential change orders, changes in scope, and project cost overruns. Reducing these items allows for a more expedient and smooth delivery of capital projects.

Including the tank reports as part of Golden State Water's testimony helps EPD justify and prioritize GRC projects. The tank reports contain professional recommendations, calculations, references to codes and standards, cost analyses, and more information that serve as substantial evidence for the need to complete the project. Since the tank reports are prepared by licensed tank industry experts, the observations and recommendations provide adept justification. Also, with comprehensive tank reports available, EPD has more information available to evaluate the importance of tank projects and help with project prioritization.

Effective monitoring of Golden State Water's tanks is the best approach to prolong their life spans and minimize lifetime costs. AWWA Manual M42 states that a good comprehensive preventive maintenance program can extend the life of existing tanks. Utilizing and maintaining the Tank Database, which contains pertinent tank data, helps Golden State Water be more proactive in identifying, prioritizing, and performing tank improvements. Tank improvements completed in a timely manner could minimize the need for larger and more expensive projects.

Tanks must be improved to prolong their useful lives or replaced on a regular basis to ensure they function properly and do not pose safety risks to Golden State Water employees or the general public. A TMP will help Golden State Water more effectively monitor the condition of the water tanks, as well as assist in the development of tank improvement and replacement projects.

2 Tank Database

The Tank Database includes all pertinent information related to the tank's construction, appurtenances, improvements, and most recent inspections. This database functions as a starting point for Operations and the Engineering Planning Department (EPD) to determine which tanks to perform further investigation and develop future rate case projects. Additionally, the Tank Database easily allows users to query tank data to assist with rate case RFIs or general planning.

The Tank Database is comprised of the following categories:

District – the Golden State Water district in which the tank is located

System – the water system in which the tank is located

Plant – the plant site wherein the tank is located

Major Facility – the name of the tank (e.g. Reservoir No. 1, North, etc.)

Year Built – the year the tank was constructed

Base Elev. – the elevation above mean sea level of the bottom of the tank (or top of tank footing)

Volume (MG) – the nominal volume of the tank in millions of gallons

Material – the material of the tank

Dimensions (ft) – Nominal

Dia. – nominal diameter of tank measured in feet (left blank if floor shape is not circular)

H – distance between the tank floor and top of the tank wall measured in feet

W – nominal width of the tank in feet (left blank if floor shape is circular)

L – nominal length of the tank in feet (left blank if floor shape is circular)

Floor Shape – shape of the tank's floor

Overflow Ht. (ft) – distance between the tank's floor and the flow line of the overflow pipe

Inlets (# - Dia. (in)) – number of inlets and size in inches (e.g. if two different sizes: 2 – 8″,12″)

<u>Inlet Flow Line Elevation (ft)</u> – Elevation to the invert (bottom) of the inlet pipe with regards to the reservoir floor (floor = 0 ft)

<u>Outlets (# - Dia. (in))</u> – number of outlets and size in inches (e.g. if two different sizes: 2 – 8″,12″)

<u>Outlet Flow Line Elevation (ft)</u> – Elevation to the invert (bottom) of the outlet pipe with regards to the reservoir floor (floor = 0 ft)

Cathodic Protection

<u>Type</u> – type of cathodic protection (passive, active, or none)

<u>Install Date</u> – date the cathodic protection was installed

Appurtenances

<u>Baffles</u> – does the reservoir contain baffles (yes or no)

<u>Mixer</u> – does the reservoir contain a mixer (yes or no)

<u>Blower</u> – does the reservoir contain a blower (yes or no)

<u>Constant Head Inlet</u> – does the reservoir contain an internal standpipe (yes or no)

<u>Tideflex</u> – does the reservoir contain a Tideflex (yes or no)

<u>Flexible Inlets/Outlets</u> – does the reservoir contain flexible inlets or outlets (yes or no)

<u>Bypass Capability</u> – does the reservoir have bypass capability located on site (yes or no)

<u>Level Target</u> – does the reservoir contain a level target (yes or no)

<u>Interior Coating Date</u> – date the reservoir's interior was last recoated

<u>Exterior Coating Date</u> – date the reservoir's exterior was last recoated

Inspection History (date of most recent)

<u>Coating</u> – date of the most recent coating inspection

<u>Seismic</u> – date of the most recent seismic inspection

<u>Structural</u> – date of the most recent structural inspection

<u>Remarks</u> – additional comments pertinent to the tank

3 Tank Documents

Electronic copies of all pertinent tank documents should be uploaded and retained in one location so all departments can easily access the data. Organization and naming of the documents should be consistent to enhance accessibility.

Location of Tank Documents

All pertinent tank documents should be uploaded to the appropriate tank folder. Each tank has its own folder on the replicating Asset Management server shown in the following path:

\\scwater.com\AM\Technical Services\Reservoirs

Within the 'Reservoirs' folder, the file folder structure will be broken down by District, then System (including cost center), and finally followed by the individual tank's folder. Please see the following example:

\\scwater.com\AM\Technical Services\Reservoirs\Northern District\118 - Cordova System\Coloma Res. No. 2

Documents To Be Retained

The pertinent documents that should be uploaded and retained in the individual tank folders include, but are not limited to, the following:

- As-Builts
- Comprehensive Tank Reports (e.g. corrosion, seismic, structural, etc.)
- Weekly and Quarterly Inspection Reports (typically performed by Operations)
- Tank Log
- Safety Inspections
- Data Sheets for Associated Equipment (e.g. cathodic protection system)
- Lead Based Paint Testing Results (TTLC and TCLP results if available)

Organization

Generally, the tank documents should be uploaded directly to the appropriate tank's folder. However, if multiple (i.e. three or more) of the same type of document are in the same folder, a subfolder should be created and named accordingly.

The following file naming convention shall be used when naming tank documents:

(document) – (tank name)(description)(date)

Note: the date should be entered in YYYYMMDD format

Examples:

- Report – Los Olivos Tank Corrosion 20170815
- As-Built – Los Olivos Tank Improvements 20170815
- Inspection – Los Olivos Tank 20170815

Responsibility

The Operations Department is responsible for procuring periodic inspection reports (per GSWC's Reservoir Inspection Program May 2017 or latest revision), comprehensive corrosion report, safety inspection reports, and other pertinent tank documents from projects managed by the Operations Department. The Capital Program Management Department (CPM) is responsible for procuring comprehensive tank reports (seismic and structural), as-builts, and all other pertinent documents related to capital construction projects.

The department that procures the tank document is responsible for uploading it to the appropriate folder and naming the file accordingly. Additionally, EPD should inquire about tank documents when preparing for a General Rate Case.

4 Tank Logs

Each tank has its own Tank Log, that is, a spreadsheet that functions as an electronic log for record keeping of all notable work performed on the tank.

Location of Tank Logs

Each Tank Log is located in the associated tank's folder under Technical Services on the replicating Asset Management server (as specified in Section 3).

Tank Log Entries

A Tank Log should be created immediately following the tank being placed in-service. The first entry should take account of the construction of the tank. Individual entries should be recorded for all subsequent work performed on the tank that exceeds $1,000. If several improvements were completed in one project, only one entry (possibly with multiple line items) should be created but the description should identify all notable items. Examples of tank-related work that should be recorded include, but are not limited to: inspection reports, interior and/or exterior recoats, rehabilitation work, installation of seismic joints, installation of new appurtenances, replacement of appurtenances, etc.

The Tank Logs should include the following information: date the work was completed, capital work order number or maintenance work order number the work was performed under, and a general description of the work completed.

Responsibility

A Tank Log should be created by the CPM Department when the tank is placed in-service. For all subsequent entries, the department that manages the work is responsible for recording the entry in the Tank Log. Typically, CPM will provide entries for work performed on capital projects, and Operations will provide entries for work performed under blanket work orders or maintenance.

5 Tank Reports

Comprehensive tank reports are necessary to assess the condition of the tank and determine necessary improvements. The common types of tank reports include corrosion, seismic, structural, health and safety. The tank reports should be completed under the direction of a registered engineer experienced in tank design and maintenance and will require an on-site evaluation. It is worth noting that the comprehensive tank reports discussed in this section are different from the periodic inspection reports that are procured by Operations. The following sections will address the tank reports' components, frequency, responsibility, and application.

Report Components

At minimum, the tank reports shall include the following components:

- Summary
- Observations of the existing condition
    - General Condition of Tank
    - Interior and Exterior Coating Systems
    - Health & Safety
- Recommendations for improvements
- Cost estimate for recommended improvements
- Photos and/or drawings (if necessary)
- Calculations (if necessary)
- References to applicable standards and regulations (if necessary)

Frequency

<u>Corrosion Reports</u>: Corrosion reports shall be completed at least once every five years. If the tank contains anodes for a cathodic protection system, the anodes shall be evaluated.

Health and Safety Improvements: Health and safety inspections of the tanks are performed as part of the overall plant site safety assessments performed by the Golden State Water's Environmental Compliance Department approximately once every three years; likewise, DDW performs their inspections on a similar frequency. These inspections indicate whether the tanks are in compliance with Cal-OSHA regulations and DDW Water Standards. Additionally, health and safety improvements should be evaluated while performing corrosion assessments or prior to any major tank rehabilitation work.

Structural and Seismic Reports: Structural and Seismic Reports shall be performed before major tank rehabilitation work (e.g. recoat). These reports may also be performed sooner based on observations in the tank inspections procured by Operations.

Responsibility

Generally, Operations is responsible for procuring the services of a qualified tank consultant to prepare the comprehensive corrosion reports per Operations' Reservoir Inspection Program. CPM is responsible for procuring the services of a registered engineer or qualified tank consultant to prepare the structural and seismic reports.

Application

The tank reports should be used to: 1) develop and justify projects in the upcoming rate case; 2) update information in the Tank Database; and 3) make operational and maintenance changes as needed.

EPD should use the analyses and recommendations included in the tank reports to develop the scopes of new capital projects for upcoming rate cases or the unbudgeted project process, if necessary. All information contained within the reports should also be used for preparing project justification. The tank reports' cost estimates of recommended improvements should be used as a basis for preparing tank project budgets.

6 Tank Projects

For the purpose of this section, tank projects are projects that include all capital improvements or upgrades to existing tanks (e.g. recoats, seismic improvements, etc.), tank replacements, and construction of new tanks; but are not projects that only include improvements to the existing plant site or other plant site facilities. Tank projects are developed by EPD and typically included in the rate case, but may also be unbudgeted if the project need is urgent and previously unanticipated. Operations can be the catalyst for tank improvements by informing EPD of a deficiency or need.

Bid Documents

The bid documents for tank projects, including plans and specifications, shall be prepared by an engineer or firm that is familiar with the most current tank industry standards and practices.

The Basis of Bid table should include a thorough work breakdown structure with line items to get competitive unit costs for items such as, but not limited to, the following: dehumidification, fill pits, weld plates, exterior painting (which can be damaged from welding), inspection blasting, containment, and crew hours for structural repairs.

For projects that include tank recoat or demolition, the presence of lead-based paint in the existing coating system must be tested by a certified laboratory prior to bidding the project, but preferably during preparation of the bid documents so proper removal is included. Removal of the existing coating system will be completed in accordance with the OSHA Lead in Construction regulation. Additionally, disposal of the waste generated as a result of the recoating or demolition of the tank will be in accordance with all California Code of Regulations Title 22 and Health and Safety Code Division 20 hazardous waste law.

Operation During Construction

The operation of the water system must be considered and addressed during the planning and design of the project. In some instances, tanks may be taken out of service during construction of the project and will minimally impact the operation of the water system. Other cases may require the installation of temporary facilities (e.g. temporary tanks) or modification of system operation (e.g. operate as closed zone via SCADA programming or PRV) to properly operate the water system and/or provide reliable water service. If water storage is unavailable during construction of the project, Operations should coordinate with the local Fire Department, as necessary.

Inspection

Inspection of new coating systems on both new tanks and existing tanks shall be performed by experienced inspectors with certification from the NACE International Institute. The inspector shall provide daily inspection reports that include, but are not limited to, the following: start/stop times, detailed description of work performed, crew members present, weather conditions, and photos.

Warranty

The interior coating system shall have a one-year warranty period beginning on the date specified in the Certificate of Substantial Completion. Operations shall schedule a warranty inspection for the interior coating approximately 11 months following the date of substantial completion. If the inspection results in the recommendation of additional work as covered under the warranty period, Operations shall inform CPM. CPM shall coordinate the work to be performed by the contractor under the warranty.

Cathodic Protection

Tank projects that include the installation of cathodic protection equipment shall include the design of a cathodic protection system in the bid documents. The cathodic protection system shall be installed under the contract; however, the cathodic protection system shall not be activated until the one-year warranty period has passed. This can be performed on a passive cathodic protection system by not grounding the system (not connecting the cathodic protection system to the tank). Not utilizing the cathodic protection system in the first year will help allow any potential defects in the coating system to be discovered during the warranty inspection and subsequently corrected by the contractor under warranty. The cathodic protection system's anodes should be evaluated during the corrosion evaluation (at least once every five years).

POTABLE DIVERS INC.

866-789-3483

Golden State Water
Field Report

19-Feb-15

Underwater Inspection
5,000,000 Gallon
Tank #4
Potable Water Storage Tank

Submitted To:

Golden State Water Company
Travis Anderson
11200 Coloma Rd
Rancho Cordova, CA 95670

Phone: 916-635-1867
Fax: 916-852-0171

Submitted By:

Potable Divers Inc.
PO Box 474
Vernal, UT 84078-0474

Phone: (866) 789-3483
Fax: (866) 913-4905
E-mail david@potabledivers.com

David Harvey Dive Supervisor

EXTERIOR ROOF

		Y	N
Safety Rail			
Satisfactory		X	
Coating	Good		
Welds	Good		
Corrosion	%		X
Coating			
Satisfactory		X	
Oxidized			X
Pitting			X
Delamination			X
Corrosion	>1%	X	
Seams/Welds	Good		
Low Spots			X
Cathodic Protection Plates			
Sealed		X	
Loose			X
Missing			X

Conclusion/Discrepancies: Overall good typical nicks and scratches

ACCESS HATCH

		Y	N
Satisfactory		X	
Coating			
Corrosion	10%	X	
Proper Design		X	
Locked		X	
Gasket			X
Hinge	Good		
Hatch Size	3 FT X 3 FT		

Conclusion/Discrepancies Corrosion on the interior of the riser. Lid and hardware in good condition. No gasket present

VENTS

		Y	N
Satisfactory			X
Coating			
Corrosion	10%	X	
Proper Design		X	
Screens		X	
Sealed Edges & Seams			X
Cap/Cover		X	

Conclusion/Discrepancies Securing bands holding the screen are both broken and need replaced. Screen is corroded but holding up well

EXTERIOR SHELL

Rings

Chime		Good			
2nd Weld Ring		Good			
3rd Weld Ring		Good			
4th Weld Ring		Good			
5th Weld Ring		Good			
Ring(s)	5 in all	Good			
Wall to Roof Seam		Good			

Coating

		Y		N	
Satisfactory		Y	X	N	
Oxidized		Y	X	N	
Pitting		Y		N	X
Delamination		Y		N	X
Corrosion	>5%	Y	X	N	

Conclusion/Discrepancies Overall good. Coating is oxidized but adhesion is excellent typical nicks and scratches present

EXTERIOR LADDER

Construction		Coated Steel			
Satisfactory		Y	X	N	

Coating

Satisfactory		Y	X	N	
Oxidized		Y		N	X
Pitting		Y		N	X
Delamination		Y		N	X
Corrosion	%	Y		N	X
Welds/Joints		Good			
Supports		Good			
Safety Cage/Climb		Y	X	N	

Conclusion/Discrepancies Ladder cage and supports are all in good condition

OVERFLOW STRUCTURE

Coating

Satisfactory		Y	X	N	
Oxidized		Y	X	N	
Pitting		Y		N	X
Delamination		Y		N	X
Corrosion	%	Y		N	X
Welds/Joints		Good			
Supports		Good			
Screens		Y	X	N	
Attachments		Pipe			
Foundation		Good			

Conclusion/Discrepancies Pipe and screen are in good condition

FOUNDATION

Concrete Slab/Ring				
Satisfactory	Y	X	N	
Cracking	Y		N	X
Spalling	Y		N	X
Exposed Aggregate	Y		N	X
Erosion Undermining	Y		N	X
Seismic Restraints	None			
Corrosion	Y		N	
Tight	Y		N	

Conclusion/Discrepancies Support ring is in good condition. No undermining or erosion noted

MANWAY ENTRIES

Coating					
Satisfactory		Y	X	N	
Oxidized		Y	X	N	
Pitting		Y		N	X
Delamination		Y		N	X
Corrosion	>2%	Y	X	N	
Welds/Joints		Good			

Conclusion/Discrepancies Minor corrosion on bottom edge of extension

INTERIOR ROOF

Coating					
Satisfactory		Y		N	X
Blistering		Y		N	X
Cracking		Y		N	X
Peeling		Y	X	N	
Holidays		Y	X	N	
Corrosion	15%	Y	X	N	
Seams/Welds		Poor			
Trusses		Poor			
Gussets		Fair-poor			
Coating					
Blistering		Y		N	X
Cracking		Y		N	X
Peeling		Y	X	N	
Holidays		Y	X	N	
Corrosion	15	Y	X	N	
Vent Penetration		Fair-poor			
Roof Hatch		Fair-poor			

Conclusion/Discrepancies: Coating on the edges of the trusses has failed and corrosion has damaged the edges of the trusses. Corrosion also noted along the seams

INTERIOR SHELL

Coating					
Satisfactory		Fair	X	N	
Blistering		Y	X	N	
Cracking		Y		N	X
Peeling		Y		N	X
Holidays		Y		N	X
Pitting		Y		N	X
Corrosion	%	Y		N	
Seams/Welds		Good			
Rings					
Chime		Good			
2nd Weld Ring		Good			
3rd Weld Ring		Good			
4th Weld Ring		Good			
5th Weld Ring		Good			
Ring(s)	5 in all	Good			
Wall to Roof Seam		Good			
Baffle/Support Walls		1 Curtain in good condition			

Conclusion/Discrepancies: Discoloration covers the walls, the coating however is in good condition

SUPPORT COLUMNS

Coating

Satisfactory		Fair		N	
Blistering		Y		N	X
Cracking		Y		N	X
Peeling		Y		N	X
Holidays		Y	X	N	
Pitting		Y		N	X
Corrosion	>2%	Y	X	N	

Seams/Welds: Good

Floor/Base Plates: Good

Construction: Coated Steel

Conclusion/Discrepancies: Overall good minor corrosion noted on the stems with discoloration

FLOOR

Coating

Satisfactory		Y	X	N	
Blistering		Y		N	X
Cracking		Y		N	X
Peeling		Y		N	X
Holidays		Y	X	N	
Pitting		Y		N	X
Corrosion	>2%	Y	X	N	

Seams/Welds: Good

Conclusion/Discrepancies: Overall good minor corrosion noted on the floor plates with discoloration

Sediment Depth: Less than a 1/16 sporadically over the floor

MANWAY ENTRIES

Coating

Satisfactory		Y	X	N	
Blistering		Y		N	X
Cracking		Y		N	X
Peeling		Y		N	X
Holidays		Y		N	X
Pitting		Y		N	X
Corrosion	>2%	Y	X	N	

Seams/Welds: Good

Conclusion/Discrepancies: Minor corrosion noted on the outer edges of the door. Seams and welds are in good condition

LADDER

Construction			
Satisfactory		Y	N
Coating			
Satisfactory		Y	N
Blistering		Y	N
Cracking		Y	N
Peeling		Y	N
Holidays		Y	N
Pitting		Y	N
Corrosion	%	Y	N
Seams/Welds			
Safety Cage/Climb		Y	N

Conclusion/Discrepancies:

OVERFLOW

Location			
Coating			
Satisfactory		Y	N
Blistering		Y	N
Cracking		Y	N
Peeling		Y	N
Holidays		Y	N
Pitting		Y	N
Corrosion	%	Y	N
Seams/Welds			

Conclusion/Discrepancies:

POTABLE DIVERS INC.

866-789-3483

APPURTENANCES

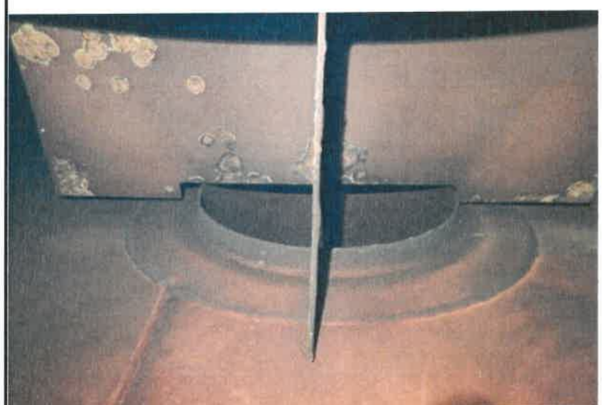
Influent

Coating

Satisfactory		Y		N	
Blistering		Y		N	
Cracking		Y		N	
Peeling		Y		N	
Holidays		Y		N	
Pitting		Y		N	
Corrosion	%	Y		N	
Seams/Welds					

Conclusion/Discrepancies:

Effluent



Coating

Satisfactory		Y		N	
Blistering		Y		N	
Cracking		Y		N	
Peeling		Y		N	
Holidays		Y		N	
Pitting		Y		N	
Corrosion	%	Y		N	
Seams/Welds					

Conclusion/Discrepancies:

Drain

Coating Capped off

Satisfactory		Y	X	N	
Blistering		Y		N	X
Cracking		Y		N	X
Peeling		Y		N	X
Holidays		Y		N	X
Pitting		Y		N	X
Corrosion	%	Y		N	X
Seams/Welds		Good			

Conclusion/Discrepancies: Closed off pipe
no dedicated drain line

BAFFLES

First

Construction Hypalon

	Y		N	
Satisfactory	Y	X	N	
Tears	Y		N	X
Holes	Y		N	X
Hardware in place	Y		N	X
Sagging	Y		N	X
Corrosion		X		

Seams/Welds Good

Conclusion/Discrepancies: corrosion on hanging hardware. Curtain is in good condition

Same

Coating

	Y		N	
Satisfactory	Y		N	
Tears	Y		N	
Holes	Y		N	
Hardware in place	Y		N	
Sagging	Y		N	
Corrosion %	Y		N	

Seams/Welds

Conclusion/Discrepancies:

Same

Coating

	Y		N	
Satisfactory	Y		N	
Tears	Y		N	
Holes	Y		N	
Hardware in place	Y		N	
Sagging	Y		N	
Corrosion %	Y		N	

Seams/Welds

Conclusion/Discrepancies:

Conclusion

Based on the results of this underwater inspection which took place, it appears this tank is in full operational condition and should continue to provide a reliable water storage capacity for potable water use with proper maintenance.

Recommendations

PDI concurs with the recommendations of AWWA that all potable water reservoirs or storage tanks be cleaned and inspected at least every five years and in some cases, depending upon source waters, type and quantities of sediment, and presence (or lack thereof) of cathodic protection systems, more frequently.
The following recommendations are made to provide continued, uninterrupted service of your water storage tank:

1. Your tank should be inspected and cleaned every five years, as suggested by the AWWA. Routine inspections and cleanings provide ample time to perform remedial repairs to abnormalities discovered before having a chance to become problematic.
2. The coating on the interior roof is failing. The edges of the trusses have substantial corrosion and the trusses are losing integrity. The welds, seams, and overlapping plates all have corrosion along them with coating that is cracking.
3. The roof entry hatch needs to have a gasket put in place to minimize the corrosion and create a good seal.
4. The center roof vent needs new clamps to secure the screen as both are broken.

TANK 4
COLOMA WTP
5 MG

Potable Divers INC.

Exterior Inspection Report

2/19/15

AMERICAN WATER WORKS ASSOCIATION
ANSI/AWWA D 101-53 (R86)

EXTERIOR ROOF

Safety Rail	Satisfactory	X	Coating	Good	Welds	Good	Rust/Corrosion	Normal
Access Hatch	Satisfactory	X	Proper Design	Yes	Locked	Yes	Gasket & Hinge Bolts	NO – Good
External Coating	Satisfactory	X	Oxidized	NO	Pitting	NO	Rust/Corrosion	typical nicks scratches
Roof/Roof Panels	Satisfactory	X	Low Areas	NO	Holes	NO	Seams/Joints/Welds	Good
Vents	Satisfactory	NO	Proper Design	Yes	Screens	Yes	Sealed Edges & Seams	no broken clamps
Cathodic Protection Plates	Satisfactory	X	Sealed	Yes	Secured	Yes	Rust/Corrosion	Yes

EXTERIOR WALL

Wall to Roof Seam	Satisfactory	X	Pitting	NO	Holes	NO	Rust/Corrosion	NO
Wall Surface	Satisfactory	X	Cracking	NO	Spalling	N/A	Exposed Aggregate	N/A
External Coating	Satisfactory	X	Oxidized	moderate	Pitting	NO	Rust/Corrosion	NO
No. 1 Ring (Bottom)	Satisfactory	X	Pitting	NO	Holes	NO	Rust/Corrosion	NO
No. 2 Ring	Satisfactory	X	Pitting		Holes		Rust/Corrosion	
No. 3 Ring	Satisfactory	X	Pitting		Holes		Rust Corrosion	
No. 4 Ring	Satisfactory	X	Pitting		Holes		Rust/Corrosion	
No. 5 Ring	Satisfactory	X	Pitting		Holes		Rust/Corrosion	
Ring(s) 5	Satisfactory	X	Pitting		Holes		Rust/Corrosion	
Access Ladder	Satisfactory	X	Bolts & Rungs	Good	Rust	NO	Safety Cage/System	Yes
Overflow Structure	Satisfactory	X	Attachments	Pipe	Screen	Yes	Operation	Good

FOOTINGS/FOUNDATION

Concrete Slab/Ring	Satisfactory	X	Cracking	NO	Spalling	NO	Exposed Aggregate	NO
Overflow Structure	Satisfactory	X	Loose	NO	Rust	NO		

Coloma WTP

5 MG

Potable Divers INC.

2/19/15

AMERICAN WATER WORKS ASSOCIATION
ANSI/AWWA D 101-53 (R86)

ROOF

General Appearance	Excellent		Good		Fair	✓	Poor		Critical	
Interior Coating	Excellent		Good		Fair	✓	Poor	✓	Critical	
Trusses	Excellent		Good		Fair		Poor	✓	Critical	
Roof Panels	Excellent		Good		Fair	✓	Poor		Critical	
Welds/Bolted Joints	Excellent		Good		Fair		Poor	✓	Critical	
Wall-to-Truss Gussets	Excellent		Good		Fair	✓	Poor		Critical	
Cracking	Absent	✓	Slight		Extensive		Severe		Critical	
Blistering	Absent	✓	Slight		Extensive		Severe		Critical	
Holidays	Absent		Slight	✓	Extensive	✓	Severe		Critical	
Corrosion	Absent		Slight	✓	Extensive	✓	Severe		Critical	
Vents & Screens	Intact				Damaged					
Hatch										

Remarks/Discrepancies:

WALLS

General Appearance	Excellent		Good		Fair	✓	Poor		Critical	
Interior Coating	Excellent		Good		Fair	✓	Poor		Critical	
Welds/Bolted Joints	Excellent		Good		Fair	✓	Poor		Critical	
Walls/Wall Panels	Excellent		Good		Fair	✓	Poor		Critical	
Floor-to-Wall Joint/Weld	Excellent		Good		Fair	✓	Poor		Critical	
Cracking	Absent	✓	Slight		Extensive		Severe		Critical	
Blistering	Absent		Slight	✓	Extensive		Severe		Critical	
Holidays	Absent	✓	Slight		Extensive		Severe		Critical	
Corrosion	Absent		Slight	✓	Extensive		Severe		Critical	
Pitting	Absent	✓	Slight		Extensive		Severe		Critical	
Baffle/Support Walls 1 wall	Absent		Slight		Extensive		Severe		Critical	

Remarks/Discrepancies:

SUPPORT COLUMNS

General Appearance	Excellent		Good		Fair	✓	Poor		Critical	
Coating	Excellent		Good		Fair	✓	Poor		Critical	
Cracking	Absent	✓	Slight		Extensive		Severe		Critical	
Blistering	Absent	✓	Slight		Extensive		Severe		Critical	
Holidays	Absent	✓	Slight		Extensive		Severe		Critical	
Corrosion	Absent		Slight	✓	Extensive		Severe		Critical	
Pitting	Absent	✓	Slight		Extensive		Severe		Critical	
Floor Plates/Bases	Excellent		Good	✓	Fair		Poor		Critical	
Construction	Concrete		Steel	✓	Wood					

Remarks/Discrepancies:

FLOOR

General Appearance	Excellent		Good		Fair	✓	Poor		Critical	
Interior Coating	Excellent		Good		Fair	✓	Poor		Critical	
Welds/Bolted Joints	Excellent		Good		Fair	✓	Poor		Critical	
Cracking	Absent	✓	Slight		Extensive		Severe		Critical	
Blistering	Absent	✓	Slight		Extensive		Severe		Critical	
Holidays	Absent	✓	Slight		Extensive		Severe		Critical	
Corrosion	Absent		Slight	✓	Extensive		Severe		Critical	
Pitting	Absent	✓	Slight		Extensive		Severe		Critical	

Remarks/Discrepancies:

Interior Plumbing	Overflow	Good	Water Level Sensors	N/A	Sediment depth	1/16"
	Influent	Good	Cathodic Protection	N/A	Notes:	
	Effluent	Good + fair	Ladder	Good		
	Drain	Good	Man Ways	Good		

Golden State Water
Field Report

28-Apr-21

Underwater Cleaning and Inspection
5,000,000 Gallon
Reservoir #4
Potable Water Storage Tank

Submitted To:

Golden State Water Company
Travis Anderson
11200 Coloma Rd
Rancho Cordova, CA 95670

Phone: 916-635-1867
Fax: 916-852-0171

Submitted By:

Potable Divers Inc.
PO Box 474
Vernal, UT 84078-0474

Phone: (866) 789-3483

E-mail david@potabledivers.com

____

David Harvey Dive Supervisor

EXTERIOR ROOF

Safety Rail					
Satisfactory		Y	X	N	
Coating		Good			
Welds		Good			
Corrosion	<1%	Y	X	N	
Coating					
Satisfactory		Y	X	N	
Oxidized		Y	X	N	
Pitting		Y		N	X
Delamination		Y		N	X
Corrosion	<1%	Y	X	N	
Seams/Welds		Good			
Low Spots		Y		N	X
Cathodic Protection Plates					
Sealed		Y	X	N	
Loose		Y		N	X
Missing		Y		N	X

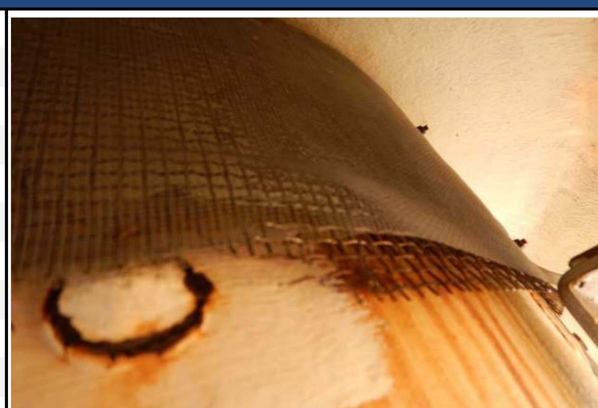
Conclusion/Discrepancies: Minor nicks and scratches on handrailing. Coating on the roof exhibits good adhesion being slightly oxidized. Cathodic plates do have surface rust present.

ACCESS HATCH

Satisfactory		Y	X	N	
Coating					
Corrosion	10%	Y	X	N	
Proper Design		Y	X	N	
Locked		Y	X	N	
Gasket		Y	X	N	
Hinge		Good			
Hatch Size		3	FT	X	3 FT

Conclusion/Discrepancies Corrosion on the interior of the riser. Lid and hardware in good condition. Gasket present locked and secured.

VENTS



Satisfactory		Y		N	X
Coating					
Corrosion	10%	Y	X	N	
Proper Design		Y	X	N	
Screens		Y	X	N	
Sealed Edges & Seams		Y		N	X
Cap/Cover		Y	X	N	

Conclusion/Discrepancies Screen and riser have corrosion present. The edges of the screen are not sealed.. No holes or tears in the screen itself, overall in good condition just needs to be sealed on the edges.

EXTERIOR SHELL

Rings					
Chime	Good				
2nd Weld Ring	Good				
3rd Weld Ring	Good				
4th Weld Ring	Good				
5th Weld Ring	Good				
Ring(s) 5 in all	Good				
Wall to Roof Seam	Good				
Coating					
Satisfactory		Y	X	N	
Oxidized		Y	X	N	
Pitting		Y		N	X
Delamination		Y		N	X
Corrosion		Y		N	X

Conclusion/Discrepancies Coating is oxidized with good adhesion. Exterior shell is in good condition with no problematic concerns

EXTERIOR LADDER

Construction	Coated Steel				
Satisfactory		Y	X	N	
Coating					
Satisfactory		Y	X	N	
Oxidized		Y		N	X
Pitting		Y		N	X
Delamination		Y		N	X
Corrosion	%	Y		N	X
Welds/Joints	Good				
Supports	Good				
Safety Cage/Climb		Y	X	N	

Conclusion/Discrepancies Ladder, cage and braces are all in good condition locked and secured

OVERFLOW STRUCTURE

Coating					
Satisfactory		Y	X	N	
Oxidized		Y	X	N	
Pitting		Y		N	X
Delamination		Y		N	X
Corrosion	%	Y		N	X
Welds/Joints	Good				
Supports	Good				
Screens		Y	X	N	
Attachments	Pipe				
Foundation	Good				

Conclusion/Discrepancies Pipe and screen are in good condition

FOUNDATION

Concrete Slab/Ring					
Satisfactory	Y	X	N		
Cracking	Y		N	X	
Spalling	Y		N	X	
Exposed Aggregate	Y		N	X	
Erosion Undermining	Y		N	X	
Seismic Restraints	None				
Corrosion	Y		N		
Tight	Y		N		

Conclusion/Discrepancies Support ring is in good condition. No undermining or erosion noted

MANWAY ENTRIES

Coating					
Satisfactory		Y	X	N	
Oxidized		Y	X	N	
Pitting		Y		N	X
Delamination		Y		N	X
Corrosion	<2%	Y	X	N	
Welds/Joints	Good				

Conclusion/Discrepancies Minor corrosion on the edges of the extensions. Gaskets are holding up well with no leaks. All hardware is in place.

INTERIOR ROOF

Coating						
Satisfactory		Y		N	X	
Blistering		Y		N	X	
Cracking		Y		N	X	
Peeling		Y		N	X	
Holidays		Y	X	N		
Corrosion	20%	Y	X	N		
Seams/Welds		Fair-poor				
Trusses		Poor				
Gussets		Fair-poor				
Coating						
Blistering		Y		N	X	
Cracking		Y		N	X	
Peeling		Y	X	N		
Holidays		Y	X	N		
Corrosion	20%	Y	X	N		
Vent Penetration		Fair-poor				
Roof Hatch		Fair-poor				

Conclusion/Discrepancies: Coating on the edges of the trusses has failed and corrosion has damaged the edges of the trusses. Corrosion also noted along the seams

INTERIOR SHELL

Coating						
Satisfactory		Y	X	N		
Blistering		Y		N	X	
Cracking		Y		N	X	
Peeling		Y		N	X	
Holidays		Y		N	X	
Pitting		Y		N	X	
Corrosion	%	Y		N		
Seams/Welds		Good				
Rings						
Chime		Good				
2nd Weld Ring		Good				
3rd Weld Ring		Good				
4th Weld Ring		Good				
5th Weld Ring		Good				
Ring(s)	5 in all	Good				
Wall to Roof Seam		Good				

Baffle/Support Walls: 1 Curtain in good condition

Conclusion/Discrepancies: Coating exhibits good adhesion with no problematic concerns. No corrosion noted, the weld rings are in good condition.

SUPPORT COLUMNS

Coating					
Satisfactory		Y	X	N	
Blistering		Y		N	X
Cracking		Y		N	X
Peeling		Y		N	X
Holidays		Y	X	N	
Pitting		Y		N	X
Corrosion	<2%	Y	X	N	
Seams/Welds		Good			
Floor/Base Plates		Good			
Construction		Coated Steel			

Conclusion/Discrepancies: A few minor spots of corrosion noted on the stems. Overall in good condition

FLOOR

Coating					
Satisfactory		Y	X	N	
Blistering		Y		N	X
Cracking		Y		N	X
Peeling		Y		N	X
Holidays		Y	X	N	
Pitting		Y		N	X
Corrosion	<2%	Y	X	N	
Seams/Welds		Good			

Conclusion/Discrepancies: several small rust spots noted sporadically over the floor. Weld seams are in good condition with no noted concerns.

Sediment Depth: Less than a 1/16 sporadically over the floor

MANWAY ENTRIES

Coating					
Satisfactory		Y	X	N	
Blistering		Y		N	X
Cracking		Y		N	X
Peeling		Y		N	X
Holidays		Y		N	X
Pitting		Y		N	X
Corrosion	<2%	Y	X	N	
Seams/Welds		Good			

Conclusion/Discrepancies: Minor corrosion noted on the outer edges of the doors. Seams and welds are in good condition

No leaks gasket are holding up well.

LADDER

Construction		Coated steel			
Satisfactory		Y	X	N	
Coating					
Satisfactory		Y	X	N	
Blistering		Y		N	X
Cracking		Y		N	X
Peeling		Y		N	X
Holidays		Y		N	X
Pitting		Y	X	N	
Corrosion	2%	Y	X	N	
Seams/Welds		Good			
Safety Cage/Climb		Y	X	N	

Conclusion/Discrepancies: Two rungs above the high water line have integrity loss, cation when using. Minor corrosion on the braces above water line. Overall in good-fair condition.

OVERFLOW

Location	9:00				
Coating					
Satisfactory		Fair	X	N	
Blistering		Y		N	X
Cracking		Y		N	X
Peeling		Y		N	X
Holidays		Y		N	X
Pitting		Y		N	X
Corrosion	5%	Y	X	N	
Seams/Welds		Good			

Conclusion/Discrepancies: Minor spots of rust on the pipe and support brace. No pitting noted.

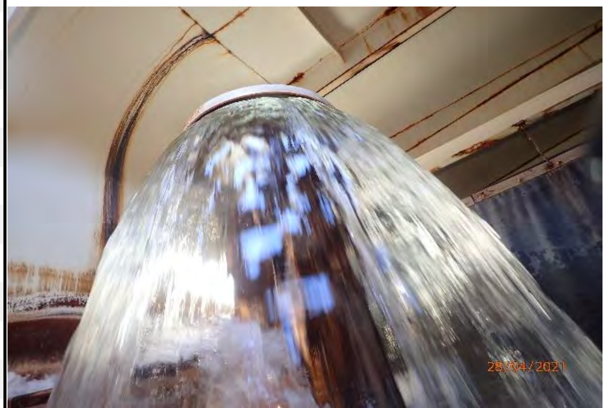
CATHODIC PROTECTION

Satisfactory	Y	X	N	
Life Left	50%			
Hardware	Y	X	N	
Roof plates	Y	X	N	
Missing Anodes	Y		N	X

Conclusion/Discrepancies: All anodes are in place properly suspended with all hardware in place.

APPURTENANCES

Influent

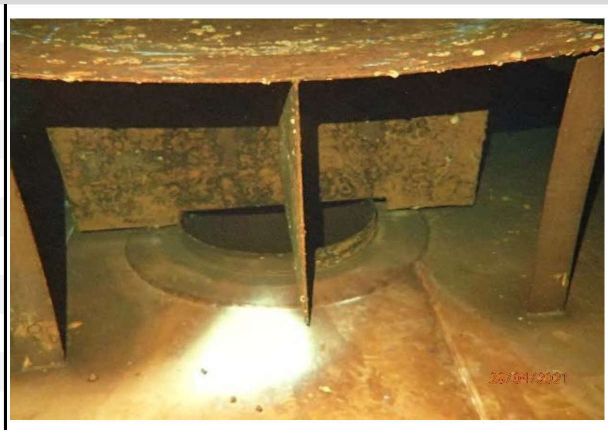


Coating

Satisfactory		Y	X	N	
Blistering		Y		N	X
Cracking		Y		N	X
Peeling		Y		N	X
Holidays		Y		N	X
Pitting		Y		N	X
Corrosion	%	Y		N	X
Seams/Welds	Good				

Conclusion/Discrepancies: Pipe and braces are in good condition. Slight discoloration but in good condition with no corrosion.

Effluent

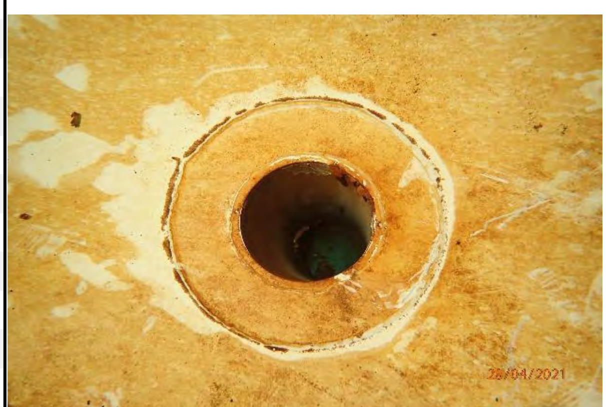


Coating

Satisfactory		Fair	X	N	
Blistering		Y		N	X
Cracking		Y		N	X
Peeling		Y		N	X
Holidays		Y		N	X
Pitting		Y	X	N	
Corrosion	5%	Y	X	N	
Seams/Welds	Good				

Conclusion/Discrepancies: A few rust nodules with minor pitting on the antivortex plate, pipe is in good condition, clear and unobstructed.

Drain



Coating

Satisfactory		Y	X	N	
Blistering		Y		N	X
Cracking		Y		N	X
Peeling		Y		N	X
Holidays		Y		N	X
Pitting		Y		N	X
Corrosion	2%	Y	X	N	
Seams/Welds	Fair				

Conclusion/Discrepancies: minor corrosion on the interior weld seam.

BAFFLES

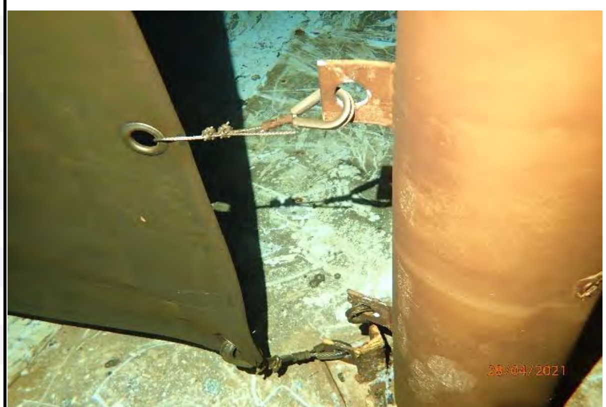
First					
Construction	Hypalon				
Satisfactory		Y	X	N	
Tears		Y	X	N	
Holes		Y		N	X
Hardware in place		Y	X	N	
Sagging		Y		N	X
Corrosion			X		
Seams/Welds	Good				

Conclusion/Discrepancies: corrosion on hanging hardware and the truss.

Curtain is in good condition with one small tear at the bottom of the second floor anchor

Same					
Coating					
Satisfactory		Y		N	
Tears		Y		N	
Holes		Y		N	
Hardware in place		Y		N	
Sagging		Y		N	
Corrosion	%	Y		N	
Seams/Welds					

Conclusion/Discrepancies:



Same					
Coating					
Satisfactory		Y		N	
Tears		Y		N	
Holes		Y		N	
Hardware in place		Y		N	
Sagging		Y		N	
Corrosion	%	Y		N	
Seams/Welds					

Conclusion/Discrepancies:

Conclusion

Based on the results of this underwater cleaning and inspection which took place, it appears this tank is in full operational condition and should continue to provide a reliable water storage capacity for potable water use with proper maintenance.

Recommendations

PDI concurs with the recommendations of AWWA that all potable water reservoirs or storage tanks be cleaned and inspected at least every five years and in some cases, depending upon source waters, type and quantities of sediment, and presence (or lack thereof) of cathodic protection systems, more frequently.
The following recommendations are made to provide continued, uninterrupted service of your water storage tank:

1 Your tank should be inspected and cleaned every five years, as suggested by the AWWA. Routine inspections and cleanings provide ample time to perform remedial repairs to abnormalities discovered before having a chance to become problematic.

2 The coating on the interior roof is failing. The edges of the trusses have substantial corrosion and the trusses are losing integrity. The welds, seams, and overlapping plates all have corrosion along them with coating that is cracking.

3 The center roof vent needs the edges of the screen sealed.

Note:

During the cleaning small amounts of rust were removed from the floor coming from the edges of the trusses. Corrosion is causing integrity loss on the trusses, sine the last inspection the corrosion has increased about 5% totaling around 15 % of the trusses being covered in corrosion.

Attachment 1-2

Excerpt from GSWC's Consultant (HAE) Corrosion Report for Coloma Reservoir No.4.

Attachment 1-2 A

Excerpt from: Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, Attachment AC01, the Harper and Associates Engineering (HAE), Inc., Corrosion Engineering Evaluation report (August 2022) for Coloma Reservoir No.4 (5.0 MG Welded Steel Water Storage Reservoir). The HAE consultant identified severe corrosions in the interior Surfaces: p.4 of 51, Section III. Observations A.2.b Interior Surfaces (a.1) to (a.9).

2. Interior Surfaces

a. Underside of Roof and Structural Members

1) The coating system on the roof and structural members exhibits moderate to severe general corrosion on large areas of the roof plates and structural members. (Photos I-1 through I-18)

2) Moderate to severe corrosion is present along the rafter flanges and roof lap joints in the outer bay. (Photos I-7 through I-14 and I-21 through I-27)

3) Cracked coating and corrosion are present at the rafter to lateral strap connections. (Photos I-9 and I-10)

4) Moderate to severe corrosion is present on the rafter to girder connections. (Photos I-11 through I-18)

5) Severe corrosion is present on the girder flanges and girder to column connections. (Photos I-12 through I-18)

6) Minor corrosion is present along the circumference of the CP handholes. (Photo I-19)

7) Severe corrosion is present along the roof lap joints in the outer bay and the roof the knuckle transition. (Photos I-19 through I-27)

8) Severe corrosion is present on the circumference of the secondary roof hatch curb, and general corrosion is present on the cover. (Photo I-20)

9) General corrosion is present on the primary roof hatch curb and adjacent roof plates. (Photo I-36)

1

Attachment 1-2 B

Excerpt from: Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, Attachment AC01, the Harper and Associates Engineering (HAE), Inc., Corrosion Engineering Evaluation report (August 2022) for Coloma Reservoir No.4 (5.0 MG Welded Steel Water Storage Reservoir). Severe corrosions in the interior surfaces: p.5 of 51, Section III. Conclusion A.2.b Interior Surfaces (a.1) to (a.3).

2. Interior Surfaces

a. Underside of Roof and Structural Members

1) The coating system on the roof and structural members is in overall poor condition due to the severe general corrosion present. The coating system is 20 years old, and an epoxy system typically has a useful lifespan of 20 to 25 years.

2) The large areas of general corrosion primarily on the inner bay are due to a higher concentration of chlorine vapor present in the vapor zone. All tanks have varying concentrations of chlorine vapor present. It has been HAE's experience that, when the mils are lower, it is more likely that the higher chlorine vapor level permeates the coating, causing the corrosion to develop faster and worsen quicker. Since the vapor flows toward the center vent, it tends to be worse on the surfaces in the inner bay.

3) Moderate to severe corrosion on the rafter and girder flanges, roof lap joints, roof to knuckle transition, and structural connections that do not have the general corrosion is due to the age of the coating and the applicators not properly coating irregular surfaces by brush applying the coating between spray coats originally.

b. Shell and Appurtenances

1) The coating system on the shell is in overall good condition, but the coating on the appurtenances is in fair condition. As noted above, the coating system is 20 years old and at the end of its typical life expectancy.

2) Dark staining on the shell and appurtenances below the high water level is due to contaminants in the water supply that adhere to the surfaces over time.

Harper & Associates Engineering, Inc. 7
HAE\Corrosion\3128-GSWC-Northern-Coloma No 4_Corr 2022

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Attachment 1-2 C

Excerpt from: Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, Attachment AC01, the Harper and Associates Engineering (HAE), Inc., Corrosion Engineering Evaluation report (August 2022) for Coloma Reservoir No.4 (5.0 MG Welded Steel Water Storage Reservoir). Severe corrosions in the interior surfaces: p.11 of 51, Section VI. Recommendations A.2.b Interior Surfaces (a) to (b):

2. Interior Surfaces

a. The coating system on the interior roof surfaces is in poor condition and, at 20 years old, it has reached its useful lifespan of 20 to 25 years, and corrosion related structural damage is occurring. Therefore, it is recommended all interior surfaces be recoated. Due to the apparent elevated chlorine vapor levels, HAE recommends abrasive blast cleaning all interior surfaces to Near White Metal (SSPC-SP10) and applying a 100% solids epoxy coating system to a total dry film thickness of 25 mils on all interior surfaces.

b. The corroded interior ladder will need to be replaced. It is recommended to replace it with a fiberglass ladder.

1

Attachment 1-3

Generator Correspondence Emails

Attachment 1-3 A

GSWC's response to DR SN2-012 Question no. 11 on attachment 'SN2-012 Q11-Request.' Email From CEC-DSGS to California Public and Water Agencies.

From: Hancocks, Brandyn
Sent: Tuesday, October 31, 2023 2:34 PM
To: Insco, Mark
Subject: FW: Requesting Action to Reduce Energy Load Today through Thursday
Attachments: DSGS Participant Application.xlsx

Importance: High

Follow Up Flag: Follow up
Flag Status: Flagged

Specific request to water agencies.

Brandyn Hancocks
Golden State Water Company – Compliance Manager
Environment, Safety, Emergency Preparedness, Training & Development

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From: Carrillo, Deana@Energy <deana.carrillo@energy.ca.gov>
Sent: Monday, September 5, 2022 11:30 AM
To: Energy - DSGS <dsgs@energy.ca.gov>
Cc: Carrillo, Deana@Energy <deana.carrillo@energy.ca.gov>; Emery, Ashley@Energy <Ashley.Emery@Energy.ca.gov>
Subject: Requesting Action to Reduce Energy Load Today through Thursday
Importance: High

EXTERNAL EMAIL
To: California Public and Water Agencies
From: CA Energy Commission, DSGS Program
Re: Requesting Action to Reduce Energy Load Today through Thursday

California and the Western United States are experiencing unprecedented temperatures. This heat wave is on track to be both the hottest and longest on record in California for September. California's State entities (Governor's Office, CEC, CPUC, CARB, OES and others) are working together during this extreme heat event in a coordinated effort to reduce demand using all the tools enabled under the governor's emergency proclamation.

We request that local public and water agencies take all steps possible to reduce maximum load possible from the electrical grid at their facilities from <u>today</u>, Monday, September 5th through Thursday, September 8th during an EEA (Energy Emergency Alert) Watch called by CAISO. This is typically called during the period of 4PM – 10PM, with a specific focus between 5PM – 8PM. CAISO has issued an EEA 1 Notice from 5:00 PM (17:00) through 9 (21:00) for today.

The CEC and CPUC have programs to compensate for emergency load reduction under the Demand Side Grid Support program (DSGS) and the Emergency Load Reduction Program (ELRP) respectively. While DSGS originally allowed for running back-up generation at an EEA2 only, due to the State of Emergency, they will be allowed to run and be compensated during an EEA watch or higher. The CAISO will call these events a day ahead in the afternoon.

The enrollment and compensation process for DSGS is being further streamlined to support timely enrollment of interested parties. During this emergency proclamation period, you will be enrolled in the program once you submit the **attached Application and Capacity Update**. By submitting this document to the **DSGS Program (dsgs@energy.ca.gov)** you are agreeing to the terms below and will be enrolled in the program.

Terms and conditions:

- Load reduction compensated under this program is not enrolled in a similar program and will not be receiving compensation from other programs.
- The Applicant agrees with the standard terms and conditions outlined in Chapter 6 of the DSGS Program Guidelines. For terms that conflict, the terms expressed in this document control.
- The CEC will make payment at $250 per MWh for standby and an additional $2,000 per MWh for load dispatched upon receipt of an invoice package that demonstrates the verified standby or load reduction provided during an EEA Watch, EEA 1, EEA 2 or EEA 3, as outlined in the DSGS Guidelines or subsequent advisories.
- The baseline for load reduction will be calculated by comparing load over a comparable period. Participants agree to provide appropriate records for verification.
- STD 204 must be submitted for payment.
- Air Quality Reporting: By October 10th provide the CEC the following information regarding any backup generation used to provide standby power or displace load on the electrical grid during a September 2022 DSGS program event:

• The address or GPS coordinates where such backup generation occurred.

• Information on whether the backup generation is portable or stationary.

• The engine size, age, rated horsepower, and federal emissions tier for each generator dispatched under the program.

• The type and amount of fuel used by each generator dispatched under the program.

• The hours of operation of each generator dispatched under the program.

Thank you for supporting the broader state efforts during these extenuating circumstances. We're working together to bend the curve. More comprehensive information about DSGS can be found on our website.

Please submit your application to: dsgs@energy.ca.gov

For questions or more information, please contact: Ashley.emery@energy.ca.gov (Branch Manager) or 916-980-7978
Deana.carrillo@energy.ca.gov (Division Director) or 916-776-0613

The most recent executive order related to this extreme heat event allows for back-up generators to be used at an EEA Watch. For ease of reference, please find links to regional AQMD notices, although they might not be the most current.

- San Joaquin Valley https://ww2.valleyair.org/media/fcairo1g/extreme-heat-event-and-governors-proclamation-220831.pdf
- Sacramento – http://www.airquality.org/About-Us/News-Notices/News-Notices-Details?UniqueID=%7b7B5754FB-7E9D-455E-A9D9-908D39D76225%7d and http://www.airquality.org/about-us/news-notices/news-notices-details?UniqueID=%7B8E7A4306-CE09-445D-A841-6623F40ADBDE%7D
- San Diego - https://www.sdapcd.org/content/sdapcd/alerts/grid-alert-advisory.html
- Santa Barbara - https://www.ourair.org/wp-content/uploads/2022-09-Heat-Wave-Notice.pdf
- Feather River - https://www.fraqmd.org/proclamation-of-a-state-of-emergency-electricity-reliability

Deana Carrillo (she/her)

Director, Renewable Energy Division
California Energy Commission
https://www.energy.ca.gov/
direct: 916-776-0613

1

Attachment 1-3 B

Email From CEC-DSGS to Susana Nasserie (Cal Advocates)

From: CEC Demand Side Grid Support Program Support <dsgs-support@olivineinc.com>
Sent: Tuesday, December 5, 2023 4:46 AM
To: Nasserie, Susana <susana.nasserie@cpuc.ca.gov>
Subject: [EXTERNAL] Re:[## 12102 ##] Calling about Generator Specifications

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello Susana,

Our replies to your questions are in blue. We have referenced the 2023 DSGS Program Guidelines which can be downloaded by going to this page and scrolling down to docketed documents section (the first link). Our FAQs also have the answers to a lot of common questions regarding the different incentive options.

1. Please see the attached email under the term and condition DSGS states: “The CEC will make payment at $250 per MWh for standby and an additional $2,000 per MWh for load dispatched upon receipt of an invoice package that demonstrates the verified standby or load reduction provided during an EEA Watch, EEA 1, EEA 2 or EEA 3, as outlined in the DSGS Guidelines or subsequent advisories.”
   Please explain the meaning of “standby”? and if available, please provide me with reference regarding the standby term.

   The term "standby," as used in the 2023 DSGS Guidelines, refers to a standby payment that is available for Option 1 participants with combustion resources. In response to a standby event notification, participants/providers with combustion resources can provide a standby commitment of how much load reduction they have available. Even if the participant's combustion resources are not dispatched, the participant can earn a standby. Reference Chapter 3, Section F of the 2023 DSGS Guidelines for more details.

2. During extreme heat events or climate change issues such as the governor's emergency proclamation:

a. Please explain whether or not each water utility in California must use all of its available generator(s) to reduce electricity usage from the grid.

If available, please provide the reference or a website URL link.

No, there are no requirements that participants must use all of their available generator(s) if permitted.

b. Please explain whether DSGS has a target for each water utility to reduce electricity usage from the grid and how DSGS determines the target for each water utility.

If available, please provide the reference or a website URL link.

The DSGS program team does not set load reduction targets for any participants. Participants are asked to provide an estimated load reduction capacity at the point of enrollment, but there are no penalties for not meeting this capacity estimation.

c. Please explain whether water utilities can rent portable generator(s) to reduce electricity usage from the grid.
If available, please provide the reference or a website URL link.

The use of any combustion resource for the purposes of load reduction is only permissible in the case of an EEA 2 or 3 with a Governor's Emergency Proclamation in effect, unless the Governor's Emergency Proclamation explicitly allows use of combustion resources at a lower EEA level (i.e. EEA 1, Watch). DSGS does not have requirements or regulations around how participants acquire generators.

3. Does the CEC-DSGS have policies or regulations requiring water utilities *to install* their facilities (water treatment plant, booster station, etc.) with stationary generators or portable generators to conserve electricity due to the strain on the electrical grid caused by the heat wave event or other climate change issues?
If available, please provide references of the policies or regulations or website link.

There are no DSGS policies and regulations requiring the installation of generators.

4. Does the CEC-DSGS provide grants or incentives for water utilities to purchase stationary generators or portable generators that enable water utilities to conserve electricity due to the strain on the electrical grid caused by the heat wave event or other climate change issues?
If available, please provide the information or website link.

DSGS does not provide grants or incentives for the purchasing of generators for the purposes of participating in the DSGS program. We will check internally if there are any other applicable grant opportunities.

Attachment 1-3.C

Email From California ISO to Susana Nasserie (Cal Advocates)

Subject: Case # 00267142

[EXTERNAL] Case #00267142 has been resolved [Case Thread ref:_00DA0Hr5P._5008Z2Ginwp:ref]

CC noreply@salesforce.com on behalf of CIDI Case Replies <cidireplies@caiso.

To Nasserie, Susana

Reply | Reply All | Forward

Tue 9/26/2023 8:56 AM

Follow up. Start by Thursday, November 9, 2023. Due by Thursday, November 9, 2023.
You forwarded this message on 11/9/2023 2:45 PM.
If there are problems with how this message is displayed, click here to view it in a web browser.

Resolution:
Hello Susana,

Thank you for your inquiry. Please see our answers to your questions below:
Does Caiso have policies or regulations requiring water utilities to install their facilities (water treatment plant, booster station, etc.) with stationary generators or portable generators to conserve electricity due to the strain on the electrical grid caused by the heat wave event or other climate change issues?
If available, please provide me with the references of the policies or regulations or website link.

No – CAISO does not have such policies or regulations.

Does Caiso provide grants or incentives for water utilities to purchase stationary generators or portable generators that enable water utilities to conserve electricity due to the strain on the electrical grid caused by the heat wave event or other climate change issues?
If available, please provide me with the information or website link.

No – CAISO does not provide grants or incentives.

If you have further questions, please submit a new inquiry utilizing the contact us form here:
https://www.caiso.com/Pages/ContactUs.aspx

Best Regards,
California ISO

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Attachment 1-4

GSWC's response to DR SN2-002, including selected attachments:

1) Question 1.a.
2) Question 1.d.
3) Question 2.a.

Golden State Water Company
A Subsidiary of American States Water Company

August 7, 2023

Susana Nasserie, Public Advocates Office
CALIFORNIA PUBLIC UTILITIES COMMISSION
505 Van Ness Avenue
San Francisco, CA 94102

Subject: Data Request SN2-002 (A.23-XX-0XX) Plant Generators
Extended Due Date: August 7, 2023

Dear Susana Nasserie,

In response to the above referenced data request number, we are pleased to submit the following responses:

Question 1:
Please refer to Golden State Testimony's Gisler, Insco - Vol 1 Capital Testimony: *Folsom South Canal Plant, Install Backup Generator* for $1,018,900 (Cordova). It states that GSWC should install a backup generator at the Folsom South Canal Plant Site to address power outages that could affect water supply. Respond to the following questions:

a. For the last 10 years (June 2013- May 2023), please provide records of the power outages at Folsom South Canal Plant, including information such as date, time, duration of power outages (hours), explain reasons for the power outage, explain how the impact of power outage issue on the water supply was resolved at the time, also identify the name and capacity(s) of other supply sources if any were used during the power outages. (Please fill out the attached Ms. Excel sheet: *Attachment(SN2-002)-Q1, Tab: Q1a*).

b. Provide the name of the electricity provider for the Folsom South Canal Plant.

c. Has Golden State purchased mobile generator(s) for its operations in Arden Cordova RMA?
   - If yes, for each mobile generator, provide the mobile generator ID, mobile generator brand name/model, size (kW), designated location/station name, fuel type, purchased date, and purchase cost.
     - For each mobile generator identified above, provide records of the generator usage for the last 10 years (June 2013 – May 2023), include information such as date, time, duration, site location and explain reasons why the generation was used. (Please fill out the attached Ms. Excel sheet: *Attachment (SN2-002)-Q1, Tab: Q1c*).

d. Has Golden State rented or leased a mobile generator to address power outages in Arden Cordova RMA?
   - If yes, for each rented/leased mobile generator in the last 10 years (June 2013 – May 2023), provide the generator ID, brand name/model, capacity/size (kW), rental/lease company name, duration of the rental/lease, rent/cost per day.
     a. For each mobile generator identified above, provide records of the generator usage for the last 10 years (June 2013 – May 2023), include information such as date, time, duration, location and explain reasons why the generation was used. (Please fill out the attached Ms. Excel sheet: *Attachment (SN2-002)-Q1, Tab: Q1d*).
     b. For each mobile generator identified above, provide a copy of the rental/lease agreement.
   - If not, explain why Golden State has not rented/leased a mobile generator during power outages.

e. Golden State Testimony's Gisler, Insco - Vol 1 Capital Testimony, states that the installation of backup power generation capacity at the Folsom South Canal Plant and the Pyrites Water Treatment Plant (WTP) would provide an additional 3,500 gallon per minute (gpm) of direct water supply to the Cordova system.
   - Provide calculations to derive the additional 3,500 gpm water supply to the system in Ms. Excel format. Include supporting documentation

but not limited to internal planning documents and communications, engineering reports, consultant reports.

f. Golden State's workpapers: *PCE_RI - Cordova (Folsom South Canal Plant, Install Back-up Generator)* tab: *Estimate Creator*, cell: J190, Golden State proposes installing an emergency generator based on a generator with a capacity of 450kWatt. Does Golden State request the same generator size?
   - If yes, please provide calculations to derive the generator capacity of 450kW in Ms. Excel format. Include supporting documentation but not limited to internal planning documents and communications, engineering reports, consultant reports.
   - If not, identify the proposed capacity and provide calculations to derive the generator capacity in Ms. Excel format.

g. Golden State's workpapers: *PCE_RI - Cordova (Folsom South Canal Plant, Install Back-up Generator)* tab: *Estimate Creator*, cell: C190, Golden State proposes installing an emergency diesel generator.
   - Please identify whether Golden State proposes a permanent generator, or a mobile/portable generator.

h. Golden State's workpapers: *PCE_RI - Cordova (Folsom South Canal Plant, Install Back-up Generator)* tab: *Estimate Creator*, cell: C190, Golden State proposes emergency diesel generator. However, in cell: C516, Golden State requests propane facilities.
   - Please explain the reasons to propose propane facilities for this emergency diesel generator project.

i. Golden State's Cordova System Water Master Plan, FIGURE 2-2: Cordova System Schematic (10/25/2022), Golden State includes a diagram of 5 boosters: A, B, C, D and E at Folsom South Canal Plant.
   - For each booster, identify the booster's name and the associated capacity in gpm.

Response 1:

a. Please see attached 10 Year History Folsom South Canal. The Cordova System has facilities that could provide supply during power outages: Mather Well #18 (1,800 gpm capacity) and South Bridge Street Well #22B (2,800 gpm capacity) are equipped with generators, and the Carmichael Water District (CWD) Interconnection has a capacity of 3,125 gpm. However, the CWD interconnection cannot be assumed a reliable source during a widespread power outage, as CWD may be impacted similarly to GSWC. In order to utilize GSWC's surface water rights and increase available supply to the Cordova

System during power outages, the Folsom South Canal and Pyrites WTP need to be able to function concurrently; having both plants available during a power outage allows GSWC to optimize surface water rights and utilize the investment in the infrastructure and the treatment plant.
b. The electricity provider for the Folsom South Canal Plant is Sacramento Municipal Utility District.
c. No.
d. Yes. Please see attached SUNBELTRENTALINC Invoice where a mobile generator was rented/leased during a power outage.
e. 3,500 gpm is the capacity of the Pyrites WTP.
f. The generator will be sized to run two pumps simultaneously to provide sufficient raw water to optimize the Pyrites WTP capacity during a power outage. The Planning high-level analysis assumes the motor hp is roughly equal to the generator kW (rule of thumb). Each motor is 75 hp. Therefore, kW=75x2=150. A detailed analysis will be completed during the design phase of the project and it is likely that a 200 kW generator or larger will be proposed to account for increased load at startup. In the cost estimating tool prepared for GSWC by DCW (i.e. the PCE Excel workbooks provided with the filing), representative items were included with associated costs. The cost estimating tool is for high-level cost preparation, Engineering Planning Department (EDP) has ‘small’ and ‘large’ generators included in the tool. In developing the individual PCEs, which are high-level estimates, the items nearest to what may be needed in the field were chosen.
g. GSWC proposes a permanent generator.
h. The reference to a diesel generator was incorrectly stated in testimony and the PCE. This generator will be a propane generator. The PCE and Testimony have been updated for the final application.
i. Folsom Canal Plant Booster Pumps

Facility	**Capacity (gpm)**
Folsom Canal Turnout Booster A	2,360
Folsom Canal Turnout Booster B	2,360
Folsom Canal Turnout Booster C	2,360
Folsom Canal Turnout Booster D	2,360
Folsom Canal Turnout Booster E	2,360

Question 2:
Please refer to Golden State Testimony’s Gisler, Insco - Vol 1 Capital Testimony: ***Pyrites WTP, Install Backup Generator*** for $809,900 (Cordova). It states that GSWC should install

a backup generator at the Pyrites Plant site to address power outages that could affect water supply. Respond to the following questions:

a. For the last 10 years (June 2013- May 2023) please provide records of the power outages at Pyrites Plant, including information such as date, time, duration of power outages (hours), explain reasons for the power outage, explain how the impact of power outage issue on the water supply was resolved at the time, also identify the name and capacity(s) of other supply sources if any were used during the power outages. (Please fill out the attached Ms. Excel sheet: Attachment (SN2-002)-Q2, Tab: Q2a).

b. Provide the name of the electricity provider for the Pyrites Plant.

c. Golden State's workpapers: *PCE_RI - Cordova (Pyrites WTP, Install Back-up Generator)* tab: *Estimate Creator*, cell: J190, Golden State proposes installing an emergency generator based on generator with capacity of 450kWatt. Does Golden State request the same generator size?

- If yes, please provide calculations to derive the generator capacity of 450kW in Ms. Excel format.
- If not, identify the proposed capacity and provide calculations to derive the generator capacity in Ms. Excel format.

d. Golden State's workpapers: *PCE_RI - Cordova (Pyrites WTP, Install Back-up Generator)* tab: *Estimate Creator*, cell: C190, Golden State proposes installing an emergency diesel generator.

- Please identify whether Golden State proposes a permanent generator, or a mobile/portable generator.

e. Golden State's Cordova System Water Master Plan, FIGURE 2-2: Cordova System Schematic (10/25/2022), Golden State includes a diagram of 3 boosters: A, B, and C, at Pyrites Treatment Facility (Pyrites WTP).

- For each booster, identify the booster's name and the associated capacity in gpm.

f. Golden State's Cordova System Water Master Plan, FIGURE 2-2: Cordova System Schematic (10/25/2022), Golden State includes a diagram of 5 boosters: 1, 2, 3, 4 and 5 at Coloma WTP.

- For each booster, identify the booster's name and the associated capacity in gpm.

Response 2:

a. Please see attached 10 Year History Coloma Pyrites WTP. The Cordova System has facilities that could provide supply during power outages: Mather Well #18 (1,800 gpm capacity) and South Bridge Street Well #22B (2,800 gpm capacity) are equipped with generators, and the Carmichael Water District (CWD) Interconnection has a capacity of 3,125 gpm. However, the CWD interconnection cannot be assumed a reliable source during a widespread power outage, as CWD may be impacted similarly to GSWC. In order to utilize GSWC's surface water rights and increase available supply to the Cordova System during power outages, the Folsom South Canal and Pyrites WTP need to be able to function concurrently; having both plants available during a power outage allows GSWC to optimize surface water rights and utilize the investment in the infrastructure and the treatment plant.

b. The electricity provider for the Pyrites Plant is Sacramento Municipal Utility District.

c. The generator will be sized to run two pumps simultaneously to optimize the Pyrites WTP capacity during a power outage. The Planning high-level analysis assumes the motor hp is roughly equal to the generator kW (rule of thumb). Each motor is 30 hp. Therefore, kW=30x2=60. A detailed analysis will be completed during the design phase of the project and it is likely that a 100 kW generator or larger will be proposed to account for increase load at startup. In the cost estimating tool prepared for GSWC by DCW (i.e. the PCE Excel workbooks provided with the filing), representative items were included with associated costs. The cost estimating tool is for high-level cost preparation, EPD has 'small' and 'large' generators included in the tool. In developing the individual PCEs, which are high-level estimates, the items nearest to what may be needed in the field were chosen.

d. GSWC proposes a permanent generator.

e. Pyrites WTP Booster Pumps

Facility	Capacity (gpm)
Pyrites Booster A	1,800
Pyrites Booster B	1,800
Pyrites Booster C	1,800

f. Coloma WTP Booster Pumps

Facility	Capacity (gpm)
Coloma Booster 1	3,000
Coloma Booster 2	2,000
Coloma Booster 3	2,000

Coloma Booster 4	2,000
Coloma Booster 5	2,000

END OF RESPONSE

Question 1.a: attachment '10 Year History Folsom South Canal.'

Nasserie, Susana

From:	Katie Worth <Katie.Worth@smud.org>
Sent:	Tuesday, July 11, 2023 5:53 PM
To:	Twilla, Sean
Subject:	10 year Outage History Meter 2517682

This Message Is From An External Sender

This message came from outside the company. Do not open any attachments unless you expected this message. Do not click links unless you are sure they are safe.

EXTERNAL EMAIL

Address: Folsom South	Meter #2517682	
Date	Duration of Outage	Reason of Outage
5/16/2014	0:00:04	Squirrel got into Disc and caused fire
2/6/2015	0:52	Lightening
4/7/2015	0:00:07	Damaged overhead equipment
8/10/2015	0:48	Primary Insulation Failure
12/5/2015	0:09	Squirrel into lightning arrestors
12/14/2015	0:03	Vehicle Accident
1/19/2016	0:00:19	Wind
9/30/2016	1:10	Tree Fell
12/15/2016	0:00:01	Tree outage
1/7/2017	0:47	Tree fell
3/6/2017	0:38	Switch Outage
6/24/2017	5:36	Planned Outage to fix line arm
1/6/2019	0:03	Tree Outage
3/2/2020	0:47	Damaged Equipment
3/7/2021	0:00:03	Feeder Outage
8/21/2021	0:51	Vehicle Accident
10/25/2021	0:29	Emergency Shut Down Vehicle Accident
12/15/2021	1:11	Broken Cross Arm
6/17/2022	10:01	Planned Maintenance
11/12/2022	0:00:01	No Cause Found
5/14/2023	0:00:01	Feeder Outage

There was not outage in 2013.

Kind Regards,

Katie Worth *Safe Zone Advocate*
Strategic Account Advisor, Customer Experience Delivery
w.916-732-4914 | c. 916-208-5644 | Katie.Worth@SMUD.org

We're committed to 100% zero carbon by 2030 | Join the charge at CleanPowerCity.org

SMUD | Powering forward. Together.
6201 S Street, Mail Stop A102, Sacramento, CA 95817
P.O. Box 15830, Sacramento, CA 95852-0830

Question 1.d: attachment 'SUNBELTRENTALSINC Invoice': one day rental of a portable generator (250kW) *(See Invoice Total for $1,716.39)*

SUNBELT RENTALS

INVOICE

SEND ALL PAYMENTS TO:

SUNBELT RENTALS, INC.
PO BOX 409211
ATLANTA, GA 30384-9211

INVOICE NO.	127215227-0001
ACCOUNT NO.	495785
INVOICE DATE	6/22/22
PAGE	1 of 1

INVOICE TO

1oz - 89 - 97
GOLDEN STATE WATER COMPANY
630 E FOOTHILLD BLVD
SAN DIMAS, CA 91773

JOB ADDRESS
SMUD JOB - RANCHO CORDOVA
2756 SUNRISE BLVD
RANCHO CORDOVA, CA 95742 6227

916-825-7478

RECEIVED BY: YOUNG, TIMOTHY
CONTRACT NO.: 127215227
PURCHASE ORDER NO.: 7028195-SP
JOB NO.: 1 - SMUD JOB - RANCH
BRANCH:
SACRAMENTO POWER & HVAC PC0216
4635 POWER INN RD
SACRAMENTO, CA 95826 4346
916-210-8282

QTY	EQUIPMENT #	Min	Day	Week	4 Week	Amount
1.00	250KW DIESEL GENERATOR	985.00	985.00	2975.00	6740.00	493.00
	474467 Make: MQ POWER Model: DCA300SSCUCSG Ser #: 9100296					
	HR OUT: 476.600 HR IN: 485.100 TOTAL: 8.500					
	Billed from 6/16/22 thru 6/17/22					
	#480V 3PH					
	SINGLE SHIFT RATES 0-8 HOURS RUNTIME/DAY					
	PM SERVICE EVERY 300 RUNTIME HOURS $875					
5.00	4/0 CAMLOCK CABLE 50'	25.00	25.00	50.00	125.00	125.00
5.00	4/0 MALE PIG TAIL	5.00	5.00	15.00	35.00	25.00
			Rental Sub-total:			643.00

SALES ITEMS:

Qty	Item number	Unit	Price	Amount
1	CAHERS1	EA	4.830	4.83
	CA .75% HEAVY EQUIP. RENTAL TAX			
1	DLPKSRCHG	EA	162.150	162.15
	TRANSPORTATION SURCHARGE			
1	ENVIRONMENTAL	EA	9.610	9.61
	ENVIRONMENTAL/HAZMAT FEE 2133XXX0000			
1	RENTAL PROTECTION PLAN	EA		96.45
	DELIVERY CHARGE			345.00

SALES ITEMS:

Qty	Item number	Unit	Price	Amount
	PICKUP CHARGE			345.00

FINAL BILL: 6/16/22 02:00 PM THRU 6/17/22 12:00 PM.

Equipment ... Guaranteed.

SUBTOTAL	1,606.04
TAX	110.35
INVOICE TOTAL	1,716.39

REMIT TO:

SUNBELT RENTALS, INC.
PO BOX 409211
ATLANTA, GA 30384-9211

NET 30
Invoices not paid within 30 days may be subject to a 1-½% per month charge.

CHRISTYN SNOW christyn.snow@sunbeltrentals.com

RENTAL RETURN

Question 2.a: attachment '10 Year History Coloma Pyrites WTP'

Nasserie, Susana

From:	Katie Worth <Katie.Worth@smud.org>
Sent:	Tuesday, July 11, 2023 5:33 PM
To:	Twilla, Sean
Subject:	RE: 11200 Coloma 10 Year History

This Message Is From An External Sender

This message came from outside the company. Do not open any attachments unless you expected this message. Do not click links unless you are sure they are safe.

EXTERNAL EMAIL

Fixed Error - 4/7/2015 0:00:07 Momentary Outage during lightening storm

From: Katie Worth
Sent: Tuesday, July 11, 2023 5:15 PM
To: seantwilla@gswater.com
Subject: 11200 Coloma 10 Year History

Address: 11200 Coloma Rd	Meter #2727421	
Date	Duration of Outage	Reason of Outage
6/11/2014	0:01	Feeder Outage
2/6/2015	0:52	Fault on the Primary line
4/7/2015	12:00:07	Momentary Outage during lightning storm
12/5/2015	0:09	Animal caused outage
12/14/2015	0:03	Car related outage, vehicle clipped phone lines and slapped 69kV lines together
1/19/2016	0:00:01	High winds and rain
9/30/2016	1:10	Tree Related Outage
12/15/2016	0:00:01	Feeder Outage
3/6/2017	0:38	Switch Outage
1/6/2019	0:03	Tree Related Outage
11/26/2019	0:00:01	Momentary Relay Outage
6/24/2020	0:00:05	Feeder Outage
10/19/2020	0:08	Equipment Damaged by car
10/30/2020	0:00:06	Damaged Equipment by Car
11/4/2020	0:17	Problem with the underground cable
11/6/2020	0:14	Problem with the underground cable
1/26/2021	1:20	Tree Related Outage
6/26/2021	0:26	Damaged Equipment by bird
2/6/2022	0:03	Equipment Damaged by car
4/12/2022	0:23	Damaged Equipment
5/24/2022	0:06	Problem with underground cable
2/24/2023	0:14	Switch Outage

1

2/24/2023	0:02	Feeder Outage
2/24/2023	0:04	Feeder Outage
2/24/2023	0:04	Feeder Outage
2/24/2023	0:02	No definitive cause found

There was no outage in 2013, that is why there is nothing above.

Kind Regards,

Katie Worth *Safe Zone Advocate*
Strategic Account Advisor, Customer Experience Delivery
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Upcoming out of office:
Friday July 21st, 2023 until November 2023

Attachment 1-5

GSWC's response to DR SN2-004

Golden State
Water Company
A Subsidiary of American States Water Company

August 14, 2023

Susana Nasserie, Public Advocates Office
CALIFORNIA PUBLIC UTILITIES COMMISSION
505 Van Ness Avenue
San Francisco, CA 94102

Subject: Data Request SN2-004 (A.23-XX-0XX) Recoat Coloma Reservoir No 4
Due Date: August 7, 2023 Extension Due Date: August 21, 2023

Dear Susana Nasserie,

In response to the above referenced data request number, we are pleased to submit the following responses:

Coloma Reservoir No. 4 (Cordova System)
Referring to GSWC response to DR SN2-001, GSWC provided a field report: "Golden State Water Field Report February 19, 2015, Underwater Inspection 5,000,000 gallon Tank #4," by Potable Divers Inc (PDI). The recommendations are shown in Figure 1:

Figure 1. Field Report Recommendation by PDI (February 2015) for
The following recommendations are made to provide continued, uninterrupted service of your water storage tank: 1 Your tank should be inspected and cleaned every five years, as suggested by the AWWA. Routine inspections and cleanings provide ample time to perform remedial repairs to abnormalities discovered before having a chance to become problematic. 2 The coating on the interior roof is failing. The edges of the trusses have substantial corrosion and the trusses are losing integrity. The welds, seams, and overlapping plates all have corrosion along them with coating that is cracking. 3 The roof entry hatch needs to have a gasket put in place to minimize the corrosion and create a good seal. 4 The center roof vent needs new clamps to secure the screen as both are broken.

Question 1:
Recommendation No.1 (see Figure 1) indicates that per the AWWA, the tank should be inspected and cleaned every five years.

a. Provide all the underwater cleaning and inspection reports since the tank was built in 2002.

Response 1:

a. GSWC provided all available underwater cleaning and inspection reports in GSWC's response to Data Request SN2-001.

Question 2:
Recommendation No.2 identified several issues, as shown in Figure 1. Did GSWC follow PDI's recommendations to remedy the issues stated above?

a. If yes, explain all corrective measures that GSWC has completed following this field report. And provide all supporting documentation.
b. If not, explain the reasons for not taking corrective measures.

Response 2:

a. No corrective measures were taken in direct response to this report.
b. A standard dive report does not provide sufficient detail for cost estimating, GRC testimony preparation, project design, and construction management purposes. Standard dive reports provide visual inspection results of the tank and fixtures, and high-level recommendations to address any noted deficiencies.

Question 3:
Recommendation No. 3. identified an issue, as shown in Figure 1. Did GSWC follow PDI's recommendations to remedy the issue stated above?

a. If yes, explain all corrective measures that GSWC has completed following this field report. And provide all supporting documentation.
b. If not, explain the reasons for not taking the corrective measures.

Response 3:

a. A gasket was installed on the roof entry hatch. No supporting documentation is available for this work.
b. N/A.

Question 4:
Recommendation No. 4. identified an issue, as shown in Figure 1. Did GSWC follow PDI's recommendations to remedy the issue stated above?

a. If yes, explain all corrective measures that GSWC has completed following this field report. And provide all supporting documentation.
b. If not, explain the reasons for not taking the corrective measures.

Response 4:

a. Clamps were installed on the center roof vent. No supporting documentation is available for this work.
b. N/A.

Referring to GSWC's response to DR SN2-001, GSWC provided a field report: "Golden State Water Field Report April 28, 2021, Underwater Cleaning and Inspection 5,000,000 gallon Tank #4," by PDI. The recommendations are shown in Figure 2:

Figure 2. Field Report Recommendation by PDI (April 2021) for
The following recommendations are made to provide continued, uninterrupted service of your water storage tank: 1 Your tank should be inspected and cleaned every five years, as suggested by the AWWA. Routine inspections and cleanings provide ample time to perform remedial repairs to abnormalities discovered before having a chance to become problematic. 2 The coating on the interior roof is failing. The edges of the trusses have substantial corrosion and the trusses are losing integrity. The welds, seams, and overlapping plates all have corrosion along them with coating that is cracking. 3 The center roof vent needs the edges of the screen sealed. Note: During the cleaning small amounts of rust were removed from the floor coming from the edges of the trusses. Corrosion is causing integrity loss on the trusses, sine the last inspection the corrosion has increased about 5% totaling around 15 % of the trusses being covered in corrosion.

Question 5:

Recommendation No. 2 identified several issues, as shown in Figure 2. Did GSWC follow PDI's recommendations to remedy the issues stated above?

a. If yes, explain all corrective measures that GSWC has completed following this field report. And provide all supporting documentation.
b. If not, explain the reasons for not taking the corrective measures.
c. The 2021 report recommendation remains the same as identified in the 2015 report's recommendation No.2. Explain why the 2021 report was still listing the same issues.

Response 5:

a. No corrective measures were taken in direct response to this report.
b. A standard dive report does not provide sufficient detail for cost estimating, GRC testimony preparation, project design, and construction management purposes. Standard dive reports provide visual inspection results of the tank and fixtures, and high-level recommendations to address any noted deficiencies.

c. No corrective measures were taken in direct response to the 2015 report.

Question 6:
Recommendation No. 3 identified an issue, as shown in Figure 2. Did GSWC follow PDI's recommendations to remedy the issue stated above?

a. If yes, explain all corrective measures that GSWC has completed following this field report. And provide all supporting documentation.
b. If not, explain the reasons for not taking the corrective measures.

Response 6:

a. A sealant was applied to the edges of the roof vent screen. No supporting documentation is available for this work.
b. N/A.

Question 7:
In the "Note" (Figure 2): PDI indicates that since the last inspection, the corrosion had increased by about 5%, totaling around 15% of the trusses covered in corrosion.

a. Identify and explain all corrective measures to remediate the corrosion of 15% on the trusses.
b. Provide all supporting documentation for each corrective measure stated in item 7(a) above.
c. Explain reasons if no corrective measures were taken.
d. Explain under what corrosion level (in %) GSWC determines that the trusses need remediation.
e. Provide the basis for how GSWC developed the corrosion level which requires remediation as indicated in item 7(d), including all supporting documentation.

Response 7:

a. No corrective measures were taken.
b. No corrective measures were taken.
c. A standard dive report does not provide sufficient detail for cost estimating, GRC testimony preparation, project design, and construction management purposes. Standard dive reports provide visual inspection results of the tank and fixtures, and high-level recommendations to address any noted deficiencies.
d. GSWC does not determine the corrosion level at which the trusses need remediation. The recommendation would come from a consultant's full inspection report.
e. GSWC did not develop a corrosion level, which requires remediation. The recommendation would come from a consultant's full inspection report.

Question 8:
April 2021 PDI's report recommendation No. 1 (Figure 2) shows that the tank should be inspected and cleaned every five years. In the meantime, Golden State Testimony's "Gisler, Insco - Vol 4 of 13, Attachments AC01" includes the Harper & Associates

Engineering, Inc. (HAE) corrosion report for the same tank that was performed in August 2022.

a. Explain why GSWC performed two inspections within 2 years?

Response 8:

a. The April 2021 PDI's report is a standard dive report. The August 2022 HAE corrosion report is a full inspection report. A standard dive report does not provide sufficient detail for cost estimating, GRC testimony preparation, project design, and construction management purposes. Standard dive reports provide visual inspection results of the tank and fixtures, and high-level recommendations to address any noted deficiencies. Full inspection reports – including evaluation of corrosion/safety and seismic/structural conditions – serve as a better resource for successfully defining, estimating and supporting these tank projects, both from a cost and scope perspective. Full inspection reports prepared by a licensed structural engineer include a corrosion evaluation, a structural evaluation, and a detailed cost estimate to address noted deficiencies.

Referring to GSWC's response to DR SN2-001, GSWC provided a "Tank Management Program Guidelines Document," by GSWC. Please answer the following questions:

Question 9:
On page 9, GSWC states: "Corrosion reports shall be completed at least once every five years. If the tank contains anodes for a cathodic protection system, the anodes shall be evaluated." Has GSWC completed a corrosion report every five years?

a. If yes, identify the date of the reports and provide complete copies of all corrosion reports.
b. If not, explain why the corrosion reports have not been completed every five years.

Response 9:

a. No.
b. The Tank Management Program (TMP) was initiated in 2019.

Question 10:
On page 10, GSWC states: "Structural and Seismic Reports shall be performed before major tank rehabilitation work (e.g., recoat). These reports may also be performed sooner based on observations in the tank inspections procured by Operations." Has GSWC completed a Structural and Seismic report before proposing the Coloma reservoir no. 4 recoating work in this GRC?

a. If yes, provide the Structural and Seismic reports.
b. If not, explain the reasons why the Structural and Seismic report has not been completed before proposing this recoating project.

Response 10:

a. No.

b. Structural and Seismic inspection is not typically needed as frequently as corrosion inspection. However, if severe corrosion is noted, that will trigger GSWC to pursue an additional evaluation prior to performing the recoating work.

END OF RESPONSE

Attachment 1-6

GSWC's response to DR SN2-006

Golden State Water Company
A Subsidiary of American States Water Company

September 6, 2023

Susana Nasserie, Public Advocates Office
CALIFORNIA PUBLIC UTILITIES COMMISSION
505 Van Ness Avenue
San Francisco, CA 94102

Subject: Data Request SN2-006 (A.23-08-010) Generator Follow Up
Due Date (Revised): September 6, 2023

Dear Susana Nasserie,

In response to the above referenced data request number, we are pleased to submit the following responses:

Install Two Backup Generators (Cordova System) for $1.828M.

Referring to GSWC's response to DR SN2-002 Question.1.a, GSWC states:

"*The Cordova System has facilities that could provide supply during power outages: Mather Well #18 (1,800 gpm capacity) and South Bridge Street Well #22B (2,800 gpm capacity) are equipped with generators, and the Carmichael Water District (CWD) Interconnection has a capacity of 3,125 gpm. However, the CWD interconnection cannot be assumed a reliable source during a widespread power outage, as CWD may be impacted similarly to GSWC. In order to utilize GSWC's surface water rights and increase available supply to the Cordova System during power outages, the Folsom South Canal and Pyrites WTP need to be able to function concurrently; having both plants available during a power outage allows GSWC to optimize surface water rights and utilize the investment in the infrastructure and the treatment plant.*"

Question 1:
For the last 10 years (June 2013 – May 2023), had GSWC experienced incidents of being unable to meet supply and storage capacity requirements for the Cordova East Zone due to power outages in Folsom South Canal and Pyrites Water Treatment Plants ("WTP")?

a. If yes, please provide records of each incident, including information such as date, time, duration, and explain corrective measures that GSWC has completed. Also, provide all supporting documentation.

Response 1:
GSWC did not experience large scale power outages during the last 10 years that prevented the utility from meeting supply requirements for the Cordova East Zone.

Question 2:
For the last 10 years (June 2013 – May 2023), had GSWC experienced incidents of being unable to meet supply and storage capacity requirements for the Cordova system due to power outages in Folsom South Canal and Pyrites Water Treatment Plants?

a. If yes, please provide records of each incident, including information such as date, time, duration, and explain corrective measures that GSWC has completed. Also, provide all supporting documentation.

Response 2:
GSWC did not experience large scale power outages during the last 10 years that prevented the utility from meeting supply requirements for the Cordova East Zone.

Question 3:
As shown above, GSWC indicates that CWS interconnection cannot be assumed a reliable source during a widespread power outage, as CWD may be impacted similarly to GSWC.

a. For the last 10 years (June 2013 – May 2023), please provide records of widespread power outages as indicated above, including information such as date, time, duration, and explain the reasons for the widespread power outages. Also, provide all supporting documentation.
b. Identify the name of CWD's facility or treatment plant which provides water to the Cordova system via CWD interconnection?
    i. Does the facility have backup generator(s)? If yes, provide information on the generator(s), such as capacity (kWH), and provide the amount of water that CWD can supply to GSWC by utilizing the generator(s) in gallon per minute (gpm) during widespread power outages.

Response 3:

a. See attached spreadsheet titled 'Q3-Widespread power outages'; the highlighted cells indicate dates that impacted two GSWC plant site locations over a mile from each other.
b. Bajamont Water Treatment Plant (BWTP) is the name of CWD's facility which provides water to the Cordova system via the CWD interconnection. BWTP has a

total nominal treatment capacity of 22 MGD. In the event of a power outage, their backup power supply limits BWTP production capacity to 10 MGD. The 10 MGD production capacity is required to meet CWD max day demands and does not allow for surplus treated water available for GSWC.

Question 4:
As shown above, GSWC indicates that to utilize GSWC's surface water rights and increase available supply to the Cordova System during power outages, the Folsom South Canal and Pyrites WTP need to be able to function concurrently; having both plants available during a power outage allows GSWC to optimize surface water rights and utilize the investment in the infrastructure and the treatment plant.

a. For the last 10 years (June 2013 – May 2023), please provide records where GSWC could not optimize the utilization of surface water rights due to power outages as stated above, including information such as date, time, duration, capacity of the water loss (cannot be pumped) during power outages. And provide all supporting documentation.
b. For the last 10 years (2013 – 2022), provide information of annual surface water rights in Cordova system, such as the total rights capacity, unused rights, unusable rights due to power outages in the system and unusable rights because of power outages in Folsom South Canal and Pyrites Water Treatment Plants, including all supporting documentation. Please fill out the table below with surface water rights information in Acre-Foot Year (AFY):

		Cordova System Surface Water Rights information (in AFY)			
No.	Year	Total Rights capacity	Unused Rights	Unused Rights due to Power Outages in Cordova system	Unused Rights due to Power Outages at the Folsom South Plant and Coloma Water Treatment Plant
1	2013				
2	2014				
3	2015				
4	2016				
S	2017				
6	2018				
7	2019				
8	2020				
9	2021				
10	2022				

c. Please provide a cost-benefit analysis comparing the additional revenue requirement resulting from the installation of proposed generators, which would allow "GSWC to optimize surface water rights and utilize the investment in the infrastructure and the treatment plant" and using GSWC's current infrastructure including emergency interconnections during a power outage.

i. Provide the analysis (in Excel format) with explanations of all assumptions, including all supporting documentation.
ii. If an analysis has not been completed, explain the reasons.

Response 4:

a. Records identifying when GSWC could not optimize the utilization of surface water rights due to power outages were not kept.
b. Records identifying when GSWC could not optimize the utilization of surface water rights due to power outages were not kept. Therefore, the table below cannot be completed as requested.

		Cordova System Surface Water Ri ght s in formati on (in AFY)			
No.	Year	Total Rights capacity	Unused Rights	Unused Rights due to Power Outages in Cordova system	Unused Rights due to Power Outages at the Folsom South Plant and Coloma Water Treatment Plant
1	2013	10000	525		
2	2014	5000	232		
3	2015	5000	1431		
4	2016	5000	933		
s	2017	5000	404		
6	2018	5000	6		
7	2019	5000	377		
8	2020	5000	53		
9	2021	5000	1071		
10	2022	5000	351		

c. This analysis was not completed by GSWC, as the driving factor for this project is not based on historical outage scenarios or revenue requirement, but due to the risk of extended electrical power outages in the future. As stated in GSWC's 2023 GRC Testimony[1], "Generators also allow GSWC to load shed and reduce the strain on the electrical grid, when requested by the California Independent System Operator (ISO). Generators are important to install at select supply and pumping facilities and will increase the reliability of the Cordova System to meet customer demands and increase the resiliency of the Cordova System to the negative consequences of climate change. During September of 2022, California experienced a historically long and record-breaking heat wave. A statewide emergency was declared by the

[1] Prepared Testimony of Ernest Gisler, Mark Insco, Megan McWilliams, Dan Flores and David Schickling Volume 1 of 13 page 41 line 16.

Governor of California. Through the California ISO a statewide flex alert was issued to request Californians to conserve electricity due to the strain on the electrical grid due to the unprecedented heat wave. GSWC operated its generators to load shed and reduce the strain on the electrical grid in the Cordova System."

Question 5:
GSWC's response to DR SN2-002 Question.1.g and Question.2.h identify that GSWC proposes two permanent propane generators for Pyrites WTP and Folsom South Canal, including a propane facility in Folsom South Canal.

a. Explain why GSWC proposes to install propane generator(s) instead of diesel generator(s).
b. Should GSWC select to install diesel generator(s), explain whether GSWC needs to construct a diesel facility.
c. Explain how GSWC plans to manage the safety of the propane facility during fire incidents/occurrences.
d. Please provide GSWC's cost-benefit analysis comparing the additional revenue requirement from installing proposed propane generators, including the propane facility vs. diesel generators in the Folsom South Canal and Pyrites Water Treatment Plants.
    i. Provide the analysis (in Excel format) with explanations of all assumptions (such as generator size), including all supporting documentation.
    ii. If an analysis has not been completed, explain the reasons.

Response 5:

a. GSWC's response to DR SN2-002 Question.1.h clarified that GSWC is proposing a propane generator at the Folsom South Canal plant. GSWC's 2023 GRC Testimony states that a diesel generator is proposed for the Pyrites WTP site. GSWC is proposing a propane generator for the Folsom South Canal plant because of the difficulty delivering diesel to this location and a natural gas line is not available.
b. For a diesel generator setup, the diesel is stored in a "belly" tank directly under the generator itself; no additional facilities are needed.
c. GSWC's Folsom South Canal plant site is comprised of concrete and gravel, and as such is naturally 'fire hardened'. GSWC will submit plans and seek approval from the local fire prevention regulator for the use of propane storage for generator fuel. Propane facilities would be installed in accordance with local fire prevention regulations and the same safety precautions as at other GSWC plant site locations (outdoors, at a safe distance from other equipment – at this location, the closest structure is over 300 feet away) and inspected/maintained regularly by GSWC staff to ensure that it is operating properly and not leaking. In the case of a fire incident, GSWC staff would contact 9-1-1, and would provide appropriate access to the site for the fire department personnel to extinguish the fire.

d. No life-cycle cost-benefit analysis was prepared because these facilities have a similar capital cost, similar fuel usage, and the cost of diesel is slightly higher than the cost of propane.

Question 6:
Please provide GSWC's cost-benefit analysis comparing the additional revenue requirement resulting from the installation of proposed generators and purchasing portable generators in the Folsom South Canal and Pyrites Water Treatment Plants.

a. Provide the analysis (in Excel format) with explanations of all assumptions (such as size of generator), including all supporting documentation.
b. If an analysis has not been completed, explain the reasons.

Response 6:

a. No analysis was completed because a stationary generator is similar cost to a similarly sized portable generator.
b. In addition, the cost is not the main reason why a stationary generator is proposed over a portable generator. Portable generators have CARB requirements that a portable generator must be moved every 12 months. Also, it does not allow the portable engine to reside in a location, where it will potentially be used, for more than 12 months. GSWC would have to store portable generators off site of the intended plant site and when an emergency occurs GSWC needs to hire transportation teams to move the portable generator to the plant site. This is a huge factor in our decision to install a stationary generator at Pyrites and Folsom because response time in an emergency situation is critical. Since Pyrites and Folsom are critical facilities to the Rancho Cordova system, we would want the plant site to be on instantaneously when we lose power.

Question 7:
GSWC's response to DR SN2-002 Question.1.g and Question.2.d, identify that GSWC proposes permanent generators for facilities in Pyrites WTP and Folsom South Canal. However, the Cordova Water Master Plan, December 2022, page 8-2 shows that GSWC Operations and Planning team recommends installing a portable generator for each facility.

a. GSWC is contradicting its own Master Plan. Explain why GSWC proposes to purchase a permanent generator instead of a portable generator.
    i. Provide all supporting documentation.
b. Provide information on how much it costs to purchase a portable generator in each facility.

Response 7:

a. Portable generators would technically suffice if seasonal demand conditions (as referenced in the Master Plan) were the only concern and the generators could always be located at the appropriate site. However, as referenced in the 2023 GRC Testimony and in Response 4.c, above, in September of 2022 (as the 2022 Master Plan was being compiled), California experienced a historically long and record-breaking heat wave, a statewide emergency was declared by the Governor of California, and through the California ISO a statewide flex alert was issued to request Californians to conserve electricity due to the strain on the electrical grid due to the unprecedented heat wave. Permanent generators will be positioned to help respond to issues such as this year-round; as also stated in the 2023 GRC Testimony, “Installing generators at key supply and pumping facilities will increase the reliability of the Cordova System to meet customer demands and increase the resiliency of the Cordova System to the negative consequences of climate change.”
b. The cost of portable generator would be similar in cost to a stationary generator as it would need to be the same size and capacity.

Question 8:

Has GSWC contacted neighboring Water Utilities or Electricity Utilities to discuss the possibility of borrowing or sharing portable generators as part of GSWC’s emergency response plan or other program(s)?

a. If yes, please explain the result of the discussion. Also, provide all supporting documentation.

b. If not, explain why GSWC does not consider the option to borrow/share portable generators from neighboring utilities.

Response 8:

GSWC has not considered the option to borrow/share portable generators from neighboring utilities, as this is not considered reliable – it is based on whether or not the neighboring water agency has a properly sized portable generator available during a power outage and/or they are using the generator to address their own needs as the result of a more widespread power outage.

END OF RESPONSE

Attachment 1-7

GSWC's response to DR SN2-012, including selected attachments:

1) Question 3.
2) Question 7.d.
3) Question 10.b

Golden State
Water Company
A Subsidiary of American States Water Company

November 22, 2023

To: Susan Nasserie, Public Advocates Office
CALIFORNIA PUBLIC UTILITIES COMMISSION
505 Van Ness Avenue
San Francisco, CA 94102

Subject: Data Request SN2-012 (A.23-08-010) Generator & Reservoirs Follow Up
Due Date: November 22, 2023

Dear Susan Nasserie,

In response to the above referenced data request number, we are pleased to submit the following responses:

Install two backup generators in Pyrites (Coloma WTP) and Folsom South Canal.

Question 1:
Please explain in detail whether GSWC is aware that Sacramento Municipal Utility District (SMUD) has portable generators that can be used by critical facilities such as GSWC during emergencies?

Response 1:
GSWC is not aware if SMUD has portable generators that can be used by GSWC during emergencies.

Question 2:
Has GSWC contacted Sacramento Municipal Utility District to discuss potential procedures or coordinated responses in the event of an emergency, for example, borrowing portable generators?

a) If yes, explain the results of the discussion, including all supporting documentation.
b) If not, explain why not.

Response 2:
GSWC has not considered the option to borrow portable generators from SMUD, as this is not considered reliable – it is based on whether or not SMUD has a properly sized portable generator available during a power outage and/or they are using the generator to address their own needs as the result of a more widespread emergency.

Question 3:
Please identify all available and operable permanent and portable generators in Arden, Cordova, and Robbins systems. Include information such as the generator identification, location, capacity (kW), permanent or portable generator, installation date, or purchase date.

Response 3:
See attachment 'SN2-012 Q3 - Generators'.

Question 4:
GSWC's Master Plan identifies that due to system demands issues during the summer months,[2] GSWC needs to install a portable generator in the Folsom South Canal plant:

a) Explain how GSWC resolved the demand issues for the past ten years without a backup generator.
b) For the past ten years, provide records of each incident where this facility was unable to meet its system demand and explain GSWC's approach to resolving each incident. Provide all supporting documentation including, but not limited to, engineering reports or internal company communications, including emails or memorandums.

Response 4:

a) GSWC did not experience a widespread power outage during summer demands during the last 10 years that prevented the utility from meeting supply requirements for the Cordova East Zone.
b) The driving factor for this project is not based on historical demand issues, but due to the risk of extended electrical power outages in the future. As referenced in the 2023 GRC Testimony and in SN2-006 Response 4.c and 7.a, "Generators also allow GSWC to load shed and reduce the strain on the electrical grid, when requested by the California Independent System Operator (ISO). Generators are important to install at select supply and pumping facilities and will increase the reliability of the Cordova System to meet customer demands and increase the resiliency of the Cordova System to the negative consequences of climate change. During September of 2022, California experienced a historically long and record-breaking heat wave. A statewide emergency was declared by the Governor of California. Through the California ISO a statewide flex alert was issued to request Californians to conserve electricity due to the strain on the electrical grid due to the unprecedented heat wave. GSWC operated its generators to load shed and reduce the strain on the electrical grid in the Cordova System."

Question 5:
GSWC's Master Plan identifies that due to system demands issues during the summer months,[3] GSWC needs to install a portable generator in the Pyrites plant:

a) Explain how GSWC resolved the demand issues for the past ten years without a backup generator.

b) For the past ten years, provide records of each incident where this facility was unable to meet its system demand and explain GSWC's approach to resolving each incident. Provides all supporting documentation including, but not limited to, engineering reports or internal company communications, including emails or memorandums.

Response 5:

a) GSWC did not experience a widespread power outage during summer demands during the last 10 years that prevented the utility from meeting supply requirements for the Cordova East Zone.
b) The driving factor for this project is not based on historical demand issues, but due to the risk of extended electrical power outages in the future. As referenced in the 2023 GRC Testimony and in SN2-006 Response 4.c and 7.a, "Generators also allow GSWC to load shed and reduce the strain on the electrical grid, when requested by the California Independent System Operator (ISO). Generators are important to install at select supply and pumping facilities and will increase the reliability of the Cordova System to meet customer demands and increase the resiliency of the Cordova System to the negative consequences of climate change. During September of 2022, California experienced a historically long and record-breaking heat wave. A statewide emergency was declared by the Governor of California. Through the California ISO a statewide flex alert was issued to request Californians to conserve electricity due to the strain on the electrical grid due to the unprecedented heat wave. GSWC operated its generators to load shed and reduce the strain on the electrical grid in the Cordova System."

Question 6:

Has GSWC considered installing solar panels and battery storage instead of installing backup generators?

a) If yes, explain GSWC's consideration regarding installing solar panels and battery storage. For all proposed solar installations, please indicate whether battery storage will be installed in conjunction. Provide all supporting documentation. This includes, but is not limited to, engineering reports or internal company communications, including emails or memorandums.
b) If not, explain why not.
c) For each proposed generator project, please provide a cost-benefit analysis (in Excel format) comparing the proposed permanent generator to the installation of solar panels and battery storage. Include support documentation for all assumptions and calculations.

Response 6:

a) GSWC will typically attain a consultant to evaluate the feasibility of solar generation. For example, GSWC attained 1898 & Co. to evaluate renewable energy in GSWC's Region 3, which would increase the cost of the project. GSWC has not considered the option to install solar panels and battery storage, as this is not considered reliable – it is based on whether the batteries have enough available storage capacity during an emergency. The batteries are charged when the solar rays provide excess power; power is drawn from the batteries when the solar rays do not have sufficient power. The battery storage duration is limited such that it could not provide sufficient power for an extended period. The solar panels and battery storage also require a significantly larger footprint than a generator, which could limit GSWC future operations at the Plants. Most if not all of GSWC plant sites in Arden-Cordova CSA do not have available space to accommodate solar panels. Additionally, solar generation is typically used to offset the cost or address unavailability of an electric service provider. Whereas a generator is typically used to provide an additional electrical source during a power outage.

c) No analysis was completed because a generator and solar panels with battery storage are efficiently utilized in different scenarios.

Question 7:

GSWC's Master Plan identifies two natural gas booster pumps (A and B) as backup power with a capacity of 4,000 gpm for each pump in the Coloma Treatment Water Plant.[4]
For each natural gas booster pump A and B, please provide the following information:

a) The booster pump's annual usage (in hours) for the past ten years.
b) Is the natural gas booster pump equipped with a device such as an hour meter that tracks the lifetime usage of the booster? If so, what is the current usage of the booster (in hours)?
c) Provide the SCADA log of natural gas booster pump usage for the past ten years. If such SCADA logs or hour meters are not kept, explain how GSWC keeps track of the usage of the booster.
d) Provide a copy of the most recent test for the booster pump.

Response 7:

a) The booster pump's annual usage (in hours) for the past ten years is shown below.

	Booster A (Annual HRS)	Booster B (Annual HRS)
2014	824.8	787.7
2015	220.5	741.7
2016	903.9	700.8
2017	856.7	2127.3
2018	6.9	6.1
2019	20.5	1.4
2020	86.5	0
2021	38.5	0
2022	103.8	0
2023	12.5	3.7

b) Yes, as of 11/17/2023, the current reading for Booster A is 12985.0 hours and Booster B is 15123.4 hours.
c) SCADA logs exist for the natural gas boosters, but that data is logged every second. See attachment 'SN2-012 Q7c – Coloma Booster A & B Logs', which provides the hours by the day which may be more responsive to the question than providing a CSV file of over 60 million data points.

d) See attachment 'SN2-012 Q7d – Coloma Booster A & B Tests'.

Question 8:
GSWC's response to DR SN2-002 stated, "*The generator will be sized to run two pumps simultaneously to provide sufficient raw water to optimize the Pyrites WTP capacity during a power outage. The Planning high level analysis assumes the motor hp is roughly equal to the generator kW (rule of thumb). Each motor is 75 hp. Therefore, kW=75x2=150. A detailed analysis will be completed during the design phase of the project and it is likely that a 200 kW generator or larger will be proposed to account for increased load at startup*."[5]

a) Please confirm that above statement relates to 'Folsom South Canal' and not to ''Pyrites WTP." If the above statement does not relate to 'Folsom South Canal,' please provide the proper information for 'Folsom South Canal.'
b) Please provide cost estimates for both a 200 kW portable generator and a 200 kW permanent generator. Provide all supporting documentation. This includes, but is not limited to, the most recent invoices or quotes in Region 1.

Response 8:

a) The statement above relates to the proposed generator at Folsom South Canal Plant, which is necessary to provide raw water to the Pyrites WTP during a power outage at the Folsom South Canal.
b) No analysis was completed because a stationary generator has a similar cost to a similarly sized portable generator. Portable generators are not allowed to remain at a plant site long term. AQMD requires they be moved routinely. Thus a permanent generator is a better long-term solution.

Question 9:
GSWC's response to DR SN2-002 stated, "*The generator will be sized to run two pumps simultaneously to optimize the Pyrites WTP capacity during a power outage. The Planning high-level analysis assumes the motor hp is roughly equal to the generator kW (rule of thumb). Each motor is 30 hp. Therefore, kW=30x2=60. A detailed analysis will be completed during the design phase of the project and it is likely that a 100 kW generator or larger will be proposed to account for increase load at startup*."[6]

a) Please provide cost estimates for both a 100 kW portable generator and a 100 kW permanent generator. Provide all supporting documentation. This includes, but is not limited to, the most recent invoices or quotes in Region 1.

Response 9:
No analysis was completed because a stationary generator has a similar cost to a similarly sized portable generator. Portable generators are not allowed to remain at a plant site long term. AQMD requires they be moved routinely. Thus a permanent generator is a better long-term solution.

Question 10:
For each facility of Folsom South Canal and Pyrites plants, please provide the following information:

a) For each pump, include information such as pump ID, pump type, energy type, size (hp), capacity (gallon per minute/gpm), and installed year in Excel format.

		Pumps				
Plant	Pump ID	Pump Type	Energy Type	Size (HP)	Capacity (gpm)	Installed Year
Folsom South Canal	Booster A	Vertical	Electric	xxx	xxx	xxx
	Booster B	xxx	xxx	xxx	xxx	xxx
	Booster C	xxx	xxx	xxx	xxx	xxx
	Booster D	xxx	xxx	xxx	xxx	xxx
	Booster E	xxx	xxx	xxx	xxx	xxx
Pyrites WTP	Booster A	xxx	xxx	xxx	xxx	xxx
	Booster B	xxx	xxx	xxx	xxx	xxx
	Booster C	xxx	xxx	xxx	xxx	xxx

b) For each pump identified in question 10.a (above), provide a copy of the most recent test for the pump.

Response 10:

a)

		Pumps				
Plant	Pump ID	Pump Type	Energy Type	Size (HP)	Capacity (GPM)	Installed Year
Folsom South Canal	Booster A	Vertical	Electric	75	2360	1999
	Booster B	Vertical	Electric	75	2360	1999
	Booster C	Vertical	Electric	75	2360	1999
	Booster D	Vertical	Electric	75	2360	1999
	Booster E	Vertical	Electric	75	2360	2005
Pyrites WTP	Booster A	Vertical	Electric	30	1800	2005
	Booster B	Vertical	Electric	30	1800	2005
	Booster C	Vertical	Electric	30	1800	2005

b) See attachment 'SN2-012 Q10b – FSC & Pyrites Pump Tests'.

Question 11:
Referring to GSWC's Gisler, Insco testimony which states, "*During September of 2022, California experienced a historically long and record-breaking heat wave. A statewide emergency was declared by the Governor of California. Through the California ISO a statewide flex alert was issued to request Californians to conserve electricity due to the*
6 GSWC's response to DR SN2-002 (Plant Generators), p.5, question 2.c.
strain on the electrical grid due to the unprecedented heat wave. GSWC operated its generators to load shed and reduce the strain on the electrical grid in the Cordova System."[7]

a) As stated above, please provide references (page and paragraphs) in official documentation by the Governor of California or California ISO, such as GSWC's Attachment 8 – Statewide Heat Proclamation, the paragraphs mandating 'water utilities' such as GSWC to conserve electricity due to the strain on the electrical grid caused by the unprecedented heat wave or other climate issues.

Response 11:
Water utilities were specifically requested to reduce demand during the heat emergency. The request came directly from the CPUC. Based on GSWC notes, Rachel Peterson, Executive Director at the CPUC, and Terence Shia, Water Division Director at the CPUC, participated in calls with Regulated Water Utilities to track our progress reducing load and enrollment in Demand Side Grid Support (DSGS) program.
California Energy Commission allowed water utilities to enroll directly in DSGS which had previously not be available to water utilities. See attachment 'SN2-012 Q11 - Request' for California Energy Commission requesting action to reduce energy load.

Reservoirs in Region 1:
Replaced Cypress Ridge Reservoir No.1 (North Tank).

Question 12:
Referring to GSWC's Capital Testimony, Attachment SM07 p.1 of 45 (Nov 2019).[8] The Harper and Associates Engineering, Inc (HAE) consultant identified the age of the tank is unknown, as shown below:

> GENERAL INFORMATION
>
> A. Construction and Maintenance Details
>
> Structure is a bolted steel water storage tank located in Arroyo Grande, California, and is designated as the Cypress Ridge North Tank. The tank was constructed by Thompson Tank & Construction, Inc., but the age of the tank is unknown. The shell consists of two

However, in GSWC's response to DR SN2-001 Question 1.c, GSWC indicated the tank was built in 1998.[9] Please provide the correct information when the tank was constructed.

Response 12:
The tank was constructed in 1998.

Question 13:
Provide the maintenance and repair records for the Cypress Ridge North reservoir since the reservoir entered into service.

Response 13:
Maintenance and repair records are currently unavailable. When GSWC acquired the Cypress Ridge system, maintenance and repairs records were not provided from the previous owner.

Question 14:
Provide any and all supporting documentation on the likelihood of the Cypress Ridge North reservoir needing to be turned off for maintenance or other necessary operational events for the next ten years. This includes, but is not limited to, any engineering reports, incident reports, inspection findings and recommendations, internal company communications, including emails and/or memorandums.

Response 14:
Project is based on the consultant recommendation stating that the reservoir needs to be replaced.

Question 15:
Provide any and all supporting documents on the likelihood of the Cypress Ridge South reservoir needing to be turned off for maintenance or other necessary operational events for the next ten years. This includes, but is not limited to, any engineering reports, incident reports, inspection findings and recommendation, internal company communications, including emails and/or memorandums.

Response 15:
Any reservoir could be taken offline at any time. The Cypress Ridge Plant is a critical facility as it is the only plant providing water directly to the Cypress Ridge Zone. Two reservoirs provide reliable storage at the Cypress Ridge Plant by ensuring that water can still be delivered into that zone if one reservoir is out of service.

Recoat Reservoirs:
Calle Cordoniz Plant
Question 16:
Referring to GSWC's Capital Testimony, Attachment LO03, the Harper and Associates Engineering (HAE), Inc., Corrosion Engineering Evaluation report (Aug 2022).[10]

a) On p.1 of 44, the HAE 2022 report identified that the age of the tank is unknown, as shown in the picture below. However, in GSWC's response to DR SN2-001 Question 1.c, GSWC indicated the tank was built in 1995.[11] Please provide the correct information when the tank was constructed.

GENERAL INFORMATION

A. Construction and Maintenance Details

Structure is a bolted steel water storage reservoir located in Los Osos, California, and is designated as the Calle Cordoniz Reservoir. The year the reservoir was constructed and the contractor are unknown. The shell consists of two courses with a total height of 16 feet and a diameter of 55 feet. The tank has a cone roof supported by a center column with

b) On p.11 of 44, the HAE 2022 report identified that the abrasive blast cleaning exterior & epoxy/urethane paint cost is between $22,000 to $32,000, as shown in the picture below. Based on this information, the average cost is calculated as ($22,000+$32,000)/2 =$27,000.

Exterior Surfaces

a. Abrasive blast cleaning corroding exterior surfaces to Near White Metal (SSPC-SP10) and applying an epoxy/urethane paint system to prepared exterior surfaces would be in the cost range of $22,000 to $32,000, based on surfaces being classified as a nonhazardous materials/waste project.

However, the GSWC's workpaper: PCE_RI - Los Osos (Calle Cordoniz Plant, Recoat Reservoir),[12] estimated the unit cost of abrasive blast cleaning exterior & epoxy/urethane paint is $54,000, based on the average cost of the HAE 2022 report for Calle Cordoniz Reservoir.

i. Please explain how GSWC arrived with an cost of $54,000 (double the HAE recommended average).
ii. Please provide detailed cost breakdown of the cost of $54,000 stated above (in Excel format) including all supporting documentation.
iii. Please provide detailed cost breakdown of the cost estimated by HAE 2022 report (in Excel format) including all supporting documentation.

Response 16:

a) The tank was constructed in 1995.
b)
   i. This number is entered in error. The correct number would be the average, which is $27,000.
   ii. N/A.
   iii. The costs provided by the 2022 HAE report are in text format. No detailed excel file is available.

Question 17:
Referring to GSWC's workpaper: PCE_RI - Los Osos (Calle Cordoniz Plant, Recoat Reservoir), Tab: Estimate Creator, line 255, item: Inspection. As shown in the picture below, GSWC identified the unit cost as $60,000.00. However, the Note/Source indicates the adjusted cost as $50k. Explain why GSWC does not follow the DCW Cost Source and include supporting documentation.

Unit Cost	Notes / Source	DCW Cost Source
$ 60,000.00	Pineview Plant, Reservoir Improvements Replace damaged elements and recoat Pineview Reservoir DCW Update Q3 2022 (adjusted from $75k to $50k due to size of tank, exterior coating inspection only)	DCW updated Q3 2022

Response 17:
GSWC is utilizing the DCW Cost Source. The $60,000 is the unit cost provided by DCW. It appears the note should be $60k as opposed to $50k.

<u>Other Reservoirs</u>
Question 18:
Referring to GSWC's Response to DR SN2-001, questions 2.b and 2.c, GSWC mentioned the tank maintenance records for the Reservoir no.1 and no. 2 in La Serena Plant are not available. For each reservoir, please explain why the tank maintenance records are not available.

Response 18:
The current staff has been unable to locate any maintenance records for La Serena Reservoir No. 1 and No. 2.

Question 19:
For each tank/reservoir listed below, please provide the tank maintenance and repair records since the tank entered into service:

a) Sonoma WTP GAC vessel in Clearlake system.
b) Calle Cordoniz Reservoir in Los Osos system.
c) Orcutt Hill Plant- Reservoir No. 2 in Orcutt System.

Response 19:

a) See attachment 'SN2-012 Q19a – Sonoma GAC'.
b) See attachment 'SN2-012 Q19b – Calle Cordoniz Reservoir'.
c) See attachment 'SN2-012 Q19c – Orcutt Hill Reservoir 2'.

END OF RESPONSE

[2] GSWC’s Cordova System Water Master Plan, p. 8-2, Table 8-1 Condition Assessment Plant Projects. Alternative Number 1.11.0 reason: Install portable natural gas generator to meet the Cordova’s water supply demands during the summer months.

[3] GSWC’s Cordova System Water Master Plan, p. 8-2, Table 8-1 Condition Assessment Plant Projects. Alternative Number 1.10.0 reason: Install portable natural gas generator to meet the Cordova’s water supply demands during the summer months.

[4] GSWC’s Cordova System Water Master Plan, p. 2-6. Table 2-6 Booster Pumps, Booster A and B capacity of 4,000 gpm for each pump. Page. 8-2, Table 8-1 Condition Assessment Plant Projects. Alternative Number 1.10.0 reason: Install portable natural gas generator to meet the Cordova’s water supply demands during the summer months.

[5] GSWC’s response to DR SN2-002 (Plant Generators), p.3, question 1.f (highlighting added).

[6] GSWC’s response to DR SN2-002 (Plant Generators), p.5, question 2.c

[7] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, pages 41-42, lines 20-23 and lines 1-2.

[8] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, Attachment SM07 – Harper and Associates Engineering, Inc., Corrosion Engineering Evaluation of Three Bolted Steel Water Storage Tanks (Cypress Ridge North Tank), November 2019.

[9] GSWC’s response to DR SN2-001 Question 1.c, Attachment: Tank Management Database EPD.xlxs, line 40, column E (Year Built).

[10] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, Attachment LO03 – Harper and Associates Engineering, Inc., Corrosion Engineering Evaluation of 10 Water Storage Reservoirs (Calle Cordoniz Reservoir), August 2022.

[11] GSWC’s response to DR SN2-001 Question 1.c, Attachment: Tank Management Database EPD.xlxs, line 24, column E (Year Built).

[12] GSWC’s 2023 workpaper: PCE_RI - Los Osos (Calle Cordoniz Plant, Recoat Reservoir).xlxs, Tab Estimate Creator, line 515, shows the unit cost of abrasive blast cleaning exterior & epoxy/urethane paint as $54,000.

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A15 Category

	A	B	C	D	E	F	G	H	I	J	K	L
1	LEGEND											
7	**Stationary (DG)**	Stationary Diesel Generator - Engine >										
11	**Stationary (NDG)**	Stationary Non-Diesel Generator - Rec										
12	PTO	Permit to Operate										
13	ATC	Authority to Construct										
14												
15	Category	District	LocationDescription	City	County	EquipmentDescription	PermitNo	EngineYear	EngineManufacturer	MaxPower (HP)	EngineDisplacement	FuelType
56	**Stationary (DG)**	NORTHERN	3445 Ocelot Well	Rancho Cordova	Sacramento	Emergency Generator	PTO 18727	2005	John Deere	563	12.5	Diesel
57	**Stationary (DG)**	NORTHERN	1200 South Bridge St	Rancho Cordova	Sacramento	Emergency Generator	PTO 26620	2019	Cummins	755	15	Diesel
58	**Stationary (DG)**	NORTHERN	3141 Trussel Way	Sacramento	Sacramento	Emergency Generator	PTO 26499	2019	John Deere	385	9	Diesel
59	**Stationary (NDG)**	NORTHERN	10610 International Drive	Rancho Cordova	Sacramento	Emergency Generator at Mather We	ATC 27160	1999	Cummins	322		CNG
60	**Stationary (NDG)**	NORTHERN	11200 Coloma Road	Rancho Cordova	Sacramento	Emergency Generator	PTO 14767	1999	Ford	168		CNG
61	**Stationary (NDG)**	NORTHERN	1425 Rushden Dr.	Rancho Cordova	Sacramento	Emergency Generator	PTO 14769	1999	Cummins	280		CNG
62												
63												

PUMP CHECK
Pumping Systems Analysts
Hydraulic Test Report

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(951) 684-9801 • Lic. 799498 • Fax (951) 684-2988

Golden State Water Company
11200 Coloma Road

Test Date: 06/09/2023
Pump type: TB
Plant: Coloma Finished Water A
System: Cordova

A test was made on this booster pump and the following information was obtained.

EQUIPMENT

PUMP:	Goulds	SERIAL:	FR439883-1
ENGINE:	Cummins	SERIAL:	25269980
Eng. H.P.:	250	LAT/LON:	38.37.071n121.15.916w
METER:	51997396	REF #:	PC 3973

TEST RESULTS

	TEST 1	TEST 2
Discharge, PSI	48.0	50.0
Discharge head, feet	110.9	115.5
Suction head, PSI	9.0	9.0
Suction head, feet	20.8	20.8
Total pumping head, feet	90.1	94.7
Gallons per minute flow	**1008**	**2327**
Acre feet pumped per 24 hours	4.452	10.281
Cubic feet per hour input	487.9	690.2
Thermal Horsepower	191.7	271.2
Estimated BHP	52	75
Measured speed of engine, RPM	1325	1498
Measured speed of pump, RPM	1325	1498
Therms per acre foot	26.3	16.1
Overall plant efficiency in %	**12.0**	**20.5**

The above test results indicate various conditions under which this pump operates.

Test 1 was with this pump operating alone at the time of the test.

If you have any questions please contact Jon Lee at (951) 684-9801.

P.O. Box 5646, Riverside, California 92517

ANNUAL PUMPING COST ANALYSIS

Golden State Water Company Test date: 06/09/2023

Plant: Coloma Finished Water A
Meter no: 51997396
H.P. 250

The following cost analysis is presented as an aid to your cost accounting and planning. It is an **Estimate** based on the pump test data and your energy use or hours of operation during the previous 12-month period.

	EXISTING CONDITIONS	
Average cost per therm	$0.9800	Estimated
Hours of operation per year	1	
Equivalent 24 hour days	0.04	

	Test 1	Test 2
Therms per hour input	4.879	6.902
Average fuel cost per hour	$4.78	$6.76
Hourly engine maint.	$1.25	$1.25
Total operating cost per hour	$6.03	$8.01
Average cost per acre foot	$32.51	$18.71

Power Services, Inc.
6301 Bearden Lane
Modesto, CA 95357
209.527.2908 / 800.808.9283
209.527.2921 fax
www.powerhydrodynamics.com

Report ID: PT-21836

Agricultural and Domestic Pump Test Report

Golden State Water Co. - Coloma Finished Water B - Run 1

Latitude:	38.61793W	Longitude:	-121.26517N	Elevation:	121 ft
Test Date:	Jul 9th 2018	Tester:		Nameplate HP:	0.00 hp

Customer Information

Golden State Water Co.

11200 Coloma Rd.
Rancho Cordova, CA 95670-4407

Contact: Travis Anderson

Equipment Data

Motor Make:	Cummins
Motor Model:	
Serial Number:	25269981
Pump Make:	Gould
Pump Type:	Vertical Turbine Booster
Drive Type:	Natural Gas Engine
Gearhead Make:	

Hydraulic Data

Standing Water Level (SWL):	0.00 ft
Recovered Water Level (RWL):	0.00 ft
Pumping Water Level (PWL):	-16.17 ft
Drawdown:	0 ft
Discharge Pressure:	60.50 lb/sqft
Discharge Level:	139.755 ft
Total Lift:	123.585 ft
Water Source:	Tank/Reservoir

Pump running at beginning of test. Recovered water level used for standing water level in calculations.

Flow Data

Run Number:	1 of 1
Measured Flow:	3880 gpm
Customer Flow:	3780 gpm
Flow Velocity:	9.7 ft/sec
Acre Feet per 24 Hr:	17.17
Cubic Feet Per Second (CFS):	8.64 ft
Well Yield:	0 gpm/ft

Power Data

Water Horsepower:	121.09 hp	Name Plate RPM:	1760 rpm
Assumed Brake HP Input:	200 hp	RPM at Tachometer:	1750 rpm
Pump Efficiency:	60.54%	RPM at Gearhead:	1752 rpm

Remarks

All results are based on conditions during the time of the test. If these conditions vary from the normal operation of your pump, the results shown may not describe the pump's normal performance.

The efficiency of this pump is considered to be fair assuming this run represents plant's normal operating condition.

This pump has an adequate test section.

This pump had a V-Cone type flow meter.

Based on information obtained at the time the test was performed, this test represents the pumps standard operating conditions.

Power Services, Inc.

6301 Bearden Lane
Modesto, CA 95357
209.527.2908
209.527.2921 fax
800.808.9283
www.powerhydrodynamics.com

Thursday, August 2, 2018

Travis Anderson
Golden State Water Co.
11200 Coloma Rd.
Rancho Cordova, CA 95670-4407

Dear Travis Anderson:

This letter is to confirm the information we gathered during the flow meter verifications that were performed on Monday, July 9, 2018 on your 'Coloma Finished Water B' located at 38 '61793W -121 '26517N.

The results are attached and are certified to be accurate within +/- 2 %.

We conducted a flow test on the discharge flow meter using a Panametrics PT878 portable Ultrasonic flow meter to determine the flow under conditions that the Golden State Water Co. staff said represented normal flow rates. We ran a constant flow for approximately thirty minutes and the attached report represents the flow rate that both Golden State Water Co.'s and Power Services, Inc's meters read during this test. Due to the accuracy of the DP015-1000-06, no calibration was necessary.

For this test Power Services, Inc used equipment that is accurate +/- 1.5 % for flow measurement. The methodology used to test this flow meter was that of the California Association of Pump Test Professionals and is recognized to be accurate by the U.S. Department of Energy, the Hydraulic Institute, the California Energy Commission, Pacific Gas and Electric, Southern California Edison and the California Public Utilities Commission.

This information should fulfill the requirements imposed on you and your company. Should anyone have questions regarding these flow meter verifications, please have them contact me directly in my office (209) 527-2908 or (800) 808-9283.

Regards,

William Thomas Power, III

Enclosures

Power Services, Inc.

6301 Bearden Lane
Modesto, CA 95357
209.527.2908
209.527.2921 fax
800.808.9283
www.powerhydrodynamics.com

Customer: Golden State Water Co.
City: Rancho Cordova
Address: 11200 Coloma Rd.
State & Zip: CA 95670-4407

Location: Coloma Finished Water B
Latitude: 38.61793W
Elevation: 121
Longitude: -121.26517N

Meter Make: Rosemount
Meter Serial #: 1038061
Meter Model: DP015-1000-06

Tester: Bill Power
Test Time:
Test Date: Jul 9th 2018

Remarks: This pump had a V-Cone type flow meter.
- This pump has an adequate test section.
- All results are based on conditions during the time of the test. If these conditions vary from the normal operation of your pump, the results shown may not describe the pump's normal performance.

Discharge Meter GPM	PSI GPM	% Diff/GPM
3780	3880	-2.6%

Glossary of terms:

Discharge Meter GPM = The GPM shown on the customers flow meter (if one is present).
PSI GPM = The GPM measured by Power Services Inc.
% Diff/GPM = Power Services GPM reading divided by the client discharge GPM reading.

Certification: I certify under penalty of law that this document was prepared under my direction or in supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the data submitted is, to the best of my knowledge and belief, is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for known violations.

PUMP CHECK
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Golden State Water Company		Test Date:	06/10/2023
Folsom Boulevard		Pump type:	TB
		Plant:	Folsom South Canal A
		System:	Cordova

A test was made on this booster pump and the following information was obtained.

EQUIPMENT

PUMP:	Goulds	SERIAL:	N/A
MOTOR:	US	SERIAL:	H112-0004792-100R-02
H.P.	75	LAT/LON:	38.37.020n121.14.793w
METER:	2517682	REF #:	PC 868

TEST RESULTS

	TEST 1
Discharge, PSI	33.0
Discharge head, feet	76.2
Suction lift, feet	14.2
Total pumping head, feet	90.4
Gallons per minute flow	**2800**
Acre feet pumped per 24 hours	12.372
KW input to motor	70.8
HP input to motor	94.9
Motor load, % BHP	119.5
Measured speed of pump, RPM	1776
KWH per acre foot	137.3
Overall plant efficiency in %	**67.4**

Test 1 was performed with three pumps at the station running and the VFD was in bypass mode.

Due to an inadequate water measurement test location and the butterfly valve broken in the partially throttled position is affecting the flow measurement, the gallons per minute shown and the resulting overall plant efficiency should be considered approximate rather than actual.

If you have any questions please contact Jon Lee at (951) 684-9801.

P.O. Box 5646, Riverside, California 92517

ANNUAL PUMPING COST ANALYSIS

Golden State Water Company — Test date: 06/10/2023

Plant: Folsom South Canal A
H.P. 75

The following cost analysis is presented as an aid to your cost accounting and planning. It is an **Estimate** based on the pump test data and your energy use or hours of operation during the previous 12-month period.

	EXISTING CONDITIONS	
Total annual kWhrs	370213	
Total annual cost	$53,014.53	
Average Cost per kWh	$0.1432	Estimated
	TEST 1	
KWh per acre foot at test speed	137.3	
Cost per acre foot at test speed	$19.67	
Overall plant efficiency	67.4	

PUMP CHECK
Pumping Systems Analysts
Hydraulic Test Report

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Golden State Water Company		Test Date:	06/10/2023
Folsom Boulevard		Pump type:	TB
		Plant:	Folsom South Canal B
		System:	Cordova

A test was made on this booster pump and the following information was obtained.

EQUIPMENT

PUMP:	Goulds	SERIAL:	N/A
MOTOR:	US	SERIAL:	H1120004792-100R-03
H.P.	75	LAT/LON:	38.37.020n121.14.793w
METER:	2517682	REF #:	PC 869

TEST RESULTS

	TEST 1
Discharge, PSI	33.5
Discharge head, feet	77.4
Suction lift, feet	14.2
Total pumping head, feet	91.6
Gallons per minute flow	**2157**
Acre feet pumped per 24 hours	9.531
KW input to motor	51.4
HP input to motor	68.9
Motor load, % BHP	86.8
Measured speed of pump, RPM	1784
KWH per acre foot	129.4
Overall plant efficiency in %	**72.4**

Test 1 was the normal operation with three pumps at the station running.

Due to an inadequate water measurement test location, the gallons per minute shown and the resulting overall plant efficiency should be considered approximate rather than actual.

If you have any questions please contact Jon Lee at (951) 684-9801.

P.O. Box 5646, Riverside, California 92517

ANNUAL PUMPING COST ANALYSIS

Golden State Water Company | Test date: 06/10/2023

Plant: Folsom South Canal B
Meter no: 2517682
H.P. 75

The following cost analysis is presented as an aid to your cost accounting and planning. It is an **Estimate** based on the pump test data and your energy use or hours of operation during the previous 12-month period.

		EXISTING CONDITIONS	
Total annual kWhrs		375,220	
Total annual cost		$53,731.50	
KW input to motor		51.4	
Hours of operation per year		7300	Estimated
Equivalent 24 hour days		304.2	
Acre feet pumped per 24 hour day		9.531	
Acre feet pumped per year		2899.0	
Average cost per kWhr		$0.1432	Estimated
Average cost per hour		$7.36	
Average cost per acre foot		$18.53	
Overall plant efficiency	%	72.4	

Golden State Water Company
Folsom Boulevard

Test Date: 06/10/2023
Pump type: TB
Plant: Folsom South Canal C
System: Cordova

A test was made on this booster pump and the following information was obtained.

EQUIPMENT

PUMP:	Goulds	SERIAL:	N/A
MOTOR:	US	SERIAL:	H1120004847-100R-01
H.P.	75	LAT/LON:	38.37.020n121.14.793w
METER:	2517682	REF #:	PC 870

TEST RESULTS

	TEST 1
Discharge, PSI	33.5
Discharge head, feet	77.4
Suction lift, feet	14.2
Total pumping head, feet	91.6
Gallons per minute flow	**2488**
Acre feet pumped per 24 hours	10.995
KW input to motor	63.0
HP input to motor	84.4
Motor load, % BHP	106.4
Measured speed of pump, RPM	1781
KWH per acre foot	137.5
Overall plant efficiency in %	**68.2**

Test 1 was with three pumps at the station running at the time of the test.

Due to an inadequate water measurement test location, the gallons per minute shown and the resulting overall plant efficiency should be considered approximate rather than actual.

If you have any questions please contact Jon Lee at (951) 684-9801.

ANNUAL PUMPING COST ANALYSIS

Golden State Water Company Test date: 06/10/2023

Plant: Folsom South Canal C
Meter no: 2517682
H.P. 75

The following cost analysis is presented as an aid to your cost accounting and planning. It is an **Estimate** based on the pump test data and your energy use or hours of operation during the previous 12-month period.

		EXISTING CONDITIONS	
Total annual kWhrs		264,600	
Total annual cost		$37,890.72	
KW input to motor		63.0	
Hours of operation per year		4200	Estimated
Equivalent 24 hour days		175.0	
Acre feet pumped per 24 hour day		10.995	
Acre feet pumped per year		1924.1	
Average cost per kWhr		$0.1432	Estimated
Average cost per hour		$9.02	
Average cost per acre foot		$19.69	
Overall plant efficiency	%	68.2	

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Golden State Water Company		Test Date:	06/10/2023
Folsom Boulevard		Pump type:	TB
		Plant:	Folsom South Canal D
		System:	Cordova

A test was made on this booster pump and the following information was obtained.

EQUIPMENT

PUMP:	Goulds	SERIAL:	N/A
MOTOR:	US	SERIAL:	H1120004792-100R-04
H.P.	75	LAT/LON:	38.37.020n121.14.793w
METER:	2517682	REF #:	PC 871

TEST RESULTS

	TEST 1
Discharge, PSI	32.5
Discharge head, feet	75.1
Suction lift, feet	14.2
Total pumping head, feet	89.3
Gallons per minute flow	**2273**
Acre feet pumped per 24 hours	10.045
KW input to motor	56.4
HP input to motor	75.6
Motor load, % BHP	95.2
Measured speed of pump, RPM	1784
KWH per acre foot	134.7
Overall plant efficiency in %	**67.8**

Test 1 was with three pumps at the station running at the time of the test.

Due to an inadequate water measurement test location, the gallons per minute shown and the resulting overall plant efficiency should be considered approximate rather than actual.

If you have any questions please contact Jon Lee at (951) 684-9801.

P.O. Box 5646, Riverside, California 92517

ANNUAL PUMPING COST ANALYSIS

Golden State Water Company Test date: 06/10/2023

Plant: Folsom South Canal D
Meter no: 2517682
H.P. 75

The following cost analysis is presented as an aid to your cost accounting and planning. It is an **Estimate** based on the pump test data and your energy use or hours of operation during the previous 12-month period.

		EXISTING CONDITIONS	
Total annual kWhrs		148,388	
Total annual cost		$21,249.22	
KW input to motor		56.4	
Hours of operation per year		2631	
Equivalent 24 hour days		109.6	
Acre feet pumped per 24 hour day		10.045	
Acre feet pumped per year		1101.2	
Average cost per kWhr		$0.1432	Estimated
Average cost per hour		$8.08	
Average cost per acre foot		$19.30	
Overall plant efficiency	%	67.8	

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Golden State Water Company
Folsom Boulevard

Test Date:	06/11/2022
Pump type:	TB
Plant:	Folsom South Canal E
System:	Cordova

A test was made on this booster pump and the following information was obtained.

EQUIPMENT

PUMP:	Goulds	SERIAL:	FR489369
MOTOR:	US	SERIAL:	H1120004792-100R-01
H.P.	75	LAT/LON:	38.37.020n121.14.793w
METER:	2517682	REF #:	PC 872

TEST RESULTS

	TEST 1
Discharge, PSI	31.0
Discharge head, feet	71.6
Suction lift, feet	12.7
Total pumping head, feet	84.3
Gallons per minute flow	**2205**
Acre feet pumped per 24 hours	9.746
KW input to motor	54.0
HP input to motor	72.4
Motor load, % BHP	91.2
Measured speed of pump, RPM	1784
KWH per acre foot	133.0
Overall plant efficiency in %	**64.9**

Test 1 was with three pumps at the station running at the time of the test.

Due to an inadequate water measurement test location, the gallons per minute shown and the resulting overall plant efficiency should be considered approximate rather than actual.

If you have any questions please contact Jon Lee at (951) 684-9801.

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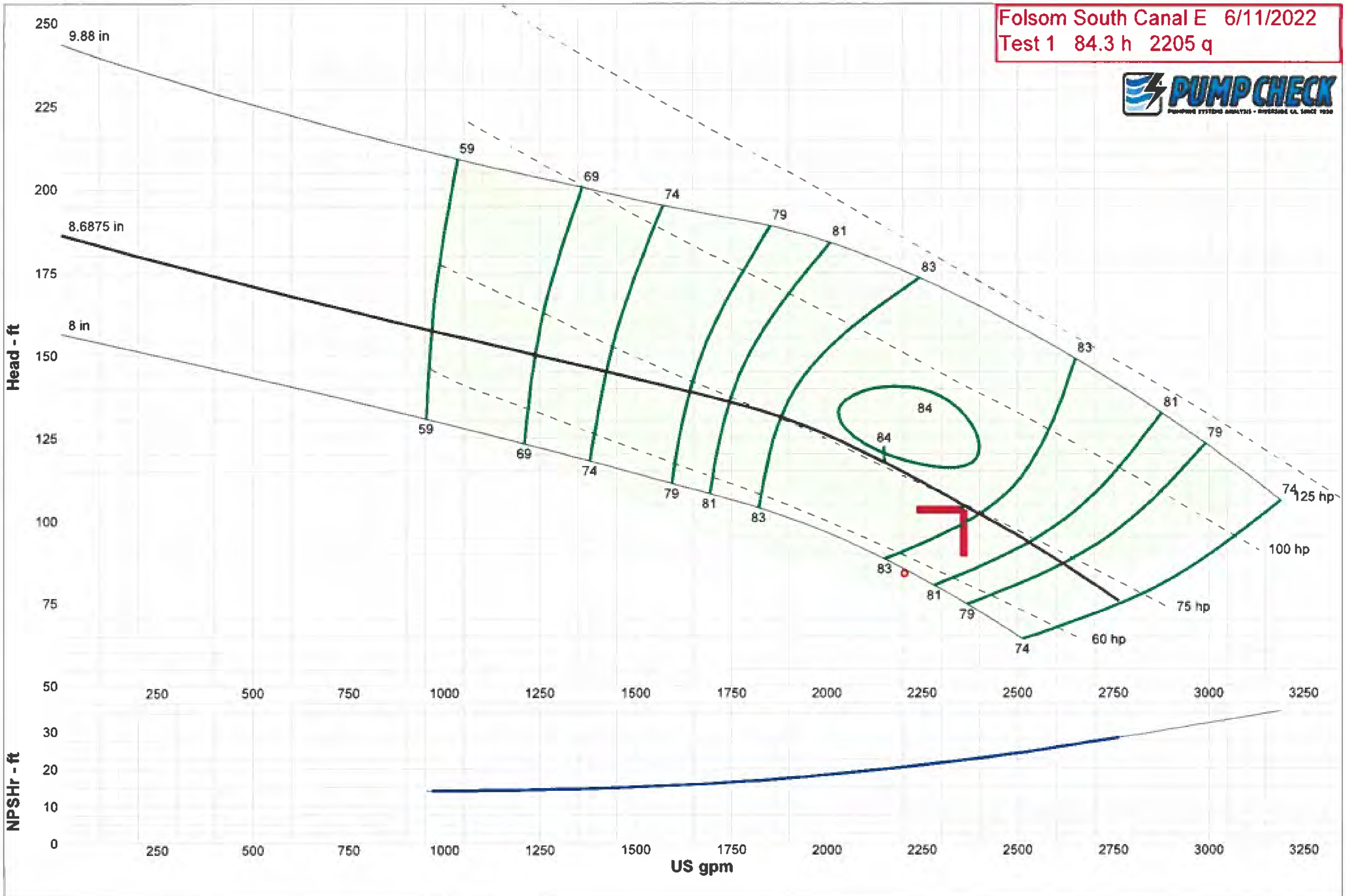

Company: GSCW Cordova
Name: Folsom South Canal
8/13/2011

Turbine 60 Hz
Catalog: goulds lineshaft .60, Vers 3.35
Lineshaft - 1800
Design Point: 2360 US gpm, 103 ft

Size: 14RHMC 2 stage
Speed: 1770 rpm
Dia: 8.6875 in
Curve: E6414RMPC1

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Pump Check 5/97

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GOLDEN STATE WATER COMPANY

Field Pump Test Sheet

System CORDOVA Plant FOLSOM SOUTH CANAL Pump E

Pump Location FOLSOM BLVD Pump Type TB

PUMP DATA PC872 ~~SCE Ref/State Well~~ #38.37.020N 121.14.743W

Pump GOULDS Type Wtr Syst (TO T.P.) Ser. No FR489369

Well Depth Pump Setting No. Stages 2 Size & Type 14 RHMC

Rated Head 103 Rated Capacity 2360 Rated Speed 1770

MOTOR DATA H1120004792-100R-01

Make US Frame 365TP Type RUI Ser. No.

HP 75 Volts 460 Amps 87 Phase 3 Code G Speed 1780

TEST DATA System Static System Pressure (~~BOM~~/ROA)Time

Test Points	3PMPS #1	#2	#3	#4		
Discharge P.S.I.	31.0				Water Level	Ft.
Suction PSI/VAC					Gauge #=	Ft.
Discharge Head Ft.	71.6				Airline=	Ft.
Suction Lft/~~Hd Ft~~.	12.7				Pipe ID 12 CORP	
Drawdown Feet					Area 113.098	
Pumping Level					Utility Co. SMUD	
Total Head-Ft.	84.3				Meter #2517682	
Turb./~~Merc~~. ST USE	1.5/18.9			BAD	Volts 120-480	
Hall Flow Meter	19.5			PLACE	K_h 1.8	Mult. 60
G.P.M.	2205		HOLD		No Load Voltage	
Water Meter GPM				OPEN		
Gals/Ft. Drawdown					Test Point	
Acre Ft./24 hrs.	9.746				Volts 480 / 480 / 481	
Revs. Secs.				5 BOOSTERS	Amps 77 / 75 / 76	
KW Input	54.0				KVA 63.1	P.F. 85.6
HP Input	72.4				Water Meter #UM20190459	
Water HP	46.9				ULTRA MAG	
B.H.P. @ 94.5 %	68.4				Cal. CUFT X1	
Motor Load in %	91.2				Revs. Secs.	
Pump RPM	1784					
KWH/Acre Ft.	133.0				\$/kWH 0.1432	KW 48.6
Over-all Eff.	64.8				Hr/yr 433	Imp. Eff. 72
					Hr. Meter 39305.7	

Remarks CODE V TEST 1 WAS W/3 PUMPS RUNNING

CHECKS APPROX 400 GPM BELOW THE CURVE

Tested by: CHAD/JON/DENNIS JOE Date 6-11-2022

168,169 C, LOAD FUSE +10°

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Golden State Water Company
11200 Coloma Road

Test Date: 06/07/2023
Pump type: TB
Plant: Pyrites Filtered Effluent A
System: Cordova

A test was made on this booster pump and the following information was obtained.

EQUIPMENT

PUMP:	Fairbanks Morse	SERIAL:	1119107
MOTOR:	US	SERIAL:	H0903107241-100R-01
H.P.	30	LAT/LON:	38.37.080n121.15.935w
METER:	2727421	REF #:	PC 2110

TEST RESULTS

	TEST 1	TEST 2
Discharge, PSI	17.0	13.6
Discharge head, feet	39.3	31.4
Suction lift, feet	7.1	7.6
Total pumping head, feet	46.4	39.0
Gallons per minute flow	**798**	**1885**
Acre feet pumped per 24 hours	3.525	8.330
KW input to motor	14.7	18.9
HP input to motor	19.7	25.3
Motor load, % BHP	61.1	78.5
Measured speed of pump, RPM	1194	
KWH per acre foot	100.1	54.5
Overall plant efficiency in %	**47.4**	**73.3**

Test 1 was with the discharge valve throttled as found at the time of the test.

Test 2 was with the dischage valve wide open.

The available water measurement location does not meet recommended industry standards. We recommend 8-10 diameters of straight pipe for the ideal test location.

If you have any questions please contact Jon Lee at (951) 684-9801.

P.O. Box 5646, Riverside, California 92517

ANNUAL PUMPING COST ANALYSIS

Golden State Water Company Test date: 06/07/2023

Plant: Pyrites Filtered Effluent A
Meter no: 2727421
H.P. 30

The following cost analysis is presented as an aid to your cost accounting and planning. It is an **Estimate** based on the pump test data and your energy use or hours of operation during the previous 12-month period.

		EXISTING CONDITIONS	
Total annual kWhrs		47,040	
Total annual cost		$6,736.13	
KW input to motor		14.7	
Hours of operation per year		3200	Estimated
Equivalent 24 hour days		133.3	
Acre feet pumped per 24 hour day		3.525	
Acre feet pumped per year		470.0	
Average cost per kWhr		$0.1432	Estimated
Average cost per hour		$2.11	
Average cost per acre foot		$14.33	
Overall plant efficiency	%	47.4	

Golden State Water Company		Test Date:	06/07/2023
11200 Coloma Road		Pump type:	TB
		Plant:	Pyrites Filtered Effluent B
		System:	Cordova

A test was made on this booster pump and the following information was obtained.

EQUIPMENT

PUMP:	Fairbanks Morse	SERIAL:	1119107
MOTOR:	US	SERIAL:	H0903107241-100R-03
H.P.	30	LAT/LON:	38.37.080n121.15.935w
METER:	2727421	REF #:	PC 2111

TEST RESULTS

	TEST 1	TEST 2
Discharge, PSI	16.3	13.4
Discharge head, feet	37.7	31.0
Suction lift, feet	7.0	7.6
Total pumping head, feet	44.7	38.6
Gallons per minute flow	**904**	**1819**
Acre feet pumped per 24 hours	3.997	8.038
KW input to motor	15.2	18.8
HP input to motor	20.4	25.2
Motor load, % BHP	63.1	78.1
Measured speed of pump, RPM	1194	
KWH per acre foot	91.3	56.1
Overall plant efficiency in %	**50.1**	**70.3**

Test 1 was with the discharge valve throttled as found at the time of the test.

Test 2 was with the dischage valve wide open.

The available water measurement location does not meet recommended industry standards. We recommend 8-10 diameters of straight pipe for the ideal test location.

If you have any questions please contact Jon Lee at (951) 684-9801.

ANNUAL PUMPING COST ANALYSIS

Golden State Water Company   Test date: 06/07/2023

Plant: Pyrites Filtered Effluent B
Meter no: 2727421
H.P. 30

The following cost analysis is presented as an aid to your cost accounting and planning. It is an **Estimate** based on the pump test data and your energy use or hours of operation during the previous 12-month period.

		EXISTING CONDITIONS	
Total annual kWhrs		50,160	
Total annual cost		$7,182.91	
KW input to motor		15.2	
Hours of operation per year		3300	Estimated
Equivalent 24 hour days		137.5	
Acre feet pumped per 24 hour day		3.997	
Acre feet pumped per year		549.5	
Average cost per kWhr		$0.1432	Estimated
Average cost per hour		$2.18	
Average cost per acre foot		$13.07	
Overall plant efficiency	%	50.1	

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Golden State Water Company
11200 Coloma Road

Test Date: 06/07/2023
Pump type: TB
Plant: Pyrites Filtered Effluent C
System: Cordova

A test was made on this booster pump and the following information was obtained.

EQUIPMENT

PUMP:	Fairbanks Morse	SERIAL:	1119107
MOTOR:	US	SERIAL:	H0903107241-100R-02
H.P.	30	LAT/LON:	38.37.080n121.15.935w
METER:	2727421	REF #:	PC 2112

TEST RESULTS

	TEST 1	TEST 2
Discharge, PSI	15.6	13.5
Discharge head, feet	36.0	31.2
Suction lift, feet	7.6	8.0
Total pumping head, feet	43.6	39.2
Gallons per minute flow	**996**	**1870**
Acre feet pumped per 24 hours	4.401	8.263
KW input to motor	15.7	19.1
HP input to motor	21.0	25.6
Motor load, % BHP	65.2	79.3
Measured speed of pump, RPM	1195	
KWH per acre foot	85.6	55.5
Overall plant efficiency in %	**52.2**	**72.3**

Test 1 was with the discharge valve throttled as found at the time of the test.

Test 2 was with the dischage valve wide open.

The available water measurement location does not meet recommended industry standards. We recommend 8-10 diameters of straight pipe for the ideal test location.

If you have any questions please contact Jon Lee at (951) 684-9801.

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ANNUAL PUMPING COST ANALYSIS

Golden State Water Company | Test date: 06/07/2023

Plant: Pyrites Filtered Effluent C
Meter no: 2727421
H.P. 30

The following cost analysis is presented as an aid to your cost accounting and planning. It is an **Estimate** based on the pump test data and your energy use or hours of operation during the previous 12-month period.

		EXISTING CONDITIONS	
Total annual kWhrs		51,810	
Total annual cost		$7,419.19	
KW input to motor		15.7	
Hours of operation per year		3300	Estimated
Equivalent 24 hour days		137.5	
Acre feet pumped per 24 hour day		4.401	
Acre feet pumped per year		605.1	
Average cost per kWhr		$0.1432	Estimated
Average cost per hour		$2.25	
Average cost per acre foot		$12.26	
Overall plant efficiency	%	52.2	

Attachment 1-8

GSWC's response to DR SN2-002 fol1ow-up question by email (Unit of Time)

Nasserie, Susana

From:	Pinedo, Yvonne <ypinedo@gswater.com>
Sent:	Monday, August 21, 2023 2:16 PM
To:	Nasserie, Susana
Cc:	Chan, Victor; Aslam, Mehboob; Palmer, Brett; Darney-Lane, Jenny A.; Powell, Brad; Pinedo, Yvonne; Winslow, Matt R.
Subject:	RE: [EXTERNAL] RE: Unit of Time (GSWC's response to DR SN2-002) - Response to follow up

Hi Susana,

Below is the response to your follow up question. Please let me know if you have any other questions. Thank you

Unit of time:
If there is only a single colon (x:xx), then it's hours and minutes.
If there are two colons (x:xx:xx), then it's hours, minutes, and seconds.
In the example mentioned at Folsom South on 5/16/2014, it states 0:00:04, which resulted in a 4-second outage.

Thank you,

Yvonne Pinedo
Regulatory Affairs
Golden State Water Company
630 E. Foothill Blvd.
San Dimas, CA 91773
909-394-3600 ext. 636
ypinedo@gswater.com

From: Nasserie, Susana <susana.nasserie@cpuc.ca.gov>
Sent: Friday, August 18, 2023 11:54 AM
To: Pinedo, Yvonne <ypinedo@gswater.com>
Cc: Chan, Victor <victor.chan@cpuc.ca.gov>; Aslam, Mehboob <mehboob.aslam@cpuc.ca.gov>; Palmer, Brett <Brett.Palmer@cpuc.ca.gov>; Darney-Lane, Jenny A. <jadarneylane@gswater.com>; Powell, Brad <Brad.Powell@gswater.com>
Subject: RE: [EXTERNAL] RE: Unit of Time (GSWC's response to DR SN2-002)

Hi Yvonne,
That's fine, please provide a response by August 25.
Thank you.
-Susana

From: Pinedo, Yvonne <ypinedo@gswater.com>
Sent: Friday, August 18, 2023 11:41 AM
To: Nasserie, Susana <susana.nasserie@cpuc.ca.gov>
Cc: Chan, Victor <victor.chan@cpuc.ca.gov>; Aslam, Mehboob <mehboob.aslam@cpuc.ca.gov>; Palmer, Brett <Brett.Palmer@cpuc.ca.gov>; Darney-Lane, Jenny A. <jadarneylane@gswater.com>; Powell, Brad <Brad.Powell@gswater.com>; Pinedo, Yvonne <ypinedo@gswater.com>
Subject: [EXTERNAL] RE: Unit of Time (GSWC's response to DR SN2-002)

Hi Susana,

I have been advised the person who can reply to your inquiry below, is out of the office until next week. For this reason, we will provide you a response by Friday, August 25. I apologize about the delay.

Thank you,

Yvonne Pinedo
Regulatory Affairs
Golden State Water Company
630 E. Foothill Blvd.
San Dimas, CA 91773
909-394-3600 ext. 636
ypinedo@gswater.com

From: Nasserie, Susana <susana.nasserie@cpuc.ca.gov>
Sent: Wednesday, August 16, 2023 9:29 AM
To: Darney-Lane, Jenny A. <jadarneylane@gswater.com>; Pinedo, Yvonne <ypinedo@gswater.com>
Cc: Chan, Victor <victor.chan@cpuc.ca.gov>; Aslam, Mehboob <mehboob.aslam@cpuc.ca.gov>; Palmer, Brett <Brett.Palmer@cpuc.ca.gov>
Subject: Unit of Time (GSWC's response to DR SN2-002)

Hi Jenny,

Please clarify the unit of time used for the power outage at Folsom South Canal and Coloma Pyrites WTP provided in GSWC's response to DR SN2-002.
For example, Cal Advocates is unclear the unit of time (hr, min, sec) used for "0:00:04" on 5/16/2014 at Folsom South.
Please provide the unit of time in minute.

Thank you,

J Susana Nasserie
Utilities Engineer
California Public Utilities Commission
Public Advocates Office (CAL Advocates) | Water Branch – Los Angeles Office
320 West 4th Street, Ste. 500
Los Angeles, CA 90013
(213) 576-7046 | susana.nasserie@cpuc.ca.gov

Attachment Chapter 2:
Bay Point CSA

(No Attachments)

Attachment Chapter 3:
Clearlake CSA

Attachment 3-1

GSWC's response to DR SN2-016, including a selected attachment:

1) Question 1.

December 18, 2023

To: Susan Nasserie, Public Advocates Office
CALIFORNIA PUBLIC UTILITIES COMMISSION
505 Van Ness Avenue
San Francisco, CA 94102

Subject: Data Request SN2-016 (A.23-08-010) Manchester Plant
Due Date: December 18, 2023

Dear Susan Nasserie,

In response to the above referenced data request number, we are pleased to submit the following responses:

Manchester Plant, site improvement for $394,900 (2025 and 2026)

Referring to Golden State Testimony's Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – PA: Manchester Plant, Site Improvements, pages 60-61.

Question 1:
Please provide the maintenance and repair records (and reports) for the pump on the Manchester Plant.

Response 1:
Ongoing regular maintenance is performed by operations staff, however no written records were able to be located. See attachment 'SN2-016 Q1 - Pump Tests'.

Question 2:
See pictures 1 & 2 taken during Cal Advocates' field trip to the Manchester plant on October 30, 2023. During the site visit, GSWC did not open the roof of the wooden structure. Please explain whether the roof can be opened to allow authorized staff to operate or service the pump.

Picture-1. *Cal Advocates field trip to Manchester plant site on October 30, 2023*

Picture-2. *Cal Advocates field trip to Manchester plant site on October 30, 2023*

Response 2:
The roof structure is hinged and capable of being held open for access to the pump and motor, but it is cumbersome and not ideal for maintenance as it is difficult for the operator to move around the equipment in such a small space.

Question 3:
In what year was the wooden structure built?

Response 3:
The wooden structure was built in 1983 when the pump station was built.

Question 4:
Provide dimensions of the wooden structure.

Response 4:
The wooden structure is 8 ft long x 4 ft wide x 3.5 ft high.

Question 5:
Referring to GSWC's workpapers file: PCE_RI - Clearlake (Manchester Plant, Site Improvements), tab: Estimate Creator, line 118. GSWC identifies a building structure item with a unit cost of $98,000 based on installing a pump house at the Fitzgerald Plant.

a. Provide a cost breakdown to derive the $98,000 building structure cost (cell: I118) (in Excel format).
b. Include the supporting documentation such as invoices etc.
c. Identify what kind/type of building structure pump house that was built at the Fitzgerald Plant.
d. Identify the perimeter length of Manchester Plant, and also provide supporting documentation such as a facility map or a site plan that supports GSWC's estimate of the plant's perimeter of 315 LF in the PCE referred above (cell: D121).

Response 5:

a. The unit cost of $98,000 was determined by DCW, based on their expertise and discussions between DCW and GSWC Engineering Planning and Capital Program Management staff.
b. Other than the PCE, no additional supporting documentation is available.
c. The Manchester Plant PCE was based on the wooden structure proposed at the Fitzgerald Plant.
d. The Manchester Plant perimeter is 300 LF. The 315 LF accounts for a recessed vehicular entrance to allow operators to park their vehicles out of the roadway while opening the gate. See attachment 'SN2-016 Q5 – Site Plan'.

END OF RESPONSE

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Golden State Water Company		Test Date:	06/04/2019
3831 Manchester		Pump type:	CB
		Plant:	Manchester A
		System:	Clearlake

A test was made on this booster pump and the following information was obtained.

EQUIPMENT

PUMP:	Aurora	SERIAL:	83-13499
MOTOR:	US	SERIAL:	R-9009-03-720
H.P.	50	LAT/LON:	38.57.445n122.38.200w
METER:	1005826642	REF #:	PC 838

TEST RESULTS

	TEST 1	TEST 2
Discharge, PSI	159.0	170.0
Discharge head, feet	367.3	392.7
Suction head, PSI	39.0	43.0
Suction head, feet	90.1	99.3
Total pumping head, feet	277.2	293.4
Gallons per minute flow	**399**	**337**
Acre feet pumped per 24 hours	1.764	1.491
KW input to motor	34.5	32.2
HP input to motor	46.2	43.1
Motor load, % BHP	83.4	77.8
Measured speed of pump, RPM	3550	
KWH per acre foot	469.3	518.4
Overall plant efficiency in %	**60.5**	**57.9**

The above test results indicate various conditions under which this pump operates.

If you have any questions please contact Jon Lee at (951) 684-9801.

ANNUAL PUMPING COST ANALYSIS

Golden State Water Company

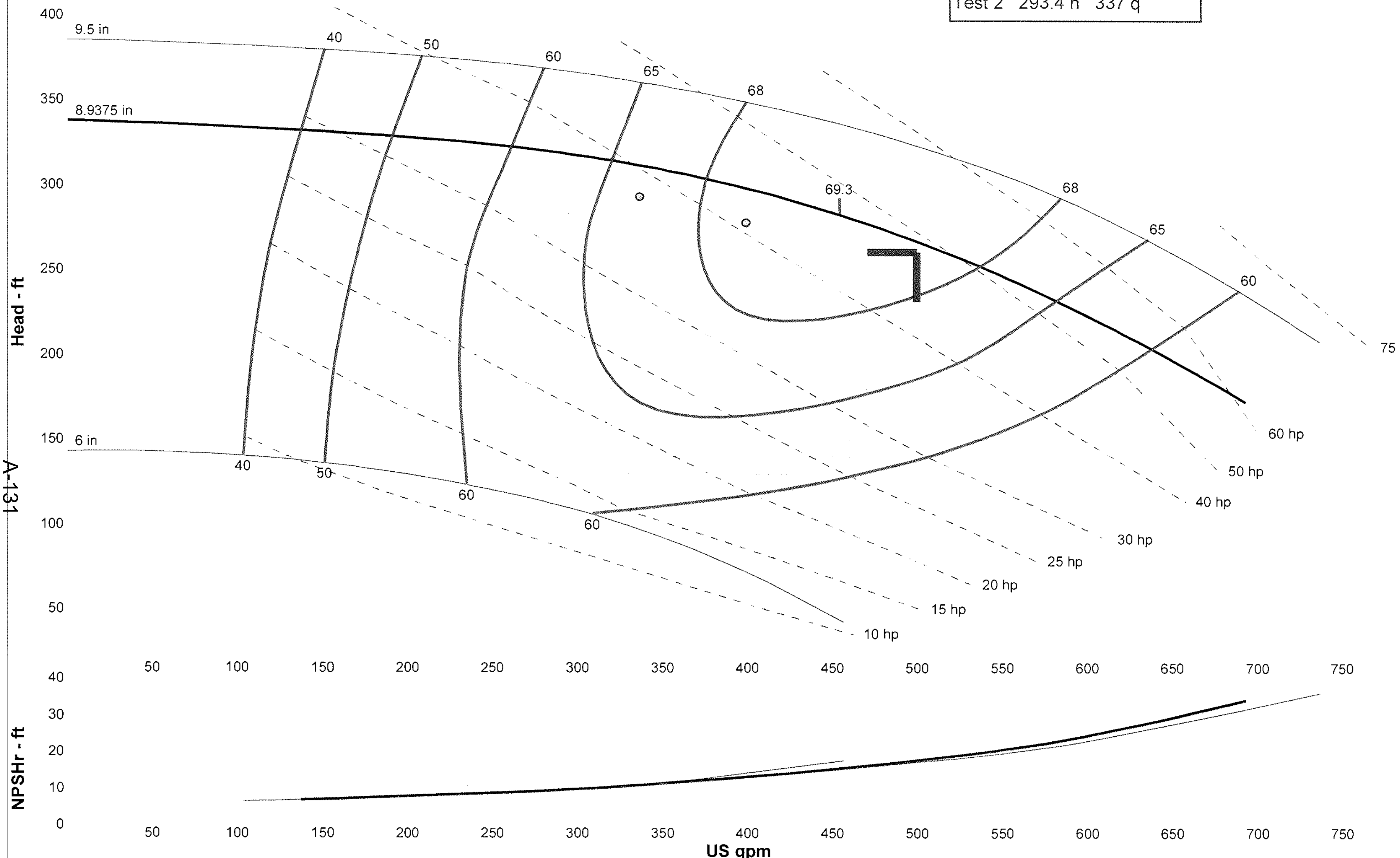
Test date: 06/04/2019

Plant: Manchester A
H.P. 50

The following cost analysis is presented as an aid to your cost accounting and planning. It is an **Estimate** based on the pump test data and your energy use or hours of operation during the previous 12-month period.

	EXISTING CONDITIONS	
Total annual kWhrs	173	
Total annual cost	$40.81	
Average Cost per kWh	$0.2366	
	TEST 1	TEST 2
KWh per acre foot at test speed	469.3	518.4
Cost per acre foot at test speed	$111.03	$122.66
Overall plant efficiency	60.5	57.9

Manchester A 6/04/2019
Test 1 277.2 h 399 q
Test 2 293.4 h 337 q



Company: GSWC Clearlake
Name: Manchester A
9/7/2010

AURORA PUMPS
Catalog: Aurora Pumps 60 Hz, Vers 3.4
410 1 STG SPLIT CASE - 3600
Design Point: 500 US gpm, 260 ft

Size: 2.5x3x10B
Speed: 3550 rpm
Dia: 8.9375 in
Curve: 2PC-117357B
Impeller: 444A251

AURORA
Pentair Water

Pump Check 5/97

(951) 684-9801

GOLDEN STATE WATER COMPANY

Field Pump Test Sheet

System CLEARLAKE Plant MANCHESTER Pump A

Pump Location 3831 MANCHESTER AVE Pump Type CB

PUMP DATA PC838 SCE ~~Ref/State Well~~ # 38.57.445N 122.38.200W

Pump AURORA Type Wtr (Syst) Ser. No. 83-13499

Well Depth Pump Setting No. Stages Size & Type

Rated Head 260 Rated Capacity 500 Rated Speed

MOTOR DATA

Make US Frame 324TS Type DP Ser. No. R-9009-03-720

HP 50 Volts 460 Amps 63 Phase 3 Code G Speed 3550

TEST DATA System Static ______ System Pressure ______ (DOA/ROA)Time ______

Test Points	#1 RANGE	#2	#3	#4
Discharge P.S.I.	159.0	170.0		
Suction PSI/~~VAC~~	39.0	43.0		
Discharge Head Ft.	367.3	392.7		
Suction ~~Lft~~/Hd Ft.	90.1	99.3		
Drawdown Feet DS	116.0	114.0		
Pumping Level				
Total Head-Ft.	277.2	293.4		
Turb./Merc.				
Hall Flow Meter	15.15	12.8		
G.P.M.	399	337		
Water Meter GPM	398			
Gals/Ft. Drawdown				
Acre Ft./24 hrs.	1.764	1.491		
Revs. Secs.	22.8/11.7	21.5/10.7		ONLY
KW Input	34.5	32.2		LOAD
HP Input	46.2	43.1		
Water HP	27.9	25.0		
B.H.P. @ 90.2 %	41.7	38.9		
Motor Load in %	83.4	77.8		
Pump RPM	3550			
KWH/Acre Ft.	469.4	518.3		
Over-all Eff.	60.5	57.9		

Water Level Ft.

Gauge #= Ft.

Airline= Ft.

Pipe ID 5 13/16 CAP SVC VAULT

Area 26.355

Utility Co. PG+E

Meter # 1005826642

Volts 120-480

K_h 21.6 Mult.

No Load Voltage

Test Point			
Volts	474	476	482
Amps 49	47	47	53

KVA 40.5 P.F. 85.2

Water Meter # 943955-04

WATER SPECIALTIES

Cal. GAL x 100

Revs. 10 Secs. 150.80

$/kWH 0.2366 KW 29.7

Hr/yr 5 Imp. Eff. 70

Hr. Meter 01231.3

Remarks CODE F. PUMP EFF #1 67.1% #2 64.2%. CHECKS APPROX 50 GPM BELOW THE CURVE.

Tested by: CS + MARK Date 6-4-19

188253 WM 39090 KWH

PUMP CHECK

Pumping Systems Analysts

Since 1958

(951) 684-9801 • Lic. 799498 • Fax (951) 684-2988

Hydraulic Test Report

Golden State Water Company
3831 Manchester

Test Date:	06/02/2020
Pump type:	CB
Plant:	Manchester A
System:	Clearlake

A test was made on this booster pump and the following information was obtained.

EQUIPMENT

PUMP:	Aurora	SERIAL:	83-13499
MOTOR:	US	SERIAL:	R-9009-03-720
H.P.	50	LAT/LON:	38.57.445n122.38.200w
METER:	1005826642	REF #:	PC 838

TEST RESULTS

	TEST 1	TEST 2
Discharge, PSI	165.0	175.0
Discharge head, feet	381.2	404.3
Suction head, PSI	46.0	46.5
Suction head, feet	106.3	107.4
Total pumping head, feet	274.9	296.8
Gallons per minute flow	**401**	**335**
Acre feet pumped per 24 hours	1.770	1.479
KW input to motor	35.0	34.3
HP input to motor	46.9	46.0
Motor load, % BHP	84.6	82.9
Measured speed of pump, RPM	3551	
KWH per acre foot	474.5	556.6
Overall plant efficiency in %	**59.3**	**54.6**

The above test results indicate various conditions under which this pump operates.

If you have any questions please contact Jon Lee at (951) 684-9801.

P.O. Box 5646, Riverside, California 92517

ANNUAL PUMPING COST ANALYSIS

Golden State Water Company

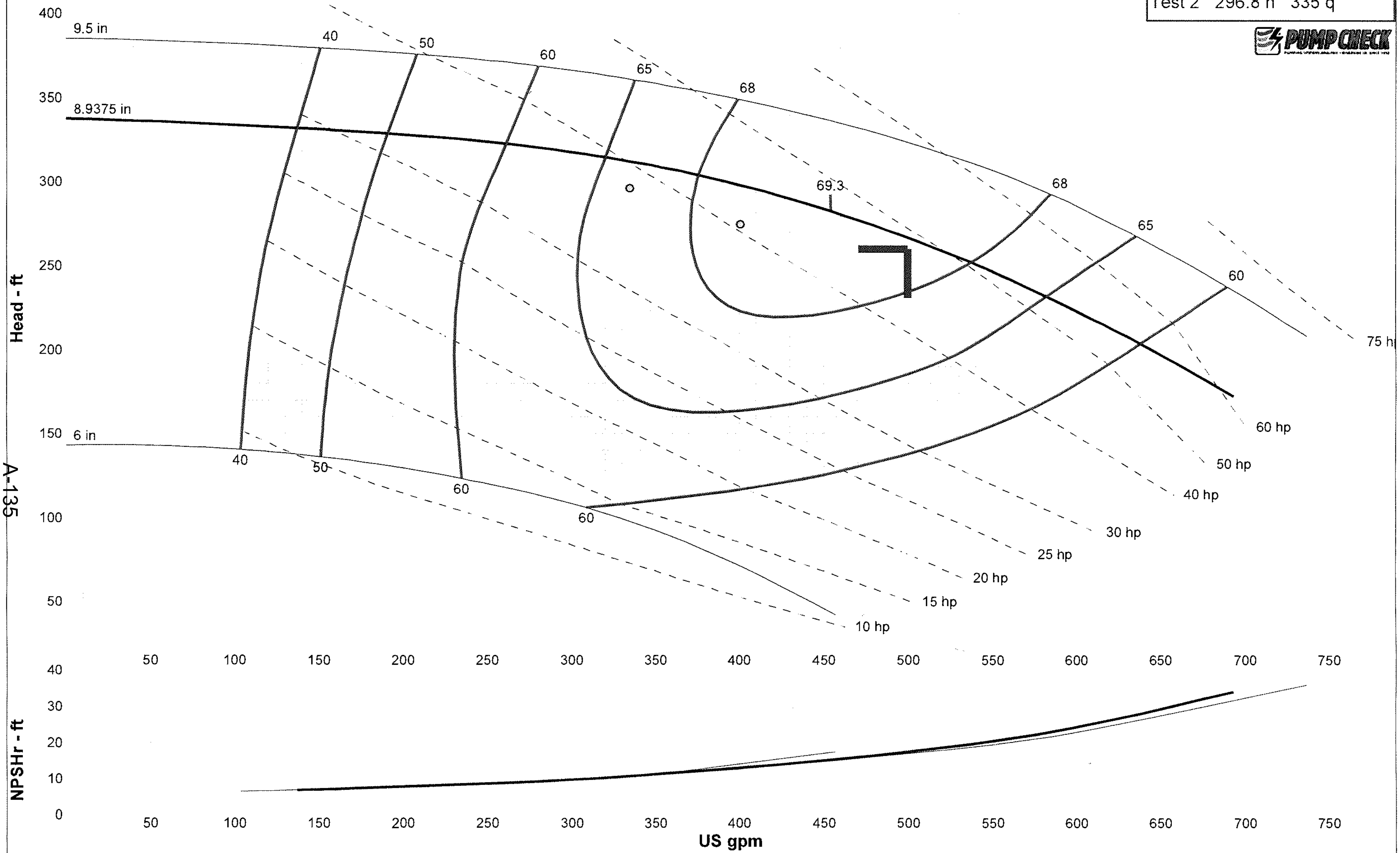
Test date: 06/02/2020

Plant: Manchester A
H.P. 50

The following cost analysis is presented as an aid to your cost accounting and planning. It is an **Estimate** based on the pump test data and your energy use or hours of operation during the previous 12-month period.

	EXISTING CONDITIONS	
Total annual kWhrs	35	
Total annual cost	$5.61	
Average Cost per kWh	$0.1603	
	TEST 1	TEST 2
KWh per acre foot at test speed	474.5	556.6
Cost per acre foot at test speed	$76.07	$89.22
Overall plant efficiency	59.3	54.6

Manchester A		6/02/2020
Test 1	274.9 h	401 q
Test 2	296.8 h	335 q



Company: GSWC Clearlake
Name: Manchester A
9/7/2010

AURORA PUMPS
Catalog: Aurora Pumps 60 Hz, Vers 3.4
410 1 STG SPLIT CASE - 3600
Design Point: 500 US gpm, 260 ft

Size: 2.5x3x10B
Speed: 3550 rpm
Dia: 8.9375 in
Curve: 2PC-117357B
Impeller: 444A251

AURORA® Pentair Water

Acct # 1523128180
Kwhs: 632

Pump Check 5/97

(951) 684-9801

GOLDEN STATE WATER COMPANY

Field Pump Test Sheet

System CLEARLAKE Plant MANCHESTER Pump A

Pump Location 3831 MANCHESTER AVE Pump Type CB

PUMP DATA PC 838 ~~SCE Ref/State Well~~ # 38.57.445N 122.39.200W

Pump AURORA Type Wtr(Syst) Ser. No. 83-13499

Well Depth Pump Setting No. Stages Size & Type

Rated Head 260 Rated Capacity 500 Rated Speed

MOTOR DATA

Make US Frame 324TS Type DP Ser. No. R-9009-03-720

HP 50 Volts 460 Amps 63 Phase 3 Code G Speed 3550

TEST DATA System Static ______ System Pressure ______ (DOA/ROA)Time ______

Test Points	#1 RANGE	#2	#3	#4
Discharge P.S.I.	165.0	175.0		
Suction PSI/~~VAC~~	46.0	46.5		
Discharge Head Ft.	381.2	404.3		
Suction ~~Lft~~/Hd Ft.	106.3	107.4		
Drawdown Feet				
Pumping Level				
Total Head-Ft.	274.9	296.9		
Turb./Merc.				
Hall Flow Meter	15.2	12.7		
G.P.M.	401	335		
Water Meter GPM	396			
Gals/Ft. Drawdown				
Acre Ft./24 hrs.	1.770	1.479		
Revs. Secs.	12.3 / 22.7	12.2 / 22.1	ONLY 1	
KW Input	35.0	34.3	LOAD	
HP Input	46.9	46.0		
Water HP	27.8	25.1		
B.H.P. @90.2 %	42.3	41.5		
Motor Load in %	84.6	82.9		
Pump RPM	3551			
KWH/Acre Ft.	474.6	556.6		
Over-all Eff.	59.4	54.6		

Water Level Ft.
Gauge #= Ft.
Airline= Ft.
Pipe ID 5 13/16 CAP SE WNG
Area 26.355
Utility Co. PG+E
Meter # 1005826642
Volts 120-480
K_h 21.6 Mult.
No Load Voltage

Test Point

Volts	471	472	478
Amps 51.7	49	50	56

KVA 42.4 P.F. 82.5
Water Meter # 943955-04
WATER SPECIALTIES
Cal. GAL x 100
Revs. 18 Secs. 272.62
18 269.11
16 222.99
$/kWH 0.1603 KW 29.6
Hr/yr 1 Imp. Eff. 70
Hr. Meter 01231.7

Remarks CODE F. PUMP EFF #1 65.9% #2 60.5%. CHECKS APPROX 50 GPM BELOW THE CURVE.

Tested by: CSI MARK Date 6-2-2020

39655 188322

333

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PUMP CHECK

Pumping Systems Analysts

Hydraulic Test Report

(951) 684-9801 • Lic. 799498 • Fax (951) 684-2988

Golden State Water Company
3831 Manchester Avenue

Test Date: 06/08/2021
Pump type: CB
Plant: Manchester A
System: Clearlake

A test was made on this booster pump and the following information was obtained.

EQUIPMENT

PUMP:	Aurora	SERIAL:	83-13499
MOTOR:	US	SERIAL:	R-9009-03-720
H.P.	50	LAT/LON:	38.57.445n122.38.200w
METER:	1005826642	REF #:	PC 838

TEST RESULTS

	TEST 1	TEST 2
Discharge, PSI	153.0	189.0
Discharge head, feet	353.4	436.6
Suction head, PSI	44.0	51.5
Suction head, feet	101.6	119.0
Total pumping head, feet	251.8	317.6
Gallons per minute flow	**464**	**206**
Acre feet pumped per 24 hours	2.050	0.908
KW input to motor	35.6	26.1
HP input to motor	47.7	35.0
Motor load, % BHP	86.1	63.1
Measured speed of pump, RPM	3549	
KWH per acre foot	416.8	689.6
Overall plant efficiency in %	**61.8**	**47.1**

The above test results indicate various conditions under which this pump operates.

If you have any questions please contact Jon Lee at (951) 684-9801.

P.O. Box 5646, Riverside, California 92517

ANNUAL PUMPING COST ANALYSIS

Golden State Water Company

Test date: 06/08/2021

Plant: Manchester A
H.P. 50

The following cost analysis is presented as an aid to your cost accounting and planning. It is an **Estimate** based on the pump test data and your energy use or hours of operation during the previous 12-month period.

	EXISTING CONDITIONS	
Total annual kWhrs	1709	
Total annual cost	$893.70	
Average Cost per kWh	$0.5230	
	TEST 1	TEST 2
KWh per acre foot at test speed	416.8	689.6
Cost per acre foot at test speed	$218.01	$360.65
Overall plant efficiency	61.8	47.1

Acct # 1523128180
Kwhs: 1104.5

Pump Check 5/97

(951) 684-9801

GOLDEN STATE WATER COMPANY

Field Pump Test Sheet

System CLEARLAKE Plant MANCHESTER Pump A

Pump Location 3031 MANCHESTER AVE Pump Type CB

PUMP DATA PC838 ~~SCE Ref/State Well~~ # 38.57.445N 122.38.200W

Pump AURORA Type Wtr (Syst) Ser. No. 83-13499

Well Depth Pump Setting No. Stages Size & Type

Rated Head 260 Rated Capacity Rated Speed

MOTOR DATA

Make US Frame 324TS Type DP Ser. No. R-9009-03-720

HP 50 Volts 460 Amps 63 Phase 3 Code G Speed 3550

TEST DATA System Static ____ System Pressure ____ (DOA/ROA)Time ____

Test Points	#1 RANGE	#2	#3	#4
Discharge P.S.I.	153.0	189.0		
Suction PSI/V~~ac~~	44.0	51.5		
Discharge Head Ft.	353.4	436.6		
Suction ~~Lft~~/Hd Ft.	101.6	119.0		
~~Drawdown Feet~~ DS	115.0			
Pumping Level				
Total Head-Ft.	251.5	317.6		
Turb./Merc.				
Hall Flow Meter	17.6	7.8		
G.P.M.	464	206		
Water Meter GPM				
Gals/Ft. Drawdown				
Acre Ft./24 hrs.	2.050	.908		
Revs. Secs.	22.8/12.8	18.7/7.4		ONLY
KW Input	35.6	26.1		LOAD
HP Input	47.7	35.0		
Water HP	29.5	16.5		
B.H.P. @ 90.2 %	43.0	31.5		
Motor Load in %	86.1	63.1		
Pump RPM	3549			
KWH/Acre Ft.	416.8	689.9		
Over-all Eff.	61.8	47.2		

Water Level Ft.

Gauge #= Ft.

Airline= Ft.

Pipe ID 5 13/16 CURP SVC VAULT

Area 26.355

Utility Co. PG&E

Meter # 1005826642

Volts 120-480

K_h 21.6 Mult.

No Load Voltage

Test Point

Volts	480	473	481
Amps 55	53	55	57

KVA 45.5 P.F. 78.2

Water Meter # 94395504

WATER SPECIALTIES

Cal. GAL x 100

Revs. Secs.

$/kWH 0.5230 KW 31.4

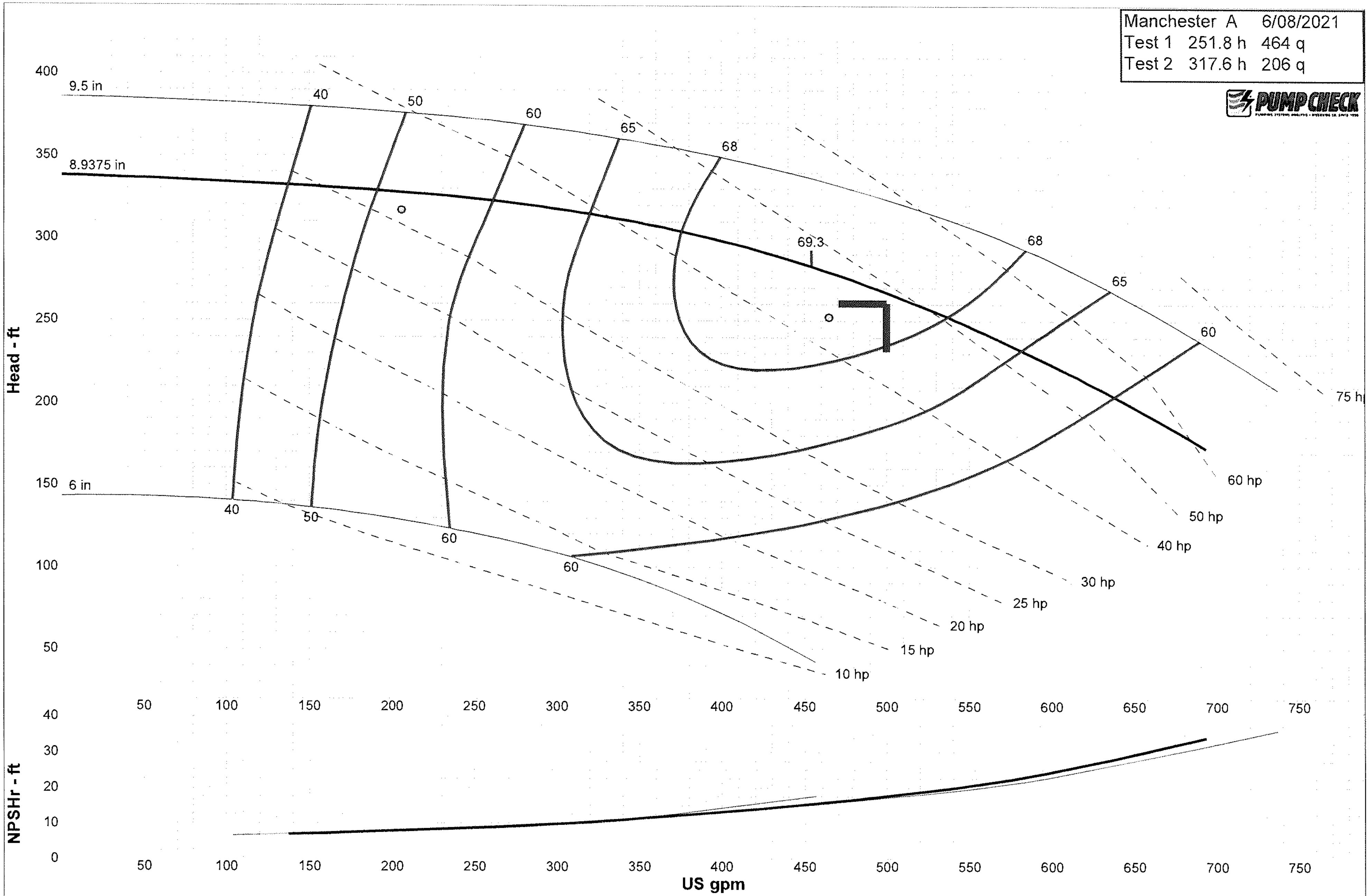
Hr/yr 48 Imp. Eff. 70

Hr. Meter 01279.7

Remarks CURE F. CHECKS APPROX 50 GPM BELOW THE CURVE.

Tested by: CS + MARK Date 6-8-21

194657 wm 41464 KWH



Company: GSWC Clearlake
Name: Manchester A
9/7/2010

AURORA PUMPS
Catalog: Aurora Pumps 60 Hz, Vers 3.4
410 1 STG SPLIT CASE - 3600
Design Point: 500 US gpm, 260 ft

Size: 2.5x3x10B
Speed: 3550 rpm
Dia: 8.9375 in
Curve: 2PC-117357B
Impeller: 444A251

ap AURORA
Pentair Water

PUMP CHECK
Pumping Systems Analysts
Hydraulic Test Report

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Golden State Water Company
3831 Manchester Avenue

Test Date:	06/07/2022
Pump type:	CB
Plant:	Manchester A
System:	Clearlake

A test was made on this booster pump and the following information was obtained.

EQUIPMENT

PUMP:	Aurora	SERIAL:	83-13499
MOTOR:	US	SERIAL:	R-9009-03-720
H.P.	50	LAT/LON:	38.57.445n122.38.200w
METER:	1005826642	REF #:	PC 838

TEST RESULTS

	TEST 1	TEST 2
Discharge, PSI	152.0	169.0
Discharge head, feet	351.1	390.4
Suction head, PSI	37.0	41.0
Suction head, feet	85.5	94.7
Total pumping head, feet	265.7	295.7
Gallons per minute flow	**414**	**319**
Acre feet pumped per 24 hours	1.828	1.409
KW input to motor	35.8	33.4
HP input to motor	48.0	44.8
Motor load, % BHP	86.5	80.7
Measured speed of pump, RPM	3551	
KWH per acre foot	469.9	568.8
Overall plant efficiency in %	**57.9**	**53.2**

The above test results indicate various conditions under which this pump operates.

If you have any questions please contact Jon Lee at (951) 684-9801.

P.O. Box 5646, Riverside, California 92517

Acct # 1523128180
KWhs'

Pump Check 5/97
(951) 684-9801

GOLDEN STATE WATER COMPANY
Field Pump Test Sheet

System CLEARLAKE Plant MANCHESTER Pump A
Pump Location 3831 MANCHESTER AVE Pump Type CB
PUMP DATA PC 838 SCE ~~Ref/State Well~~ # 38.57.445N 122.38.200W
Pump AURORA Type Wtr (Syst) Ser. No. 83-13499
Well Depth Pump Setting No. Stages Size & Type 2.5 x 3 x 10B
Rated Head 260 Rated Capacity 500 Rated Speed 3550

MOTOR DATA
Make US Frame 324TS Type DP Ser. No. R-9009-03-720
HP 50 Volts 460 Amps 63 Phase 3 Code G Speed 3550

TEST DATA System Static 110.0 System Pressure 117.0 (DOA/ROA) Time

Test Points	#1 RANGE	#2	#3	#4
Discharge P.S.I.	152.0	169.0		
Suction PSI/~~VAC~~	37.0	41.0		
Discharge Head Ft.	351.1	390.4		
Suction ~~Lft~~/Hd Ft.	85.5	94.7		
Drawdown Feet				
Pumping Level				
Total Head-Ft.	265.6	295.7		
Turb./Merc.				
Hall Flow Meter	15.7	12.1		
G.P.M.	414	319		
Water Meter GPM				
Gals/Ft. Drawdown				
Acre Ft./24 hrs.	1.828	1.409		
Revs. Secs.	12.4/23.4	11.3/22.1		ONLY
KW Input	35.8	33.4		LOW
HP Input	48.0	44.8		
Water HP	27.8	23.8		
B.H.P. @ 90.2 %	43.3	40.4		
Motor Load in %	86.5	80.7		
Pump RPM	3551			
KWH./Acre Ft.	470.0	568.9		
Over-all Eff.	57.8	53.2		

Water Level Ft.
Gauge #= Ft.
Airline= Ft.
Pipe ID 5 13/16 CONST SCH. WALT
Area 26.355
Utility Co. PG+E 42998
Meter # 1005826642
Volts 120-480
K_h 21.6 Mult.
No Load Voltage

Test Point			
Volts	477	476	483
Amps 53	51	53	55

KVA 43.9 P.F. 81.5
Water Meter # 943955-04
WATER SPECIALTIES
Cal. GAL x 100
Revs. Secs.

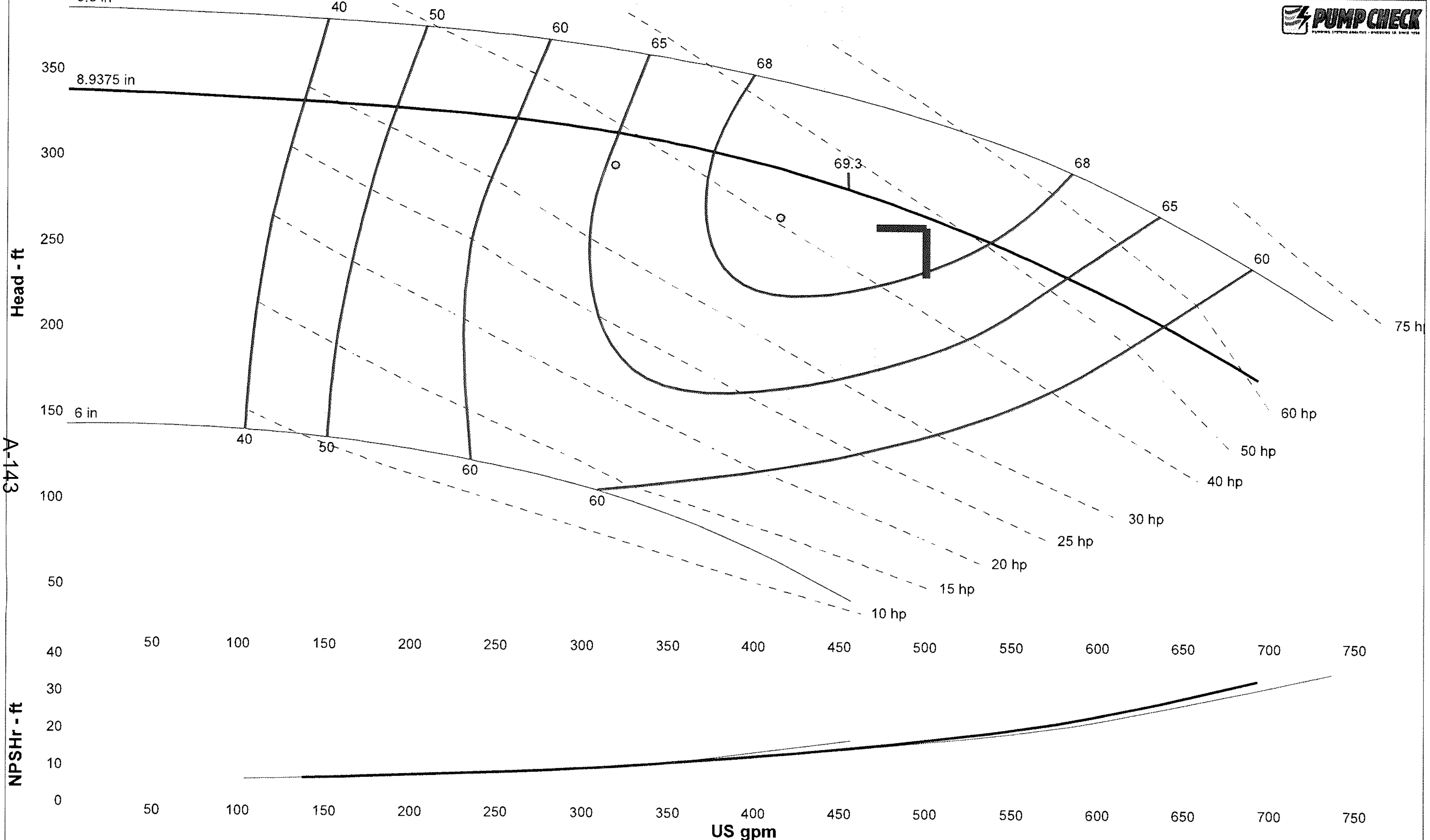
$/kWH 0.5230 KW 29.6
Hr/yr 45 Imp. Eff. 70
Hr. Meter 01324.9

Remarks CODE F, CHECKS APPROX 50 GPM BELOW THE CURVE.

Tested by: CS + MARK Date 6/7/22
198065

Manchester A		6/07/2022
Test 1	265.7 h	414 q
Test 2	295.7 h	319 q

PUMP CHECK



Company: GSWC Clearlake
Name: Manchester A
9/7/2010

AURORA PUMPS
Catalog: Aurora Pumps 60 Hz, Vers 3.4
410 1 STG SPLIT CASE - 3600
Design Point: 500 US gpm, 260 ft

Size: 2.5x3x10B
Speed: 3550 rpm
Dia: 8.9375 in
Curve: 2PC-117357B
Impeller: 444A251

AURORA Pentair Water

PUMP CHECK

Pumping Systems Analysts

Hydraulic Test Report

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Golden State Water Company		Test Date:	06/06/2023
3831 Manchester Avenue		Pump type:	CB
		Plant:	Manchester A
		System:	Clearlake

A test was made on this booster pump and the following information was obtained.

EQUIPMENT

PUMP:	Aurora	SERIAL:	83-13499
MOTOR:	US	SERIAL:	R-9009-03-720
H.P.	50	LAT/LON:	38.57.445n122.38.200w
METER:	1005826642	REF #:	PC 838

TEST RESULTS

	TEST 1	TEST 2
Discharge, PSI	167.0	178.0
Discharge head, feet	385.8	411.2
Suction head, PSI	47.0	49.0
Suction head, feet	108.6	113.2
Total pumping head, feet	277.2	298.0
Gallons per minute flow	**398**	**314**
Acre feet pumped per 24 hours	1.759	1.386
KW input to motor	35.1	33.2
HP input to motor	47.0	44.5
Motor load, % BHP	84.8	80.3
Measured speed of pump, RPM	3553	
KWH per acre foot	479.0	574.9
Overall plant efficiency in %	**59.2**	**53.0**

The above test results indicate various conditions under which this pump operates.

If you have any questions please contact Jon Lee at (951) 684-9801.

P.O. Box 5646, Riverside, California 92517

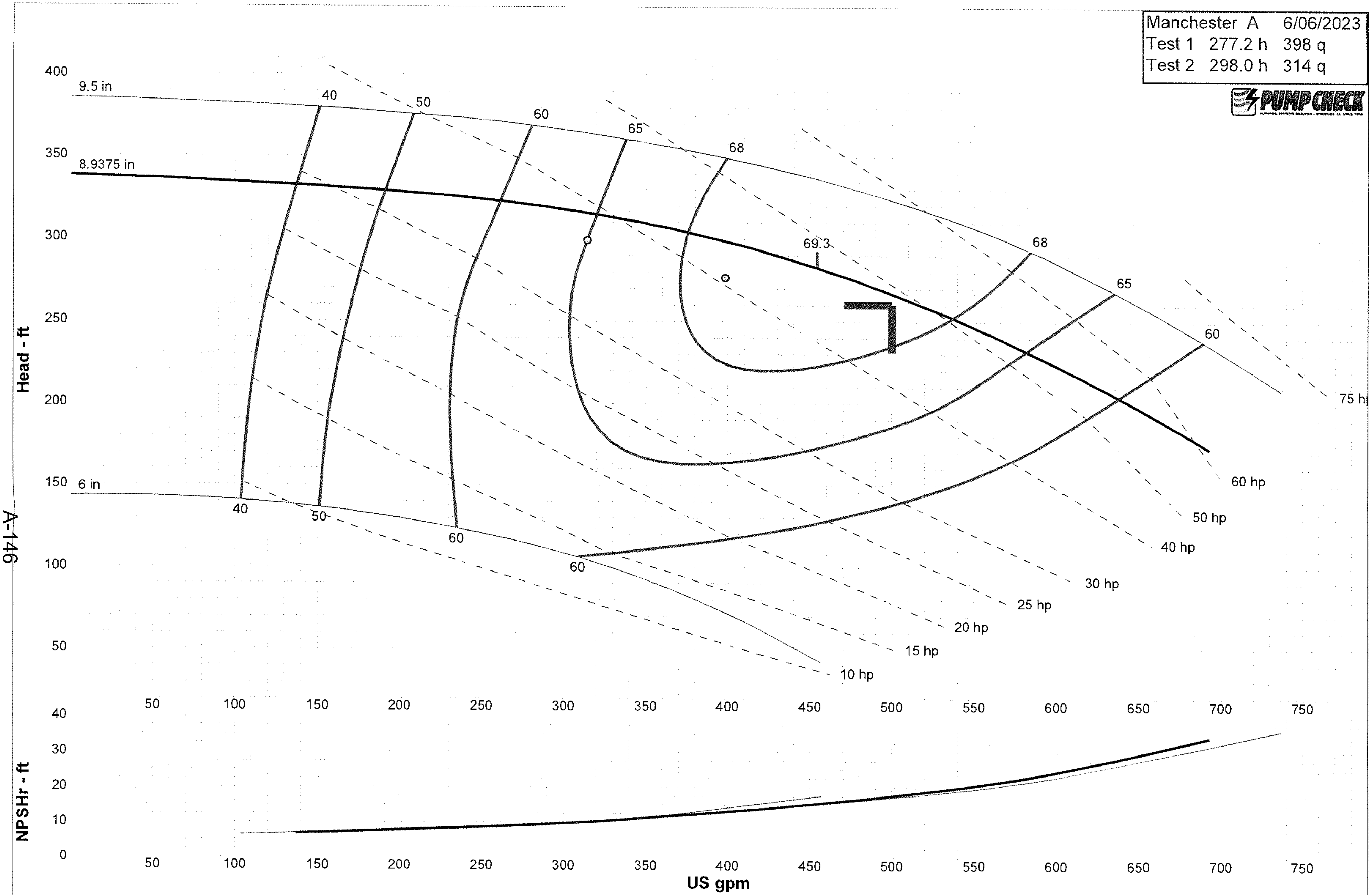
ANNUAL PUMPING COST ANALYSIS

Golden State Water Company Test date: 06/06/2023

Plant: Manchester A
H.P. 50

The following cost analysis is presented as an aid to your cost accounting and planning. It is an **Estimate** based on the pump test data and your energy use or hours of operation during the previous 12-month period.

	EXISTING CONDITIONS	
Total annual kWhrs	35	
Total annual cost	$18.36	
Average Cost per kWh	$0.5230	Estimated
	TEST 1	TEST 2
KWh per acre foot at test speed	479.0	574.9
Cost per acre foot at test speed	$250.53	$300.69
Overall plant efficiency	59.2	53.0



Company: GSWC Clearlake
Name: Manchester A
9/7/2010

AURORA PUMPS
Catalog: Aurora Pumps 60 Hz, Vers 3.4
410 1 STG SPLIT CASE - 3600
Design Point: 500 US gpm, 260 ft

Size: 2.5x3x10B
Speed: 3550 rpm
Dia: 8.9375 in
Curve: 2PC-117357B
Impeller: 444A251

AURORA
Pentair Water

ACCT # 1523128180

Pump Check 5/97

(951) 684-9801

GOLDEN STATE WATER COMPANY

Field Pump Test Sheet

System CLEARLAKE Plant MANCHESTER Pump A

Pump Location 3831 MANCHESTER AVE Pump Type CB

PUMP DATA PC 838 SCE ~~Ref/State Well~~ # 38.57.445N 122.38.200W

Pump AURORA Type Wtr (Syst) Ser. No. 83-13499

Well Depth Pump Setting No. Stages Size & Type 2.5 x 3 x 10B

Rated Head 260 Rated Capacity 500 Rated Speed 3550

MOTOR DATA

Make US Frame 324TS Type DP Ser. No. R-9009-03-720

HP 50 Volts 460 Amps 63 Phase 3 Code G Speed 3550

TEST DATA System Static 111.0 System Pressure 118.0 (DOA/ROA) Time

Test Points	#1 RANGE	#2	#3	#4	
Discharge P.S.I.	167.0	178.0			Water Level Ft.
Suction PSI/~~VAC~~	47.0	49.0			Gauge #= Ft.
Discharge Head Ft.	385.8	411.2			Airline= Ft.
Suction ~~Lft~~/Hd Ft.	108.6	113.2			Pipe ID 5 13/16 CORP SE. VAULT
Drawdown Feet					Area 26.355
Pumping Level					Utility Co. PG+E 43620
Total Head-Ft.	277.2	298.0			Meter # 1005826642
Turb./Merc.					Volts 120-480
Hall Flow Meter	15.1	11.9			K_h 21.6 Mult.
G.P.M.	398	314			No Load Voltage
Water Meter GPM					
Gals/Ft. Drawdown					Test Point
Acre Ft./24 hrs.	1.759	1.386			Volts 478 / 478 / 482
Revs. Secs.	23.5 / 11.6	11.3 / 21.9		ONLY	Amps 52.3: 51 / 52 / 54
KW Input 34.3	35.1	33.2		LOAD	KVA 43.4 P.F. 80.9
HP Input	47.0	44.5			Water Meter # 943955-04
Water HP	27.9	23.6			WATER SPECIALTIES
B.H.P. @ 90.2 %	42.4	40.1			Cal. GAL x100
Motor Load in %	84.8	80.3			Revs. Secs.
Pump RPM	3553				
KWH/Acre Ft.	478.9	574.9			$/kWH .5230 KW 29.7
Over-all Eff.	59.3	53.1			Hr/yr / Imp. Eff. 70
					Hr. Meter 01325.5

Remarks CODE F. CHECKS APPROX 50 GPM BELOW THE CURVE

Tested by: CS + MARK Date 6/6/23

198168

Attachment 3-2. (Cal Advocates calculation for GSWC pump house of $260,400)

GSWC request for the Manchester Plant site improvement project of Pump House Construction and Fencing Installation is $394,900 in 2025 and 2026. Using GSWC's workpapers, Cal Advocates calculates the breakdown costs of GSWC pump house and chain link fence. As shown below, the total cost of demolishing and reconstructing the pump house including the cost adders is $260,400. The remaining cost is for chain link fencing related installations of $134,500. ($394,900 - $260,400 = $134,500)

Manchester Plant, Site Improveme

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Cost Estimate

April 6, 2023

	Direct Construction Costs	Mobilization	Payment and Performance Bond	Sales Tax	Direct Cost (Permits & Fees)
$	137,700.00	13,770.00	4,131.00	12,048.75	20,655.00

Direct Construction Costs		**137,700.00**
Mobilization	10.00%	13,770.00
Design Contingency		incl. in Capital Project List
Construction Contingency		incl. in Capital Project List
Payment and Performance Bond	3.00%	4,131.00
Sales Tax	8.75%	12,048.75
Escalation		incl. in Capital Project List
Direct Cost (Permits & Fees)	15%	20,655.00
Recommended Budget		**188,304.75**

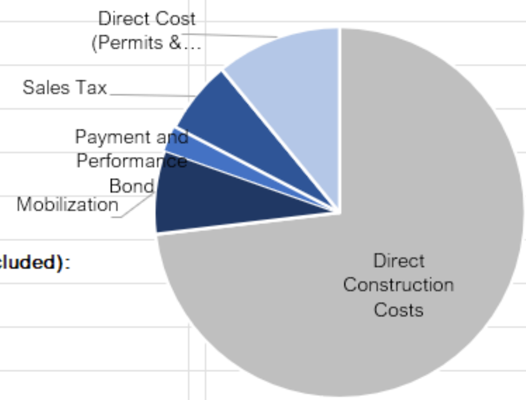
Detail

Item Description	**Quantity**	**Unit**	**Unit Rate**	**Total**
Building Structure	1	LS	124,950.00	124,950.00
Chain Link - 8Ft High	-	LF	146.63	
Demolition To Existing Fencing	-	LF	9.56	
Demolition To Existing Structures	1	EA	12,750.00	12,750.00
Gate - Vehicular, 16' Manual With Lock	-	EA	19,762.50	
Pedestrian Gate	-	EA	4,462.50	

Manchester Plant, Site Improvements
Cost Estimate

Total Project Cost:

Direct	$	20,655
Construction	$	167,650
Total	$	188,305



Total Project Cost (with Overhead, Contingency & Escalation included):

Direct	$	27,500
Construction	$	232,900
Total	$	260,400

Estimate Date	April 6, 2023	Water Distribution System	Clearlake System
Estimate By	Daniel Flores	District	Northern
Approved By	Mark Insco	Customer Service Area	Clearlake
Region	I	Region County	Lake

Project Description	Demo existing wood structure and chain-link fence and construct new wood building and enclose entire lot with fencing.

Attachment Chapter 4:
Los Osos CSA

Attachment 4-1

GSWC's response to DR SN2-013

Golden State
Water Company
A Subsidiary of American States Water Company

December 6, 2023

To: Susan Nasserie, Public Advocates Office
CALIFORNIA PUBLIC UTILITIES COMMISSION
505 Van Ness Avenue
San Francisco, CA 94102

Subject: Data Request SN2-013 (A.23-08-010) Well Rehab
Due Date (Extended): December 6, 2023

Dear Susan Nasserie,

In response to the above referenced data request number, we are pleased to submit the following responses:

<u>Well Rehabilitation for Rosina Well No.1 for $825k in 2026.</u>

Question 1:
Provide maintenance and repair/rehabilitation records for the Rosina Well No.1 since the well was constructed in 1980. Include all supporting documentation.

Response 1:
See attachment 'SN2-013 Q1 – Rosina 1 Records'.

Question 2:
Provide the original capacity (gallons per minute/gpm) of Rosina Well No.1.

Response 2:
The highest pumping rate from Rosina Well No. 1 shortly after construction was about 415 gpm, occurring in February 1981, about 4 months after the well was placed into service. The highest pumping rate from Rosina Well No. 1 on record was approximately 480 gpm, which occurred in March of 1992.

Question 3:
What is the estimated well capacity after the completion of rehabilitation?

a) Provide any and all evidence that GSWC possesses documenting or demonstrating the expectation of gain well capacity after the rehabilitation. This includes, but is not limited to, any engineering reports or internal company communications, including emails or memorandums.

Response 3:
Estimating or predicting the yield or pumping rate of any well following rehabilitation is unrealistic, given the large number of variables influencing 1) the pumping rate of a well, and 2) the ability of groundwater flow through aquifer sediments, filter pack, and/or well screen to be improved by removal of poorly understood plugging or clogging materials, which depends partly on rehabilitation methodology. See attachment 'SN2-013 Q3 – Rosina 1 Chart'. The attached chart for Rosina Well No. 1 well documents the improvement in the pumping rate of the well, from about 350 gpm to about 420 gpm, following rehabilitation in October of 2009, which, in this case, involved the use of acid to remove plugging or clogging materials. More importantly, the attached chart demonstrates how the specific capacity of Rosina Well No. 1 improved from about 27 gpm/ft to about 43 gpm/ft following rehabilitation in October 2009.

Question 4:
How long will the rehabilitation extend the life of the Rosina well?

a) Provide any and all evidence that GSWC possesses documenting or demonstrating the expected well life extension as a result of the well rehabilitation. This includes, but is not limited to, any engineering reports or internal company communications, including emails or memorandums.

Response 4:
Estimating or predicting the length of time that any well's life will be extended following rehabilitation is unrealistic, given 1) the different variables influencing the lifespan of a well in the absence of rehabilitation, and 2) the imprecise ability of one or more rehabilitation events to prolong replacement of a well. In addition, the lifespan of a well is somewhat relative, in that a well may reach the end of its physical life, for example due to failure of the well screen via corrosion and/or erosion, or instead may reach the end of its useful life, for example if the well cannot be pumped at some required or intended rate due to severe plugging or clogging of the aquifer sediments, filter pack, and/or well screen. Therefore, extending the life of a well should be considered more conceptual (e.g., prolonging replacement of the well) rather than absolute (e.g., extending the life of a well for a specific number of years up to a maximum) as a result of rehabilitation.

Question 5:
Explain whether GSWC has performed any capital projects at the Rosina Well No.1 in the past 4 GRCs. If yes, provide the details of the past work performed and the ratemaking treatment authorized by the Commission.

Response 5:
Yes, capital projects were performed at Rosina Well No.1 in the past four GRCs. See attachment 'SN2-013 Q5 – Rosina' for closing spreadsheets for each project. See attachment 'Authorized Q.5' for ratemaking treatment authorized by the Commission.

Question 6:
GSWC's annual reports identified the Rosina Well No.1 yearly production as shown in Table-1 below.[2]

Table-1. Rosina Well no.1 Production (AFY)	
Year	Production
2013	N/A
2014	69
2015	70
2016	82
2017	35
2018	14
2019	19
2020	28
2021	24
2022	9

Please provide the following information:

a) The annual productions for Rosina Well No.1 since the well entered into service to 2013.
b) For each question in Table-2 below, explain the reasons for the fluctuations of the well production. This includes, but is not limited to, reasons such as well maintenance, limitations due to well structure conditions, seawater intrusion problems, increase of nitrate problems, or a combination of problems. Use the attached excel file, LosOsosRehabWells for your response.

Table-2 Rosina Well No.I Productionfrom 2013 to 2022 (in AFY)

Year	Rosina well no.I production (AFY)	Observation (% +/-)	Question	Provide a detailed explanationof why the well productionincreased or decreased. (see question6.b).
2013	N/A		-	
2014	69		-	
2015	70		-	
2016	82	+17%	Why did the well production increase by 17% ?	
2017	35	- 57%	Why did the well production significantly decrease by 57% ?	
2018	14	- 60%	Why did the well production significantly decrease by 60%?	
2019	19	+ 36%	Why did the well production increase by 36% ?	
2020	28	+ 47%	Why did the well production increase by 47% ?	
2021	24	+ 14%	Why did the well production increase by 14% ?	
2022	9	- 63%	Why did the well production significantly decrease by 63% ?	

Response 6:

a) See attachment 'SN2-013 Q6 – Rosina 1 Annual Production'.
b) Generally, there are no specific reason for the fluctuation in production from Rosina well. GSWC does not have records to describe why the production fluctuated from year to year as requested. Production in all sources of supply is determined by customer demand and various operational factors.

Question 7:

Does GSWC have a Well Maintenance Program for Region 1 or each Region 1 Rate Making Area (RMA)?.

If yes, please provide a copy of the plan and explain the program in detail for Region 1 or each Region 1 RMA. Include all supporting documentation for the Well Maintenance Program.

If not, explain why not.

Response 7:

GSWC monitors and tracks the performance of each groundwater well as part of a maintenance process, by routinely measuring and graphically displaying key well performance indicators over the life of the well. GSWC developed a well groundwater levels dashboard utilizing Microsoft Power BI. The dashboard allows GSWC Water Supply Operators, Engineers, and Hydrogeologists, in lieu of a generic well maintenance plan, to view key well performance indicators over time, including static water levels, pumping water levels, well pumping rates, and specific capacity. When GSWC personnel detect a downturn in a key well performance indicator trend, we analyze data to ascertain whether the change is due to hydrogeological impacts of a drought, pump problems, well screen fouling, mechanical failure of the well, or a reduction in the permeability of the aquifer that feeds the well, for example. The actions taken by GSWC are commensurate with the findings of our analysis. That is, if we find the water levels in a groundwater basin have declined following a multiple year drought, we may do nothing in terms of well maintenance, but simply adjust the pump depth or setting. Similarly, if we find the well screen is plugged, we may engage a specialist to review our analysis, gather additional data, and develop a plan for cleaning or rehabilitating the well screen and adjacent materials, to restore well's specific capacity, which we may propose in a future rate case. If the specialist determines the well casing or screens have failed and the anticipated success of a downhole repair is unlikely, we may request a replacement well in a future rate case.

Referring to GSWC's Capital Testimony, Attachment LO04, the Wood Rodgers (WR), Assessment and Evaluation memo (Oct 2015).[3]

Question 8:
On p.4 of 14, section Water Quality, the WR consultant stated that increased production may lead to a greater degree of seawater intrusion.

a) Provide the most recent Rosina Well No.1 water quality testing results.
b) Is GSWC concerned about increased seawater intrusion resulting from increased production in Rosina Well No.1? Please explain in detail why or why not.
c) Provide any and all evidence that GSWC possesses documenting or demonstrating GSWC's plans and steps to remediate the seawater intrusion issue at Rosina Well No.1. This includes, but is not limited to, engineering reports or internal company communications, including emails or memorandums.
d) Provide any and all evidence that GSWC possesses documenting or demonstrating GSWC's plan and steps to remediate the nitrate contamination issue at the Rosina Well No. 1. This includes, but is not limited to, engineering reports or internal company communications, including emails or memorandums.
e) What basin is the Rosina Well No.1 located in?
f) Who is the authority in charge of basin management where the Rosina Well No.1 is located?
g) What actions has the basin management authority taken or recommended regarding seawater intrusion at Rosina Well No.1?
h) Provide any and all communications, including email, meeting minutes, reports, etc., between GSWC and the basin management authority or any outside contractors regarding seawater intrusion at Rosina Well No.1.
i) Provide any and all internal GSWC communications, including email, meeting minutes, reports, field notes, etc, regarding seawater intrusion at Rosina Well No.1.

Response 8:

a) https://www.slocounty.ca.gov/Departments/Groundwater-Sustainability/Forms-Documents/Los-Osos-Basin-Management-Committee-(BMC)/Annual-Reports/2022-LOBMC-Annual-Report-Final-061523.pdf). Additionally, GSWC total dissolved solids and chloride data for 2023 is included in attachment 'SN2-013 Q8a-WQ'.

b) The Los Osos Basin Plan[1] and ongoing actions by the BMC is to halt and potentially reverse sea water intrusion ("SWI"). Rosina is located in the axis of the SWI front and is a key monitoring well in understanding chloride conditions in the lower aquifer. Well maintenance ensures the well will continue to provide representative data in that effort. See discussion on Sea Water Intrusion in the 2022 Los Osos Basin Annual Monitoring Report section 7.3[2]

c) The BMC is tasked by the groundwater stipulation to implement the Los Osos Basin Plan which has metrics to track the progress in stopping and reversing SWI in the lower aquifer, address residual nitrate from historical septic uses in the upper aquifer, and maintain a sustainable basin yield to serve the existing users and potential growth, not GSWC individually at any particular well. See the Los Osos Basin Plan and the annual monitoring reports that are presented to the court in the ongoing groundwater adjudication.

d) See response 8c above.

e) Rosina Well is located in the adjudicated Los Osos Groundwater Basin (also classified by DWR as the "Los Osos Valley Basin, " (DWR Bulletin 118 Basin No. 3-008.01). The basin was adjudicated per a Stipulated Judgement in 2015.

f) The Los Osos Groundwater Basin (the Basin) was adjudicated in October 2015 (Los Osos Community Services District v. Southern California Water Company [Golden State Water Company] et al. (San Luis Obispo County Superior Court Case No. CV 040126) and is managed by the Los Osos Groundwater Basin Management Committee ("BMC"), consisting of representatives from Los Osos Community Services District, Golden State Water Company, S&T Mutual, and the County of San Luis Obispo.

g) The BMC is tasked by the groundwater stipulation to implement the Los Osos Basin Plan which has metrics to track the progress in stopping and reversing SWI in the lower aquifer which is intercepted by Rosina Well 1. This includes programs to move production to the upper aquifer impacted by nitrate and to the eastern portion of the basin away from the sea water intrusion front. Progress is tracked with the Chloride Metric. The Chloride Metric decreased relative to the 100 mg/L target value between Fall 2021 (202 mg/L) and Fall 2022 (184 mg/L), indicating improvement in 2022. See the Los Osos Basin Plan and the annual monitoring reports that are presented to the court in the ongoing groundwater adjudication.

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[1] The Los Osos Basin Plan is available at https://www.slocounty.ca.gov/Departments/Groundwater-Sustainability/Forms-Documents/Los-Osos-Basin-Management-Committee-(BMC)/2015-01-Los-Osos-Groundwater-Basin-Plan.pdf.

[2] https://www.slocounty.ca.gov/Departments/Groundwater-Sustainability/Forms-Documents/Los-Osos-Basin-Management-Committee-(BMC)/Annual-Reports/2022-LOBMC-Annual-Report-Final-061523.pdf)

h) This request is overly broad and burdensome. Since one of the primary goals of the BMC is to address SWI, most documents mention SWI. See the Los Osos Basin Plan and the annual monitoring reports that are presented to the court in the ongoing groundwater adjudication.
i) This request is overly broad and burdensome. Since one of the primary goals of the BMC is to address SWI, most documents mention SWI. See the Los Osos Basin Plan and the annual monitoring reports that are presented to the court in the ongoing groundwater adjudication.

Question 9:
On p.7 of 14, section Recommendation, the WR consultant stated, "The available data suggest that the well intake structure for Rosina Well No. 1 is clogged and requires cleaning and rigorous redevelopment to restore well capacity and increase efficiency."

a) The WR consultant memo was dated October 13, 2015. Please confirm whether GSWC had performed the cleaning and redevelopment to restore well capacity as suggested by the WR consultant.
   If yes, explain when GSWC performs the cleaning and redevelopment, including the well capacity and efficiency information before and after the rehabilitation. Also, provide the supporting documentation.
   If not, explain why not.
b) Has GSWC conducted any new studies internally or through a consultant since the last memo by the WR consultant? Provide any and all reports and communications regarding the Rosina Well No. 1 since the WR consultant issued the memo.

Response 9:

a) Rosina Well No. 1 was rehabilitated in November 2016, but not as outlined in 'LO04 - Los Osos – Rosina Rehab Memo'. The estimated specific capacity of the well prior to rehabilitation was about 1.3 gpm/ft while pumping at 234 gpm at the beginning of November 2016 (static water level of 88 feet and pumping water level of 262 feet). The estimated specific capacity of the well after rehabilitation was about 1.6 gpm/ft while pumping at 249 gpm in mid-November 2016 (static water level of 88 feet and pumping water level of 248 feet).
b) No.

During Cal Advocates's field trip on November 1, 2022, GSWC mentioned that the City of Los Osos and GSWC are working closely on a plan to limit/protect water demand growth due to groundwater issues in the basin.

Question 10:
Explain in detail the groundwater issues and plan limiting/protecting water demand growth in the basin. Provide any and all communications, including email, meeting minutes, reports, etc., between GSWC and the City of Los Osos about the water demand growth limitation due to the groundwater issues in the basin.

Response 10:
The above statement is factually incorrect. During the field tour GSWC representatives mentioned that the Los Osos Groundwater Basin is managed by the Los Osos Basin Management Committee (the "BMC") as established by the 2015 Stipulated Judgment and is implementing the Los Osos Basin Plan[3] as approved by that adjudication of the basin. Staff noted during the field visit that nitrate and seawater intrusion impacts to the basin are being addressed by the BMC. The County of San Luis Obispo has land use authority and is in the process of addressing future growth. Los Osos is not incorporated and therefore, a "City of Los Osos" does not exist.

Well Rehabilitation for South Bay Well No.1 for $998k in 2026.
Question 11:
Provide maintenance and repair/rehabilitation records for the South Bay Well No.1 since the well was constructed in 2001. Include all supporting documentation.

Response 11:
See attachment 'SN2-013 Q11 – South Bay 1 Records'.

Question 12:
Provide the original capacity of South Bay Well No.1.

Response 12:
The highest pumping rate from South Bay Well No. 1 on record was 320 gpm, which occurred during testing of the well immediately following its construction in February of 2001.

Question 13:
What is the estimated well capacity after the completion of rehabilitation?

a) Provide any and all evidence that GSWC possesses documenting or demonstrating the expectation of gain well capacity after the rehabilitation. This includes, but is not limited to, any engineering reports or internal company communications, including emails or memorandums.

Response 13:
Estimating or predicting the yield or pumping rate of any well following rehabilitation is unrealistic, given the large number of variables influencing 1) the pumping rate of a well, and 2) the ability of groundwater flow through aquifer sediments, filter pack, and/or well screen to be improved by removal of poorly understood plugging or clogging materials, which depends partly on rehabilitation methodology. See attachment 'SN2-013 Q13 –

[3] The Los Osos Basin Plan is available at https://www.slocounty.ca.gov/Departments/Groundwater-Sustainability/Forms-Documents/Los-Osos-Basin-Management-Committee-(BMC)/2015-01-Los-Osos-Groundwater-Basin-Plan.pdf.

South Bay 1 Chart'. Unfortunately, the attached chart South Bay Well No. 1 cannot be used to document improvement in the well's pumping rate because the relatively young well has not been rehabilitated that often and the rehabilitation methods have been relatively gentle, consisting primarily of the brushing of the casing and screen, introduction of chlorine into the well with either a nylon brush or swab tool, and airlifting of sediment from the well bottom. More aggressive and rigorous rehabilitation methods are likely required to result in a noticeable improvement in the pumping rate and specific capacity of the well.

Question 14:
How long will the rehabilitation extend the life of the South Bay Well No.1?

a) Provide any and all evidence that GSWC possesses documenting or demonstrating the expected well life extension as a result of the well rehabilitation. This includes, but is not limited to, any engineering reports, or internal company communications including emails or memorandums.

Response 14:
Estimating or predicting the length of time that any well's life will be extended following rehabilitation is unrealistic, given 1) the different variables influencing the lifespan of a well in the absence of rehabilitation, and 2) the imprecise ability of one or more rehabilitation events to prolong replacement of a well. In addition, the lifespan of a well is somewhat relative, in that a well may reach the end of its physical life, for example due to failure of the well screen via corrosion and/or erosion, or instead may reach the end of its useful life, for example if the well cannot be pumped at some required or intended rate due to severe plugging or clogging of the aquifer sediments, filter pack, and/or well screen. Therefore, extending the life of a well should be considered more conceptual (e.g., prolonging replacement of the well) rather than absolute (e.g., extending the life of a well for a specific number of years up to a maximum) as a result of rehabilitation.

Question 15:
GSWC's annual report identified the South Bay Well No.1 production as shown in Table-3 below.[4]

Table-3. South Bay Well no.1 Production (AFY)	
Year	Production
2013	N/A
2014	327
2015	321
2016	286
2017	244
2018	196
2019	169
2020	196
2021	151
2022	119

Please provide the following information:

a) The annual productions for South Bay Well No.1 since the well entered into service to 2013.

b) As shown in Table-4 below, from 2014 to 2022, the well production consistently decreased except in 2020. For each year, explain the reasons for the fluctuations in the well production. This includes, but is not limited to, reasons such as well maintenance, limitations due to well structure conditions, seawater intrusion problems, increase of nitrate problems, or a combination of problems. Use the attached excel file, LosOsosRehabWells for your response.

Table-4 Questions on South Bay Well no.1 Production

Year	South Bay well no.1 production (AFY)	Observation (% +/-)	Question	Provide detailed explanation why the well production increased or decreased. (see question 11.b).
2013	N/A		-	
2014	327		-	
2015	321	-2%	For each year from 2015 to 2019, explain why the well production decreased.	
2016	286	-11%		
2017	244	-15%		
2018	196	-20%		
2019	169	-14%		
2020	196	+16%	Why the well production increase by 16% ?	
2021	151	-23%	For each year of 2021 and 2022, explain why the well production decreased.	
2022	119	-21%		

Response 15:

a) See attachment 'SN2-013 Q15 – South Bay 1 Annual Production'.
b) Generally, there are no specific reason for the fluctuation in production from South Bay well. GSWC does not have records to describe why the production fluctuated from year to year as requested. Production in all sources of supply is determined by customer demand and various operational factors.

Question 16:
Provide the most recent South Bay Well No.1 water quality testing results.

Response 16:
South Bay No. 1 is included in the Los Osos Basin monitoring program and is designated as "LA20" in that program. Chloride analytical results as well as other constituents monitored as part of the basin monitoring program is summarized in the 2022 Los Osos Basin Annual Monitoring Report (See Appendix J – Historical Water Quality (Lower Aquifer) in https://www.slocounty.ca.gov/Departments/Groundwater-Sustainability/Forms-Documents/Los-Osos-Basin-Management-Committee-(BMC)/Annual-Reports/2022-LOBMC-Annual-Report-Final-061523.pdf)

Question 17:
Is GSWC concerned about seawater intrusion resulting from production in South Bay Well No.1? Please explain in detail why or why not.

Response 17:
SWI has not been observed in South Bay Well No. 1 (see 2022 Los Osos Basin Annual Monitoring Report (See Appendix J – Historical Water Quality (Lower Aquifer) in https://www.slocounty.ca.gov/Departments/Groundwater-Sustainability/Forms-Documents/Los-Osos-Basin-Management-Committee-(BMC)/Annual-Reports/2022-LOBMC-Annual-Report-Final-061523.pdf)

Question 18:
Provide any and all evidence that GSWC possesses documenting or demonstrating that the seawater intrution issue does not impact South Bay Well No.1. This includes, but is not limited to, engineering reports or internal company communications, including emails or memorandums.

Response 18:
See response 17 above.

Question 19:
What basin is the South Bay Well No.1 located in?

Response 19:
South Bay Well No. 1 is located in the adjudicated Los Osos Groundwater Basin (also classified by DWR as the “Los Osos Valley Basin,” (DWR Bulletin 118 Basin No. 3-008.01). The basin was adjudicated per a Stipulated Judgement in 2015.

Question 20:
Who is the authority in charge of basin management where the South Bay Well No.1 is located?

Response 20:
The Los Osos Groundwater Basin (the Basin) was adjudicated in October 2015 (Los Osos Community Services District v. Southern California Water Company [Golden State Water Company] et al. (San Luis Obispo County Superior Court Case No. CV 040126) and is managed by the Los Osos Groundwater Basin Management Committee (“BMC”), consisting of representatives from Los Osos Community Services District, Golden State Water Company, S&T Mutual, and the County of San Luis Obispo.

Question 21:
What actions has the basin management authority taken or recommended regarding seawater intrusion at South Bay Well No.1?

Response 21:
The BMC is tasked by the groundwater stipulation to implement the Los Osos Basin Plan which has metrics to track the progress in stopping and reversing SWI in the lower aquifer.

This includes programs to move production to the upper aquifer impacted by nitrate and to the eastern portion of the basin away from the sea water intrusion front. Progress is tracked with the Chloride Metric. The Chloride Metric decreased relative to the 100 mg/L target value between Fall 2021 (202 mg/L) and Fall 2022 (184 mg/L), indicating improvement in 2022. See the Los Osos Basin Plan and the annual monitoring reports that are presented to the court in the ongoing groundwater adjudication.

Question 22:
Provide any and all communications, including email, meeting minutes, reports, etc., between GSWC and the basin management authority or any outside contractors regarding any water quality issues at South Bay Well No.1.

Response 22:
This request is overly broad and burdensome. Since one of the primary goals of the BMC is to address SWI, most documents mention SWI. See the Los Osos Basin Plan and the annual monitoring reports that are presented to the court in the ongoing groundwater adjudication.

Question 23:
Provide any and all internal GSWC communications, including email, meeting minutes, reports, field notes, etc., regarding any water quality issues at South Bay Well No.1.

Response 23:
This request is overly broad and burdensome. Since one of the primary goals of the BMC is to address SWI, most documents mention SWI. See the Los Osos Basin Plan and the annual monitoring reports that are presented to the court in the ongoing groundwater adjudication.

Question 24:
The Water Infrastructure & Management Solution (WIMS) memo stated, *"The well is not currently experiencing any loss of specific capacity or production. However, it has been 16 years since the well went into production and we suggest the well be rehabilitated with the use of acids and mechanical redevelopment in order to maintain the current production. The rehabilitation will extend the life of the asset by removing silks, clay, fines and any minerals that have precipitated in or around the gravel pack and formation which, may cause a loss in specific capacity later."*
The WIMS consultant memo was dated February 28, 2017. Please confirm whether GSWC had performed the rehabilitation to restore well capacity as suggested in the memo.

> If yes, explain when GSWC performed the rehabilitation(s). Include the information on well capacity and efficiency before and after the rehabilitation. Also, provide the supporting documentation.
>
> If not, explain why not.

Response 24:
No rehabilitation has been performed per the WIMS 2017 memo. The Los Osos CSA has competing priorities with limited available funds.

Question 25:
Has GSWC conducted any new studies internally or through a consultant since the last memo by the WIMS consultant in 2017? Provide any and all reports and communications regarding the well since the consultant memo was issued.

Response 25:
GSWC conducted an internal review in mid-2023 to assess the cause(s) of a rapid decline in the pumping rate from South Bay 1 over a short period of time. As a result of this assessment, a worn pump and some pump column were replaced, which restored the pumping rate of the well.

END OF RESPONSE

[2] files.cpuc.ca.gov - /WaterAnnualReports/Water Division/Annual Reports/
The 2013 Annual Report does not include the well production information.

[3] Gisler, Insco - Vol 1 Capital Testimony and Attachments A to E – APP, Attachment LO04 – Wood Rodgers, Assessment and Evaluation of Rosina Well No.1, October 13, 2015.

[4] The 2013 Annual Report does not include the well production information.
files.cpuc.ca.gov - /WaterAnnualReports/Water Division/Annual Reports/

Attachment 4-2

GSWC 2020 GRC - GSWC's Hanford and Insco Operating District Capital Testimony APP, pp. 69-70. Systemwide, New Well Study.

<u>LOS OSOS CSA (LOS OSOS SYSTEM) – CAPITAL BUDGET</u>

Systemwide, New Well Study

(2022 Budget Item 51 – $159,400)

Project Description

Retain consultant to identify options, evaluate test wells, and determine water supply/treatment options for the Los Osos System. This project is considered "Phase 1" of a multi-phase project; "Phase 2," to be scheduled in the next GRC timeframe, would design/permit and drill and equip the well(s).

Project Need

In the Los Osos Groundwater Basin, high TDS and chloride are generally associated with seawater intrusion into the lower aquifer, and high nitrates are associated with the upper aquifer. The 2015 Basin Management Plan for the Los Osos Groundwater Basin[32] addressed the ongoing issue of seawater intrusion into the basin.[33] Seawater intrusion in the basin has been caused by over pumping of lower aquifer wells on the west side of the basin. To mitigate this, the Basin Management Plan calls for the abandonment of westerly lower

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[32] https://www.slocounty.ca.gov/Departments/Public-Works/Forms-Documents/Committees-Programs/Los-Osos-Basin-Management-Committee-(BMC)/2015-01-Los-Osos-Groundwater-Basin-Plan.aspx.

[33] Los Osos System Water Master Plan, December 2018, page 7-3.

aquifer wells, and for future wells to be drilled either in the upper aquifer or on the east side of the basin. Within the next one to five years a new well that meets the above requirements should be drilled in the Los Osos System in order to maintain reliable water supply for GSWC customers.

Two GSWC wells on the west side of the basin have been impacted and are experiencing operational problems: Pecho Well No. 1 was taken offline for seawater intrusion and mechanical issues[34], and Cabrillo Well No. 1 is currently having problems due to holes in the casing[35] and is nearing the end of its useful life. Recent sand production caused the need to pull the Cabrillo pump and video the well in an attempt to keep the well operational and ensure firm capacity to meet MDD. At the time of this writing, the well is still being evaluated and it has not yet been determined if it will be able to be returned to service.

A replacement well drilled in the upper aquifer on the west side of the basin would likely be high in nitrate and necessitate additional nitrate treatment capacity in the system (i.e. upgrading the IX unit that is already in place on the Rosina Treatment Plant site).

Conclusion

GSWC should retain a consultant to identify the optimal site for a new well in the Los Osos System to maintain a reliable water supply for GSWC customers and comply with the Basin Management Plan to address seawater intrusion and high nitrates in the lower and upper aquifers, respectively.[36]

Systemwide, SCADA Upgrade

(2023 Budget Item 51 – $952,100)

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[34] Los Osos System Water Master Plan, December 2019, page 2-4, -3.

[35] Los Osos System Water Master Plan, December 2019, page 2-3, -2.

[36] Los Osos System Water Master Plan, December 2019, page 7-4.

Attachment 4-3

GSWC's response to DR SN2-014

Golden State Water Company
A Subsidiary of American States Water Company

December 11, 2023

To: Susan Nasserie, Public Advocates Office
CALIFORNIA PUBLIC UTILITIES COMMISSION
505 Van Ness Avenue
San Francisco, CA 94102

Subject: Data Request SN2-014 (A.23-08-010) Destroy Wells Follow Up
Due Date: December 11, 2023

Dear Susan Nasserie,

In response to the above referenced data request number, we are pleased to submit the following responses:

Destroy Wells (Follow up)
Question 1:
Referring to GSWC's response to DR. SN2-008, question 2.c, GSWC included a bid for Sycamore Well #2 demolition in Simi Valley as a basis to estimate cost for Willowood Well#1 demolition.

Picture-1. *A bid for Sycamore Well #2 demolition in Simi Valley (excerpt)*

Bid Due on September 09, 2022 5:00 PM (PDT)
Exported on 09/12/2022

Line Totals (Unit Price * Quantity)

Item Num	Section	Item Code	Description	Reference	Unit of Measure	Quantity	Legend Pump & Well Service Inc.
1	Main Bid		Performance & Payment Bond		LS	1	$9,390.00
2	Main Bid	Task A1	Remove fill inside the well casing		LS	1	$20,800.00
3	Main Bid	Task A2	Physical Cleaning		LS	1	$37,500.00
4	Main Bid	Task A3	Video Survey		LS	1	$2,500.00
5	Main Bid	Task B1	Permitting		LS	1	$3,000.00
6	Main Bid	Task B2	Implement Method to Destroy Well		LS	1	$5,000.00
7	Main Bid	Task B3	Excavate Around Well Casing		LS	1	$52,800.00
8	Main Bid	Task B4	Furnish and Install Concrete Cap		LS	1	$31,900.00
9	Main Bid	Task B5	Provide Well Completion Report		LS	1	$3,500.00
						Subtotal	$166,390.00
						Total	$166,390.00

As shown in Picture-1 above, GSWC identifies nine items as the project scope of Sycamore Well #2 demolition. For each scope item identified in Picture-1, explain why the item is needed for the project.

Response 1:
Items 1 & 5 are required to start work. Items 2 & 3 are required to perform item 4. Item 4 is used for item 6. Items 7, 8, & 9 complete work. All items are needed to properly destroy the well in accordance with GSWC's Standards & Technical Specifications, the California Department of Water Resources, County of Ventura Environmental Health Division, and other agencies.

Question 2:
Referring to GSWC's workpapers file: PCE_RI - Orcutt (Mira Flores Well 3, Destroy Well, Raze Site, Pipeline Improvements), tab: Estimate Creator, line 487. GSWC identifies a Well-demo for Mira Flores Well#3.

a) List all items of the well demolition project scope, similar to the items list in the Picture-1 above for Question-1.
b) For each item listed for Question 2.a above, include its associated cost (in Excel format), including supporting documentation such as invoices etc.
c) Does Mira Flores Well#3 have the same well demolition scope as Willowood Well#1?

If not the same:
- i) Identify the scope items that are different.
- ii) Explain why the well demolition scopes are different.
- iii) Provide supporting documentation. This includes but is not limited to engineering reports and internal/external communications.

Response 2:
a) Items for the well demolition will be similar to the items listed in the Picture-1 above for Question-1.
b) The workpapers file referenced is a Planning high level cost estimate. As stated in GSWC's response to DR. SN2-008, question 2.b, "The unit cost of $120,000 was determined by DCW, based on their expertise and discussions between DCW and GSWC Engineering Planning and Capital Program Management staff." A detailed breakdown of costs is not available other than the standard items listed in Picture-1.
c) The Mira Flores Well #3 has a similar well demolition scope as Willowood Well #1, except for the fact that the entire site will be razed; contractor costs for items are anticipated to be lower due to none of the above ground and below ground facilities need to be protected in place. For instance, item 7 (Excavate Around Well Casing) is anticipated to be lower as the excavation is less constrained and can be performed concurrently with the overall razing of the site.

Question 3:
Referring to GSWC's workpapers file: PCE_RI - Orcutt (Mira Flores Well 3, Destroy Well, Raze Site, Pipeline Improvements), tab: Front Sheet (For Office 365), line 23: GSWC states," …the 2007 Re-Activation Study determined that re-activation was not recommended, the site limitations as discussed herein make well rehabilitation cost prohibitive, Master Plan indicates sufficient supply to meet MDD without the Mira Flores

No.3 well.” The study determined that this well was not recommended for reactivation in 2007. Provide reasons why GSWC waited for six years to demolish the well.

Response 3:
The Santa Maria CSA has competing priorities with limited available funds.

Question 4:
Referring to GSWC’s workpapers file: PCE_RI - Cypress Ridge (Rural Well 1, Destroy Well), tab: Estimate Creator, line 487. GSWC identifies a Well-demo for Rural Well #1.
a) List all items of the well demolition project scope, similar to the items list in the Picture-1 above for Question-1
b) For each item listed for Question 4.a above, include its associated cost (in Excel format), including supporting documentation such as invoices etc.
c) Does Rural Well #1 have the same well demolition scope as Willowood Well#1?
If not the same:
i) Identify the scope items that are different.
ii) Explain why the well demolition scopes are different.
iii)Provide supporting documentation. This includes but is not limited to engineering reports and internal/external communications.

Response 4:
a) Items for the well demolition will be similar to the items listed in the Picture-1 above for Question-1.
b) The workpapers file referenced is a Planning high level cost estimate. As stated in GSWC’s response to DR. SN2-008, question 2.b, “The unit cost of $120,000 was determined by DCW, based on their expertise and discussions between DCW and GSWC Engineering Planning and Capital Program Management staff. The adjusted cost of $145,000 for Willowood Well #1 was determined by a similar well demo project in Simi Valley, for which bid results were compiled in Q3 2022.” See Picture-1 above for Question-1 for a detailed breakdown of costs.
c) The Rural Well # 1 has a similar well demolition scope as Willowood Well #1.

Question 5:
Referring to GSWC’s workpapers file: PCE_RI - Cypress Ridge (Rural Well 1, Destroy Well), tab: Estimate Creator, line 166: item ‘Demolition To Existing Structures,’ for a unit cost of $10,000.

Picture-2. *Cal Advocates field trip to El Campo plant site on November 1, 2023*

During Cal Advocate field trip to the El Campo plant on November 1, 2023, see picture -2 around the area of the blue pole. GSWC pointed out that Rural Well #1 is located around the blue pole. However, as shown in the picture, no structures around the blue pole exist.

a) Please confirm whether demolition of existing structures is still needed.
b) If the location of the well #1 is incorrect, please provide photos of the well and the existing structures. Also, in the photos, identify the structures to be demolished.

Response 5:

a) The demolition item is still needed.
b) The location of Rural Well #1 mentioned above is not completely accurate. The well is located slightly to the right (yellow arrow above). There is above grade piping, electrical, bollards, and concrete that need to be demolished (red arrows above).

Question 6:

Referring to GSWC's workpapers file: PCE_RI - Cypress Ridge (Cypress Ridge Well 8, Destroy Well), tab: Estimate Creator, line 487. GSWC identifies a Well-demo for Cypress Ridge Well #8.

a) List all items of the well demolition project scope similar to the items list in the Picture-1 above for Question-1
b) For each item listed for Question 6.a above, include its associated cost (in Excel format), including supporting documentation such as invoices etc.
c) Does Cypress Ridge Well #8 have the same well demolition scope as Willowood Well#1? If not the same:
   i) Identify the scope items that are different.
   ii) Explain why the well demolition scopes are different.

iii) Provide supporting documentation. This includes but is not limited to engineering reports and internal/external communications.

Response 6:

a) Items for the well demolition will be similar to the items listed in the Picture-1 above for Question-1.

b) The workpapers file referenced is a Planning high level cost estimate. As stated in GSWC's response to DR. SN2-008, question 2.b, "The unit cost of $120,000 was determined by DCW, based on their expertise and discussions between DCW and GSWC Engineering Planning and Capital Program Management staff. The adjusted cost of $145,000 for Willowood Well #1 was determined by a similar well demo project in Simi Valley, for which bid results were compiled in Q3 2022." See Picture-1 above for Question-1 for a detailed breakdown of costs.

c) The Cypress Ridge Well #8 has a similar well demolition scope as Willowood Well #1.

Question 7:

Referring to GSWC's workpapers file: PCE_RI - Tanglewood (Willowood Plant, Destroy Well 1), tab: Estimate Creator, line 166: item 'Demolition To Existing Structures,' for a unit cost of $10,000.

Picture-3. *Cal Advocates field trip to Willowood plant site on November 2, 2023*

During Cal Advocates' field trip to the Willowood plant on November 2, 2023, see picture - 3 with a red arrow, GSWC pointed out that Willowood Well #1 is around the red arrow area.

a) Please identify the structures that should be demolished.

b) If the Willowood Well #1 location is incorrect, please provide photos of the well and the existing structures. Also, from the photos, identify the structures to be demolished.

Response 7:

a) The structures proposed to be demolished are above grade piping, electrical, and concrete.
b) The location of Willowood Well #1 mentioned above is not completely accurate. The well is located to the right (yellow arrow above). See red arrows above for structures to be demolished.

Question 8:

Referring to GSWC's workpapers file: PCE_RI - Edna Road (Lewis Lane Plant, Destroy Well 2), tab: Estimate Creator, line 487. GSWC identifies a Well-demo for Lewis Lane Well #2.

a) List all items of the well demolition project scope, similar to the items list in the Picture-1 above for Question-1
b) For each item listed for Question 8.a above, include its associated cost(in Excel format), including supporting documentation such as invoices etc.
c) Does Lewis Lane Well #2 have the same well demolition scope as Willowood Well#1?
   If not the same:
   i) Identify the scope items that are different.
   ii) Explain why the well demolition scopes are different.
   iii) Provide supporting documentation. This includes but is not limited to engineering reports and internal/external communications.

Response 8:

a) Items for the well demolition will be similar to the items listed in the Picture-1 above for Question-1.
b) The workpapers file referenced is a Planning high level cost estimate. As stated in GSWC's response to DR. SN2-008, question 2.b, "The unit cost of $120,000 was determined by DCW, based on their expertise and discussions between DCW and GSWC Engineering Planning and Capital Program Management staff. The adjusted cost of $145,000 for Willowood Well #1 was determined by a similar well demo project in Simi Valley, for which bid results were compiled in Q3 2022." See Picture-1 above for Question-1 for a detailed breakdown of costs.
c) The Lewis Lane Well #2 has a similar well demolition scope as Willowood Well #1.

Question 9:

Referring to GSWC's workpapers file: PCE_RI - Edna Road (Lewis Lane Plant, Destroy Well 2), tab: Estimate Creator, line 166: item 'Demolition To Existing Structures,' for a unit cost of $10,000.

a) Provide photos of the well and the existing structures.
b) In the photo(s), please identify the structures that GSWC need to demolish.

Response 9:

a) See attachment ‘SN2-014 Q9 – Photos’.
b) See red arrows for structures to be demolished and yellow arrow for well in attachment ‘SN2-014 Q9 – Photos’.

END OF RESPONSE

Attachment 4-4 Cal Advocates calculations

Using GSWC's workpapers file: PCE_RI - Los Osos (Los Osos System, Fire Hardening Improvements), tab: *Estimate Creator*, line 521: Cal Advocates removed 160 quantity of masonry wall with a unit cost $360 per LF. Added line 121 for item 'Chain Link' with 160 quantity with a unit cost $115 per LF.

See tab: *Cost Estimate (For Office 365)* shows a Direct Construction Costs of $177,520 after replacing the masonry wall with chain-link fence and removing costs adders.

	Direct Construction Costs	Mobilization	Payment and Performance Bond	Sales Tax	Direct Cost (Permits & Fees)
$	177,520.00	-	-	-	-

Row	Item Description	Quantity	Unit	Unit Rate	Total
4					
5	**Direct Construction Costs**				**177,520.00**
6	Mobilization			0.00%	-
7	Design Contingency				incl. in Capital Project List
8	Construction Contingency				incl. in Capital Project List
9	Payment and Performance Bond			0.00%	-
10	Sales Tax			0.00%	-
11	Escalation				incl. in Capital Project List
12	Direct Cost (Permits & Fees)			0%	-
13	**Recommended Budget**				**177,520.00**
14					
15	**Detail**				
16					
17	**Item Description**	**Quantity**	**Unit**	**Unit Rate**	**Total**
19	Chain Link - 8Ft High	160	LF	115.00	18,400.00
20	Calle Cordoniz: Remove abandoned electrical cabinets	1	LS	10,000.00	10,000.00
21	Calle Cordoniz: Install masonry wall 6 feet high	160	LF	360.00	57,600.00
22	South Bay: Replace plastic chemical building with mas	48	SF	1,500.00	72,000.00
23	South Bay: Chemical building electrical	48	SF	45.00	2,160.00
24	South Bay: Chemical building mechanical	48	SF	120.00	5,760.00
25	South Bay: Demo existing structures	1	LS	10,000.00	10,000.00
26	South Bay: Install masonry wall 6 feet high	-	LF	360.00	
27	Country Club: Install 2 feet high three-sided wall	16	LF	100.00	1,600.00
28					
29					
30					

Page 1

Instructions | Front Sheet (For Office 365) | **Cost Estimate (For Office 365)** | Estimate Creator

Attachment Chapter 5:
Santa Maria CSA

Attachment 5-1

GSWC's response to DR SN2-010, including selected attachments:

1) Question 5.a.
2) Question 7.

Golden State Water Company
A Subsidiary of American States Water Company

November 1, 2023

To: Susan Nasserie, Public Advocates Office
CALIFORNIA PUBLIC UTILITIES COMMISSION
505 Van Ness Avenue
San Francisco, CA 94102

Subject: Data Request SN2-010 (A.23-08-010) Lake Marie Booster Station
Due Date (Extended): November 1, 2023

Dear Susan Nasserie,

In response to the above referenced data request number, we are pleased to submit the following responses:

Lake Marie Replace Booster Station $1.2 million (2025 and 2026)
Question 1:
Provide recorded power consumption for the last six years (2017 to 2022) for each pump in the Lake Marie system, identifying each pump by facility (well, booster, etc.), pump type, energy type, size (hp), capacity (gallon per minute/gpm), installed year and usage (in Kilo Watt Hour/KWH) from 2017 to 2022 in the attached Excel format (attachment: LakeMariePumpInfo.xlxs)

	Pumps						KWH Usage						
Plant	Facility (Well/Pump)	Pump Type	Energy Type	Size (HP)	Capacity (gpm)	Installed Year	2017	2018	2019	2020	2021	2022	Comments
Lake Marie	Well No. 4	Submerg	Electric	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	
	Booster A	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	
	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	
	xxx												
Vine Yard	Well No. 5	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	
	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	
					Total KWH Usage		xxx	xxx	xxx	xxx	xxx	xxx	

Response 1:
We are unable to provide power usage by individual pump at each plant site because we have one electric meter for all pumps and facilities at each plant site. In an attempt to be responsive to your data request, we are providing power consumption by plant site for the years requested.

		Pumps					KWH Usage						
Plant	**Facility (Well/Pump)**	**Pump Type**	**Energy Type**	**Size (HP)**	**Capacity (gpm)**	**Installed Year**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**Comments**
Lake Marie	Well No. 4	Subm.	Elec.	150	500	2019							
	Booster A	VT	Elec.	25	500	2009							
	Booster B.	VT	Elec	25	500	2010							
	Booster C	ES	Diesel	35.8	440	2001							
					Plant Total		335,264	356,207	321,736	340,629	361,896	345,391	
Vineyard	Well No. 5	Subm.	Elec.	125	400	2009							
	Well No. 6	Subm.	Elec.	150	560	2018							
					Plant Total		31,686	22,668	29,855	44,919	13,057	40,108	
					Total KWH Usage		**366,950**	**378,875**	**351,591**	**385,548**	**374,953**	**385,499**	

Question 2:
Provide a copy of the most recent test for each pump located in the Lake Marie system.

Response 2:
See attachment 'SN2-010 Q2 Pump Tests'.

Question 3:
In GSWC's 2020 GRC, A.20-07-012 testimony, as shown below,[2] GSWC indicated that in the Lake Marie Plant, the booster C would be replaced with an electric booster pump. However, in this GRC, GSWC's CWIP workpaper identifies a project with the description: Lake Marie Plant, Booster D and Gen.[3]

> ***Lake Marie Plant, Booster C and Generator***
>
> (2022 Budget Item 51 – $553,900)
>
> **Project Description**
>
> Install Electric Booster C, permanent generator, and Automatic Transfer Switch (ATS) at Lake Marie Plant.

a) Clarify whether the 'Lake Marie Plant, Booster C and Generator' and the "Lake Marie Plant, Booster D and Gen" projects are the same.
b) If the projects are same, please explain and clarify which booster pump is being replaced, C or D.
c) Explain the project(s) status in detail.

[2] GSWC's Hanford and Insco Operating District Capital Testimony APP, pages 91-92
[3] GSWC's workpaper (ROM): Y_SEC-50_RB_CWIP, line 680: WO description shows as "Lake Marie Plant, Booster D and Gen."

Response 3:

a) Both projects are proposing to replace the existing diesel-powered Booster Pump identified as Pump C.
b) Both projects are proposing to replace the existing diesel-powered Booster Pump identified as Pump C.
c) The permanent generator has been installed, and start-up and commissioning by the manufacturer is scheduled for mid-November 2023. The planned booster pump and discharge piping modifications were not completed due to the discovery that the spare pump cannot be utilized for installing the new booster.

Referring to GSWC's Gisler, Insco – Vol 1 Capital Testimony: "Lake Marie Plant, Replace Booster Station."[4]
Question 4:
On page 73, lines 5-12, GSWC states, "The original scope of this project in the 2020 GRC was to replace the diesel-powered Booster C with an electric booster in the spare pump can between Pumps A & B, and install a new diesel generator at the plant. …
During the design phase, it was discovered that the spare pump can was no longer a viable option; it has a permanent concrete plug, and there are no as-builts to show how the booster-cans were constructed."
Please answer the following questions:

a) Did GSWC construct the booster cans?
b) When were the booster cans constructed?
c) Explain in detail why, prior to submitting the GSWC's 2020 GRC, A.20-07-012 application, GSWC did not check the viability of the spare pump can before proposing the project for $553,900 in 2022.
d) Please explain what is the meaning of 'as-builts' that is stated in the above paragraph.
e) Explain in detail why GSWC does not have the as-built information on how the booster-cans were constructed.

[4] GSWC's Gisler, Insco – Vol 1 Capital Testimony: Lake Marie Plant, Replace Booster Station, Pages 72-73. GSWC's Gisler, Insco – Vol 1 Capital Testimony: Lake Marie Plant, Replace Booster Station, Pages 72-73.

Response 4:

a) No.
b) The year of booster can construction is unknown.
c) The concrete plug was not visible upon standard inspection of the spare pump can. A concrete plug six feet below grade was an unforeseen circumstance.
d) "As-builts' are record drawings that document what was constructed.
e) Golden State Water Company (FNA Southern California Water Company) acquired the Lake Marie water system through an acquisition of the Lake Marie Water Company. To our knowledge, the Lake Marie Water Company did not possess nor provide as-built information to Golden State Water.

Question 5:
On page 73, lines 12-15, GSWC states, "After reaching out to multiple vendors in an attempt to find a solution by installing either a different type of pump or a new pump can, modifying the existing booster configuration was deemed infeasible, and it was determined to be a better long-term solution to instead reconstruct the booster station."
Please answer the following questions:

a) Provide GSWC's communication with multiple vendors indicating the attempt to find a solution, either installing a different type of pump or a new pump can. This communication includes but is not limited to, letter or email communication with vendors or consultants.
b) Provide proof that modifying the existing booster configuration was infeasible. This includes but is not limited to, recommendation reports from consultants.
c) Explain in detail how GSWC determined that reconstructing the booster station is a better long-term solution. This includes but is not limited to, recommendation reports from consultants.
d) Provide a cost-benefit analysis between modifying the existing booster configuration and reconstructing the booster station. Provide the analysis in Excel format, including an explanation of all assumptions.

Response 5:

a) See attachment 'SN2-010 Q5 Communication'. Site visits and verbal communications between CPM and contractor/consultant also took place in the attempt to find a solution.
b) See attachment 'SN2-010 Q5 Communication'. Site visits and verbal communications between CPM and contractor/consultant also took place in the attempt to find a solution. No as-built information is available to confirm how the booster station was originally constructed or connected to the reservoir. The Lake Marie Plant is a critical facility for the Lake Marie System and must remain in service at all times. Removal and replacement of the concrete-filled AC booster pump can/piping would require disconnecting all boosters and draining the reservoir, thereby disrupting supply to the Lake Marie System, and would ultimately involve replacing the existing pump cans, booster pumps, piping, controls, electrical connections, and structure. During this work, a temporary booster station and temporary tank would be required to provide uninterrupted water supply in the system for an extended period of time.
c) The existing boosters are constructed on cans that do not allow adequate space for maintenance, the cans are constructed with AC pipe, and it is unknown how they connect to the reservoir. The spare can was discovered to be abandoned with a concrete plug. It is suspected that the can was abandoned due to a leak and was left in place so as to not disturb the adjacent two booster cans. GSWC cannot disturb the AC pipe while the system is in-service as the Lake Marie Plant is the only plant providing water directly to the system. Constructing a new booster station in a different location on the plant site would minimize the disruption to water supply during construction. The existing boosters can continue to be utilized during

construction of the new booster station, with only a short period of downtime to swap the existing boosters over and connect to the reservoir. The new booster station will provide improved access for future maintenance and be constructed of current industry standard materials.

d) Modifying the existing booster station is not feasible. Any work to modify the existing empty pump can would require a complete booster pump station replacement due to the proximity of the existing pump cans, booster pumps and motors, piping, electrical and structure, and would also require use of a temporary booster station and temporary tank for an extended period of time.

Question 6:
On page 73, lines 5-7, GSWC states, “The original scope of this project in the 2020 GRC was to replace the diesel-powered Booster C with an electric booster in the spare pump can between Pumps A & B, and install a new diesel generator at the plant.”

a) Please provide the reference of the GSWC 2020 GRC, A.20-07-012 testimony, including a copy of the narrative proposed project in 2020 GRC.

Response 6:
Refer to the Prepared Testimony of Robert Hanford and Mark Insco for Operating District Capital Additions, pages 91-92, the Workpaper PCE_RI - Lake Marie (Lake Marie Plant, Booster C and Generator), and Lake Marie System Water Master Plan, December 2019, page 8-2 as submitted in A.20-07-012.

Question 7:
In the GSWC’s 2023 GRC, A.23-08-010 CWIP workpaper, GSWC identifies category 4a[5] project with Work Order (WO) Description as “Lake Marie Plant, Booster D and Gen.” [6]

a) Please provide the reference in the GSWC 2020 GRC, A.20-07-012 testimony, including a copy of the narrative proposed project in 2020 GRC.

Response 7:
Refer to the Prepared Testimony of Robert Hanford and Mark Insco for Operating District Capital Additions, pages 91-92, the Workpaper PCE_RI - Lake Marie (Lake Marie Plant, Booster C and Generator), and Lake Marie System Water Master Plan, December 2019, page 8-2 as submitted in A.20-07-012.

END OF RESPONSE

PUMP CHECK
Pumping Systems Analysts
Hydraulic Test Report
Since 1958
(951) 684-9801 • Lic. 799498 • Fax (951) 684-2988

Golden State Water Company		Test Date:	08/14/2023
2283 Lake Marie Drive		Pump type:	TB
		Plant:	Lake Marie A
		System:	Lake Marie

A test was made on this booster pump and the following information was obtained.

EQUIPMENT

PUMP:	Aurora	SERIAL:	V74-002304
MOTOR:	US	SERIAL:	U097570638-0003M0005
H.P.	25	LAT/LON:	34.51.976n120.22.661w
METER:	1009483490	REF #:	PC 469

TEST RESULTS

	TEST 1	TEST 2	TEST 3
Discharge, PSI	63.5	63.5	63.5
Discharge head, feet	146.7	146.7	146.7
Suction lfit, feet	4.1	4.1	4.1
Total pumping head, feet	150.8	150.8	150.8
Gallons per minute flow	**297**	**220**	**96**
Acre feet pumped per 24 hours	1.312	0.972	0.424
KW input to motor	14.0	11.6	9.6
HP input to motor	18.8	15.5	12.9
Motor load, % BHP	69.3	57.5	47.5
Measured speed of pump, RPM	1594	1523	1452
KWH per acre foot	256.0	286.4	543.1
Overall plant efficiency in %	**60.3**	**53.9**	**28.4**

Test 1 was with the VFD operating at 54.0 Hz while bypassing water.

Test 2 was with the VFD operating at 51.6 Hz while bypassing water.

Test 3 was with the VFD operating at 49.2 Hz into the system as found at the time of the test.

We were unable to measure the gallons per minute flow with our test equipment. The above flow measurement was obtained using your water meter.

If you have any questions please contact Jon Lee at (951) 684-9801.

P.O. Box 5646, Riverside, California 92517

ANNUAL PUMPING COST ANALYSIS

Golden State Water Company Test date: 08/14/2023

Plant: Lake Marie A
H.P. 25

The following cost analysis is presented as an aid to your cost accounting and planning. It is an **Estimate** based on the pump test data and your energy use or hours of operation during the previous 12-month period.

	EXISTING CONDITIONS		
Total annual kWhrs	59332		
Total annual cost	$10,875.56		
Average Cost per kWh	$0.1833	Estimated	
	TEST 1	TEST 2	TEST 3
KWh per acre foot at test speed	256.0	286.4	543.1
Cost per acre foot at test speed	$46.93	$52.49	$99.55
Overall plant efficiency	60.3	53.9	28.4

Golden State Water Company	Test Date: 08/14/2023
2283 Lake Marie Drive	Pump type: TB
	Plant: Lake Marie B
	System: Lake Marie

A test was made on this booster pump and the following information was obtained.

EQUIPMENT

PUMP:	Layne & Bowler/Goulds	SERIAL:	28973
MOTOR:	US	SERIAL:	V097601194-00450004
H.P.	25	LAT/LON:	34.51.976n120.22.661w
METER:	1009483490	REF #:	PC 470

TEST RESULTS

	TEST 1	TEST 2	TEST 3
Discharge, PSI	63.5	63.5	64.0
Discharge head, feet	146.7	146.7	147.8
Suction lift, feet	4.1	4.1	4.1
Total pumping head, feet	150.8	150.8	151.9
Gallons per minute flow	**304**	**234**	**102**
Acre feet pumped per 24 hours	1.343	1.034	0.451
KW input to motor	14.4	12.5	8.8
HP input to motor	19.3	16.8	11.8
Motor load, % BHP	72.2	62.7	44.1
Measured speed of pump, RPM	1589	1513	1445
KWH per acre foot	257.3	290.1	468.6
Overall plant efficiency in %	**60.0**	**53.2**	**33.2**

Test 1 was with the VFD operating at 54.0 Hz while bypassing water.

Test 2 was with the VFD operating at 51.4 Hz while bypassing water.

Test 3 was with the VFD operating at 49.2 Hz into the system as found at the time of the test.

We were unable to measure the gallons per minute flow with our test equipment.
The above flow measurement was obtained using your water meter.

If you have any questions please contact Jon Lee at (951) 684-9801.

ANNUAL PUMPING COST ANALYSIS

Golden State Water Company Test date: 08/14/2023

Plant: Lake Marie B
H.P. 25

The following cost analysis is presented as an aid to your cost accounting and planning. It is an **Estimate** based on the pump test data and your energy use or hours of operation during the previous 12-month period.

	EXISTING CONDITIONS		
Total annual kWhrs	66514		
Total annual cost	$12,191.94		
Average Cost per kWh	$0.1833	Estimated	

	TEST 1	TEST 2	TEST 3
KWh per acre foot at test speed	257.3	290.1	468.6
Cost per acre foot at test speed	$47.16	$53.18	$85.89
Overall plant efficiency	60.0	53.2	33.2

PUMP CHECK

Pumping Systems Analysts

Hydraulic Test Report

Since 1958

(951) 684-9801 • Lic. 799498 • Fax (951) 684-2988

Golden State Water Company		Test Date:	08/14/2023
2283 Lake Marie Drive		Pump type:	CB
		Plant:	Lake Marie C
		System:	Lake Marie

A test was made on this booster pump and the following information was obtained.

EQUIPMENT

PUMP:	Berkeley	SERIAL:	G301199
ENGINE:	Hatz	SERIAL:	1051299004915
Meter #:	Diesel	Lat/Lon:	34.51.976n120.22.661w

TEST RESULTS

	TEST 1
Discharge, PSI	53.0
Discharge head, feet	122.4
Suction Vacuum, Inches	4.5"
Suction lift, feet	5.1
Total pumping head, feet	127.5
Gallons per minute flow	**86**
Acre feet pumped per 24 hours	0.380
Measured speed of engine, RPM	2090
Measured speed of pump, RPM	2090

Test 1 was with this pump operating alone at the time of the test.

We were unable to measure the gallons per minute flow with our test equipment.
The above flow measurement was obtained using your water meter.

If you have any questions please contact Jon Lee at (951) 684-9801.

P.O. Box 5646, Riverside, California 92517

"Pump Testing, The Service That Pays For Itself"

ANNUAL PUMPING COST ANALYSIS

Test date: 08/14/2023

Golden State Water Company
Plant: Lake Marie C

The following cost analysis is presented as an aid to your cost accounting and planning. It is an **Estimate** based on the pump test data and your energy use or hours of operation during the previous 12-month period.

	EXISTING CONDITIONS	
Hours of operation per year	6	
Equivalent 24 hour days	0.3	
	Test 1	
Acre feet pumped per 24 hour day	0.380	
Average fuel cost per gallon	4.500	Estimated

PUMP CHECK
Pumping Systems Analysts
Hydraulic Test Report

Since 1958

(951) 684-9801 • Lic. 799498 • Fax (951) 684-2988

Golden State Water Company 2283 Lake Marie Drive	Test Date: 08/14/2023 Pump type: SUB Plant: Lake Marie 4 System: Lake Marie

A test was made on this well pump and the following information was obtained.

EQUIPMENT

PUMP:	Grundfos	SERIAL:	N/A
MOTOR:	Hitachi	SERIAL:	G2729701H
H.P.	150	LAT/LON:	34.51.976n120.22.661w
METER:	1009483490	REF #:	PC 4168

TEST RESULTS

	TEST 1	TEST 2
Discharge, PSI	3.0	12.5
Discharge head, feet	6.9	28.9
Standing water level, feet	750.8	
Drawdown, feet	13.9	12.7
Pumping water level, feet	764.7	763.5
Total pumping head, feet	771.6	792.4
Gallons per minute flow	**487**	**467**
Gallons per foot of drawdown	35.0	36.8
Acre feet pumped per 24 hours	2.152	2.065
KW input to motor	115.1	115.3
HP input to motor	154.2	154.5
Motor load, % BHP	92.0	92.2
Measured speed of pump, RPM	n/a	
KWH per acre foot	1283.8	1340.0
Overall Plant efficiency in %	**61.5**	**60.5**

Test 1 was the normal operation of the pump at the time of the test. The other results were obtained by throttling the pump discharge at near design.

The airline and gauge now read correct. The airline length was calibrated at 779.7'.

If you have any questions please contact Jon Lee at (951) 684-9801.

P.O. Box 5646, Riverside, California 92517

ANNUAL PUMPING COST ANALYSIS

Golden State Water Company   Test date: 08/14/2023

Plant: Lake Marie 4
Meter No: 1009483490
H.P. 150

The following cost analysis is presented as an aid to your cost accounting and planning. It is an **Estimate** based on the pump test data and your energy use or hours of operation during the previous 12-month period.

		EXISTING CONDITIONS	
Total annual kWhrs		170,578	
Total annual cost		$31,266.98	
KW input to motor		115.1	
Hours of operation per year		1482	
Equivalent 24 hour days		61.8	
Acre feet pumped per 24 hour day		2.1518	
Acre feet pumped per year		**132.9**	
Average cost per kWhr		$0.1833	Estimated
Average cost per hour		$21.10	
Average cost per acre foot		$235.32	
Overall plant efficiency	%	61.5	

PUMP CHECK
Pumping Systems Analysts
Hydraulic Test Report
Since 1958
(951) 684-9801 • Lic. 799498 • Fax (951) 684-2988

Golden State Water Company		Test Date:	08/14/2023
2366 East Clark Avenue		Pump type:	SUB
		Plant:	Vineyard 6
		System:	Lake Marie

A test was made on this well pump and the following information was obtained.

EQUIPMENT

PUMP:	Flowserve	SERIAL:	N/A
MOTOR:	Flowserve	SERIAL:	504585485
H.P.	150	LAT/LON:	34.52.165n120.22.458w
METER:	1009516621	REF #:	PC 3730

TEST RESULTS

	TEST 1	TEST 2
Discharge, PSI	39.5	52.0
Discharge head, feet	91.2	120.1
Standing water level, feet	669.6	
Drawdown, feet	28.9	27.8
Pumping water level, feet	698.5	697.4
Total pumping head, feet	789.7	817.5
Gallons per minute flow	**490**	**469**
Gallons per foot of drawdown	17.0	16.9
Acre feet pumped per 24 hours	2.166	2.073
KW input to motor	112.0	112.4
HP input to motor	150.1	150.6
Motor load, % BHP	89.5	89.9
Measured speed of pump, RPM	n/a	
KWH per acre foot	1241.1	1301.4
Overall Plant efficiency in %	**65.1**	**64.3**

Test 1 was the normal operation of the pump at the time of the test. The other results were obtained by throttling the pump discharge.

The airline and gauge now read correct. The airline length was calibrated at 786.3'.

If you have any questions please contact Jon Lee at (951) 684-9801.

P.O. Box 5646, Riverside, California 92517

ANNUAL PUMPING COST ANALYSIS

Golden State Water Company Test date: 08/14/2023

Plant: Vineyard 6
Meter No: 1009516621
H.P. 150

The following cost analysis is presented as an aid to your cost accounting and planning. It is an **Estimate** based on the pump test data and your energy use or hours of operation during the previous 12-month period.

		EXISTING CONDITIONS	
Total annual kWhrs		60,480	
Total annual cost		$12,918.53	
KW input to motor		112.0	
Hours of operation per year		540	
Equivalent 24 hour days		22.5	
Acre feet pumped per 24 hour day		2.1658	
Acre feet pumped per year		**48.7**	
Average cost per kWhr		$0.2136	Estimated
Average cost per hour		$23.92	
Average cost per acre foot		$265.10	
Overall plant efficiency	%	65.1	

S.M.

Pump Check 5/97

(951) 684-9801

GOLDEN STATE WATER COMPANY

Field Pump Test Sheet

249 3168458
114629 KWH

System LAKE MARIE Plant VINEYARD Pump 5

Pump Location 2366 E. CLARK AVE. Pump Type SUB

PUMP DATA PC471 ~~SCE Ref/State Well~~ # 34.52.178 N 120.22.445 W

Pump CHRISTENSEN/GOULDS Type Wtr Syst (To RESV.) Ser. No. -

Well Depth Pump Setting 700 No. Stages 6 Size & Type 9 WALC

Rated Head 734 Rated Capacity 400 Rated Speed 3450

MOTOR DATA

Make INDAR Frame - Type - Ser. No. -

HP 125 Volts 460 Amps 151 Phase 3 Code - Speed 3500

TEST DATA System Static 400 System Pressure 47.0 (DOA/~~ROA~~) Time

Test Points	#1 NOP-TH AS FOUND	#2 TH	#3	#4	
Discharge P.S.I.	111.5	123.5			Water Level 634.2 Ft.
Suction PSI/VAC					Gauge 24.5 #= 56.6 Ft.
Discharge Head Ft.	257.6	285.3			Airline= 690.8 Ft.
Suction Lft/Hd Ft.			PACKER	INSTALLED	Pipe ID 6 1/8 CORP IN VAULT
Drawdown Feet	54.3	50.8			Area 29.465
Pumping Level 1.0/2.5	688.5	685.0			Utility Co. PG+E
Total Head-Ft.	946.1	970.3			Meter # 1009516621
Turb./Merc.					Volts 120-480
Hall Flow Meter	7.0	5.9			K_h 1.8 Mult. 80
G.P.M.	206	174			No Load Voltage: 496 / 500 / 498
Water Meter GPM	199				Test Point
Gals/Ft. Drawdown	3.8	3.4			Volts 495.7: 494 / 497 / 496
Acre Ft./24 hrs.	.911	.768			Amps 125.0: 124 / 125 / 126
Revs. Secs.	24.4 / 61.8	23.8 / 60.6		5+6 ON SAME MTR	KVA 107.2 P.F. 80.4
KW Input	86.2	84.4			Water Meter # 09-2021
HP Input	115.5	113.1			McCROMETER V CONE
Water HP	49.2	42.6			Cal. CU FT. X 100
B.H.P. @ 89.5 %	103.4	101.2			Revs. 2 Secs. 450.69
Motor Load in %	82.7	81.0			
Pump RPM	/	/		A16	$/kWH .2276 KW 53.2
KWH/Acre Ft.	2270.9	2637.5	2627.4		Hr/yr 57 Imp. Eff. 69
Over-all Eff.	42.6	37.7			Hr. Meter 00911.2

Remarks TEST 1 WAS W/ THE DISCHARGE VALVE PARTIALLY THROTTLED AS FOUND TEST 2 WAS THROTTLED FURTHER. PUMP EFF #1 47.6% #2 42.1%. CHECKS SLIGHTLY ABOVE THE CURVE.

Tested by: CS GS + KIRBY Date 12 AUG 2015

A-195

TRANS. READ 580 PUMPING, WOR

23622

From: Chris Malejan
To: Fields, James
Cc: Kendall Houghton
Subject: RE: 15800126 Lake Marie Booster - Spare Can Issue
Date: Tuesday, January 17, 2023 10:54:48 AM

Hi James,

I am available this afternoon from 3-5.

Christopher Malejan
PE, PMP
C: 805.503.0611

From: Fields, James <James.Fields@gswater.com>
Sent: Tuesday, January 17, 2023 9:32 AM
To: Chris Malejan <CMalejan@wsc-inc.com>
Cc: Kendall Houghton <khoughton@wsc-inc.com>
Subject: RE: 15800126 Lake Marie Booster - Spare Can Issue

Hi Chris,

What time works best for you for a follow-up call for Lake Marie? I'd like to include an operations engineer on the call as well, but I'm also meeting with the Operations team to go over options for the site.

One of the options is to let go of the 3rd booster, however the purpose of the new booster was to give the system more reliability on fire flow in order to perform pump maintenance at the site.

Both A & B boosters alternate run times during the day for system demand, and both are needed to run for a fire flow. When one of the boosters are taken offline, the Lake Marie system does not have fire flow capacity until the pump is back online. This is at least my understanding.

Another option is to include pulling one of the existing boosters to run a camera down to look for the underside of the spare can. If the plug is visible, we could get a better idea what we're dealing with for plug removal. Unfortunately, if we do remove the plug, we'll need to add more planning into shutting down both boosters to remove the plug and clean-up the debris inside the 16" suction pipe generated during the operation. This may be more work, however it also allows the Operations team a window to perform maintenance on the existing boosters while the system is running on a temporary booster. This option is more work, but would accomplish the scope objective of the project. It hinges on how the investigation goes on the existing plug, if possible.

The good news is the generator is on schedule to arrive around the end of February. This just means our main objective for the generator pad hasn't changed, but if we go the route of a horizontal booster, we may need to move the generator pad over to leave space for the booster. I'll know more once we have our meeting this afternoon.

Thanks,
Jimmy

From: Chris Malejan <CMalejan@wsc-inc.com>
Sent: Monday, January 16, 2023 10:27 AM
To: Fields, James <James.Fields@gswater.com>
Cc: Kendall Houghton <khoughton@wsc-inc.com>
Subject: RE: 15800126 Lake Marie Booster - Spare Can Issue

EXTERNAL EMAIL
Hi James,

Oh no. If you have time this week, we should discuss alternatives. An above-grade pump poses a risk in maintaining its prime and may not something operations will want to manage.

Has GS considered just abandoning the installation of the third pump? What operational benefits does GS gain with the addition of the third pump (perhaps other than redundancy)?

Christopher Malejan
PE, PMP
C: 805.503.0611

From: Fields, James <James.Fields@gswater.com>
Sent: Friday, January 13, 2023 10:46 AM
To: Chris Malejan <CMalejan@wsc-inc.com>
Cc: Kendall Houghton <khoughton@wsc-inc.com>
Subject: 15800126 Lake Marie Booster - Spare Can Issue

Good morning Chris,

Yesterday afternoon, operations was able to clean off the debris inside the spare 16" steel pump can at the Lake Marie Plant. We came across a concrete plug approximately 6-FT below grade without any way to remove or pull the plug out of the steel can. There are striations of concrete on the side walls for the steel can as well, indicating the plug was poured into the can. I've gone through our records but cannot find any information on it's construction or about a plug for the spare can.

The vertical boosters are tied to a 16" AC pipe to the reservoir approximately 12'-8" below grade. We do not know how the vertical cans connect below grade, but we are leery of trying to drill or break the concrete plug without a full system shut down. Since this would be a large undertaking, I'm considering switching to installing a Split-case Horizontal Booster pump instead of a vertical turbine pump.

The location of the horizontal pump would likely be set where the current gas booster is located. This would mean pushing the generator pad more east behind the reservoir, and next to the new booster pump. I will need a proposal from you to design a pump pad for a split-case horizontal pump, and piping to connect to the existing discharge header (see attached location with clouded area).

Another option would be to investigate the vertical pump cans on either booster A or B with a camera. This would require a pump shut-down, and a service crew to pull one of the vertical pumps out to service it, and run a camera to the bottom to try and see the bottom of the concrete plug. I'm going to discuss this option with operations as well as this may be useful information at this point.

If you have questions or would like to discuss other possible options, please give me a call so we can discuss further.

Respectfully,

Jimmy Fields
Capital Program Engineer
Golden State Water Company
Mobile: 805 354-4635

From: Gisler, Ernest A.
To: Insco, Mark; Sinagra, Dane; Fields, James
Subject: Lake Marie Plant - New Project for 2023 GRC
Date: Friday, January 27, 2023 10:11:36 AM

Based on field findings shared by Jimmy during the construction project for the addition of a third electric booster pump at Lake Marie Plant, we found the existing pump can appears to be filled with concrete and the material appears to be comprised of AC pipe. This likely means the other pump cans are also constructed of AC pipe.

Based on this new information, I suggest we consider including a project in the 2023 GRC to construct a new booster pump cans at Lake Marie, install new booster pumps if needed, keep existing pump station in service, setup cutover plan to allow us to operate existing pumps from generator and operate new pumps from MCC.

I would also recommend including cleaning up (removing or replacing) the dilapidated plywood structure.

I suggest we conduct a call to discuss how we should proceed.

Ernest A. Gisler, P.E.
Director of Engineering

Golden State Water Company
3005 Gold Canal Drive
Rancho Cordova, CA 95670

916-761-8373
eagisler@gswater.com

Project Description

Replace El Campo Tank No. 2 (Southwest).

Project Need

El Campo Reservoir No. 2 pumps from ground level to the Main Zone. As detailed in the 2019 Harper and Associates seismic/structural/safety and corrosion inspection report, the reservoir needs replacement.[55]

Conclusion

GSWC should replace El Campo Reservoir No. 2. The existing reservoir has reached the end of its useful life.

SANTA MARIA CSA (LAKE MARIE SYSTEM) – CAPITAL BUDGET

Lake Marie Plant, Booster C and Generator

(2022 Budget Item 51 – $553,900)

Project Description

Install Electric Booster C, permanent generator, and Automatic Transfer Switch (ATS) at Lake Marie Plant.

Project Need

The Lake Marie plant houses a 0.5 MG reservoir (the only storage in the Lake Marie system), one of two system water supply wells (Lake Marie Well No. 4), and a booster pump station

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[55] Attachment SM05 – Harper and Associates Engineering, Inc., Summary of Costs: El Campo Southwest Tank.

containing two electric boosters (Boosters A and B) and a diesel gas booster (Booster C). Currently, during a power outage, Booster C operates to maintain pressure in the system. However, the diesel booster pump has exceeded its useful life; it is outdated, and replacement parts can no longer be easily obtained. In order for the Lake Marie plant to continue to provide reliable water service to the Lake Marie system, the following improvements are needed: installation of an electric booster pump to replace the diesel Booster C, and installation of a permanent generator with ATS.

Conclusion

Diesel Booster C is outdated and it is difficult to find parts when repair is necessary. The existing booster should be replaced with an electric booster pump and a permanent generator with ATS should be installed.[56]

Vineyard Well 6, Well Improvements

(2023 Budget Item 51 – $524,700)

Project Description

Perform major rehabilitation of Vineyard Well No. 6 to improve yield and efficiency and extend the useful life of the well.

Project Need

Vineyard Well No. 6 was constructed in 2011 and needs rehabilitation in order to improve its yield and efficiency. Performing a major well rehabilitation that will clean both the well casing's interior and exterior sides will increase the well's specific capacity above recent levels and improve well performance and extend the life of the well. In addition, the corrosive

[56] Lake Marie System Water Master Plan, December 2019, page 8-2

TABLE 8-1 summarizes the recommendations that were developed as a result of the system condition assessment review.

TABLE 8-1 2011 Condition Assessment Plant Projects

Alternative Number	Facility	Project Description	Reason	Priority Category
1.2.0	Vineyard Well	Rehab Well #6	Well has experienced significant loss in yield and corrosive environment requires upgraded materials; major rehab will extend useful life of well for 10+ years	Short-term
1.3.0	Systemwide	Replace existing SCADA system with GSWC standard system	Migrate to system platform	Short-term
1.4.0	Lake Marie Plant	Install Electric Booster C, permanent generator and ATS	Diesel booster; old, outdated, and unable to find parts when repair necessary	Short-term

8.2.2 Pipeline Condition Review

In addition to facility condition, GSWC monitors distribution system condition through the tracking of pipeline leaks/breaks on an annual basis; FIGURE 8-1 is a map of the leaks in the Lake Marie System from 2014 to 2018. This information was used, along with additional risk assessment analysis, to make recommendations regarding potential CIP projects and in the prioritization of those projects. (See GSWC's *Pipeline Management Program Report* and *Risk Based Asset Management Program Report*.)

TABLE 8-2 2011 Condition Assessment Pipeline Projects

Alternative Number	Recommended Improvement	Reason	Priority Category
1.5.0	Private Dr n/o Fallen Leaf Dr, Replace 3-inch Steel with approximately 450 LF of 6-inch PVC	Age, size and material of pipeline	Short-term
1.6.0	Pipeline to Oil Patch Area, Replace 3-inch Steel with approximately 1,500 LF of 8-inch PVC	Age, size and material of pipeline	Short-term
1.7.0	Pipeline to Oil Patch Area (Phase II), Replace main e/o Clark Ave and install new PVC in vineyard easement	Relocate main from under line of eucalyptus trees into new easement e/o Lake Marie Country Club	Short-term
2.1.0	Lake Marie-Orcutt System interconnection, Approximately 7,800 LF of 12-inch PVC	Increase source water reliability and share storage facilities	Short-term

Attachment 5-2

GSWC's response to DR SN2-011

Golden State Water Company
A Subsidiary of American States Water Company

November 22, 2023

To: Susan Nasserie, Public Advocates Office
CALIFORNIA PUBLIC UTILITIES COMMISSION
505 Van Ness Avenue
San Francisco, CA 94102

Subject: Data Request SN2-011 (A.23-08-010) Lake Marie Booster Station Follow Up
Due Date: November 22, 2023

Dear Susan Nasserie,

In response to the above referenced data request number, we are pleased to submit the following responses:

Lake Marie Replace Booster Station $1.2 million (2025 and 2026) Follow Up Questions

Question 1:

Referring to GSWC's response to DR SN2-010 Question 6, Attachment: A.20-07-012 Hanford and Insco Operating District Capital Testimony page 92 stated that "Diesel Booster C is outdated and it is difficult to find parts when repair is necessary. The existing booster should be replaced with an electric booster pump and a permanent generator with ATS should be installed."

Please answer the following questions:

a) Provide support for the assertion that diesel booster C is outdated and it is difficult to find parts when repair is necessary.
b) Provide maintenance and repair records for the diesel booster C for the past ten years.
c) Provide any and all evidence that GSWC possesses documenting or demonstrating any issues, including failures and repairs with the diesel booster C. This includes, but is not limited to any incident reports or engineering reports.
d) Provide the annual usage (in hours) of the diesel booster C for the past ten years.
e) Is the diesel booster C equipped with a device such as an hour meter that tracks the lifetime usage of the booster? If so, what is the current usage of the booster (in hours)?
f) Provide the SCADA log of booster C usage for the past ten years. If such SCADA log or hour meter are not kept, explain how GSWC keeps track of the usage of its boosters.

Response 1:

a) The 22 year old equipment is no longer being manufactured. The statement referenced was communicated to GSWC Planning staff from Coastal District staff, that parts are not readily available.
b) See attachment 'SN2-011 Q1b – Maintenance'. This information was obtained by GSWC from the sole contractor who has worked on booster C.
c) In an attempt to be responsive to your data request, Operations has reached out to the contractor that services the pump for any reports but has not received any reports to date.
d) See attachments 'SN2-011 Q1d – Annual Usage' and 'SN2-011 Q1d-Annual Usage 2020-2023'.
e) Yes, the current reading is 422 hours.
f) The diesel-powered booster pump identified as Pump C is on SCADA and there are trends, however, there is no hour meter on SCADA. Additionally, when utility power goes out at the Lake Marie Plant (and Booster C is on) we lose communication with SCADA and the run times are not captured.

Question 2:

Referring to GSWC's response to DR SN2-010, Question 5, Attachment: SN2-010 Q5 Communication p. 1 of 4 shows correspondences between GSWC (James Fields) and a consultant/vendor (Chris Malejan of WSC-Inc). GSWC stated two options as the following:

"One of the options is to let go of the 3rd booster, however the purpose of the new booster was to give the system more reliability on fire flow in order to perform pump maintenance at the site. Both A & B boosters alternate run times during the day for system demand, and both are needed to run for a fire flow. When one of the boosters are taken offline, the Lake Marie system does not have fire flow capacity until the pump is back online. This is at least my understanding.
Another option is to include pulling one of the existing boosters to run a camera down to look for the underside of the spare can. If the plug is visible, we could get a better idea what we're dealing with for plug removal. Unfortunately, if we do remove the plug, we'll need to add more planning into shutting down both boosters to remove the plug and clean-up the debris inside the 16" suction pipe generated during the operation. This may be more work, however it also allows the Operations team a window to perform maintenance on the existing boosters while the system is running on a temporary booster. This option is more work, but would accomplish the scope objective of the project. It hinges on how the investigation goes on the existing plug, if possible."

Please answer the following questions:

i. GSWC stated, "the purpose of the new booster was to give the system more reliability on fire flow in order to perform pump maintenance at the site. When one of the boosters are taken offline, the Lake Marie system does not have fire flow capacity until the pump is back online."

i) For each booster pump A and B, provide maintenance and repair records for the past ten years, including the duration for each maintenance and repair record.

ii) Has GSWC considered purchasing a portable booster pump to replace the diesel booster C?

 If yes, explain why the purchasing portable booster pump option was not selected, and include any and all support on how GSWC arrived at this decision.

 If not, explain why not.

iii) Provide a cost estimate to purchase a portable booster pump, including any and all supporting documentation such as invoices or quotes.

iv) Has GSWC considered renting a portable booster pump to replace the diesel booster C?

 If yes, explain why the renting option was not considered, and include any and all support on how GSWC arrived at this decision.

 If not, explain why not.

v) Provide a cost estimate to rent a portable booster pump, including any and all supporting documentation such as invoices or quotes.

vi) Why does not GSWC install the replacement electric booster in the same location as the current diesel booster C? Explain why this option was not selected and include any and all support for how GSWC arrive with this decision.

vii) Provide any and all support for how GSWC arrived at the likelihood of one of the boosters (A or B) failing at the Lake Marie plant. This includes, but is not limited to, any engineering reports, incident reports, or internal company communications including emails or memorandums.

ii. As shown in the correspondence above, GSWC investigated two options. The first option is to let go of the third booster (diesel booster C) and rely on boosters A and B for the system demand. The second option is to pull one of the existing boosters to run a camera down to look for the underside of the spare can, as discussed above.

i) Provide the fire flow capacity calculations to show that both booster A and B are required?

ii) Referring to GSWC's response to SN2-010, Question 4 (c), provide the source documentation for the "standard inspection" of spare pupm can.

iii) Provide a copy of the investigation report/findings of the existing plug as mentioned in the discussion/correspondence in the attachment SN2-010 Q5 Communication in p.1 of 4.

Response 2:

i.

i. The information relating to this request is not readily available. It would take an extensive search of the numerous Work Orders and Task Orders done on the boosters for the last 10 years. There have been many contractors used to service the boosters.

ii. GSWC did not consider purchasing a portable booster pump to replace the diesel-powered booster pump identified as Pump C. The suction head requirements are not conducive for the operation of a portable booster pump as it would not have sufficient head capability to draw water from the below grade reservoir due to the pump and suction line being located above ground.
iii. A portable booster pump is not a viable long-term solution.
iv. GSWC did not consider renting a portable booster pump to replace the diesel-powered booster pump identified as Pump C as this is not a viable long-term solution. Pump C is required to supply the system during high demands, and we would need to rent for the life of the Plant.
v. Renting a portable booster pump is not a long-term viable solution.
vi. Installing a replacement electric booster in the same location as the current diesel-powered booster pump identified as Pump C is not a viable option. The existing Pump C must remain in service to supply the system during periods of high demands. Constructing a new Pump C in a different location on the plant site would minimize the disruption to water supply during construction. The existing Pump C can continue to be utilized during construction of the new Pump C at a different location, with only a short period of downtime to connect the pump to the reservoir.
vii. Any booster pump could fail at any time. The Lake Marie Plant is a critical facility as it is the only plant providing water directly to the system. As stated in the 2022 Lake Marie System Water Master Plan, pg. 2-4 "Multiple pumps at each station, or multiple pumping stations that serve the same pressure zone, help to increase water system reliability by ensuring that water can still be delivered into that zone if one pump is out of service."

ii.
- i. See the 2022 Lake Marie System Water Master Plan, Existing System Supply and Capacity Analysis, pg. 5-6.
- ii. The spare pump can was visually inspected by GSWC and the contractor and water was visible in the can. It was assumed the water level was at the HGL of the reservoir.
- iii. The contractor worked with GSWC to investigate the existing spare pump can to prepare for ordering the new electric booster. The concrete plug would not break apart with a digging bar (a significant plug).

Question 3:
During the site visit (Nov 2, 2023) to the Lake Marie plant, GSWC stated that a power outage recently occurred, and a portable generator was brought from another GSWC plant to operate at the Lake Marie plant because the new permanent generator (CWIP project) was not yet operable.

a) Provide the date(s) and duration(s) of the power outages discussed during the site visit.
b) Identify the original facility/site/plant of the portable generator.
c) Identify the size of the portable generator (kW).
d) How many portable generators GSWC has in the Santa Maria rate making area (RMA)?
e) When will the new permanent generator be able to operate in the Lake Marie plant?
f) Identify the size of the new permanent generator (kW).

Response 3:

a) The power outage discussed during the site visit occurred at 6pm 10/21/23 to 3pm 10/22/23 for approximately 21 hours.
b) The portable generator was originally located in the Orcutt system at the Mira Flores 5 Plant.
c) The portable generator is rated 350 kW.
d) GSWC has two portable generators in the Santa Maria RMA; only one is appropriately sized to operate the Lake Marie Plant.
e) The new permanent generator will only be able to operate Boosters A & B and not the existing Booster C (until it is replaced). See GSWC's response to DR SN2-010, Question 3c for start-up schedule.
f) The new permanent generator is rated 230 kW.

Question 4:
Referring to GSWC's response to DR SN2-010 Question 6, Attachment: A.20-07-012 PCE_RI - Lake Marie (Lake Marie Plant, Booster C and Generator). GSWC also identifies this project as a CWIP project in the GSWC's 2023 GRC, A.23-08-010 CWIP workpaper.[2,3]

a) The following picture is a snapshoot of the CWIP project, DR SN2-010 Question 6: Attachment: A.20-07-012 PCE_RI - Lake Marie (Lake Marie Plant, Booster C and Generator).

Item No	Description	Quantity	Unit	2019 Unit Cost	Cost
1	625 gpm Booster C Pump	1	Ea.	$20,000	$20,000
2	25 HP Booster C Motor	1	Ea.	$10,000	$10,000
3	VFD Section	1	Ea.	$30,000	$30,000
4	Pump Disconnect	1	Ea.	$10,000	$10,000
5	Wiring	1	Ea.	$15,000	$15,000
6	350 KW Generator	1	Ea.	$125,000	$125,000
7	Generator Pad	1	Ea.	$20,000	$20,000
8	SCADA Programming	1	Ea.	$20,000	$20,000
9	Electrical Service Upgrade	1	LS	$35,000	$35,000
10	Remove Booster C Suction Piping and Plate	1	LS	$10,000	$10,000
11	Temporary Tank/Booster setup	1	LS	$20,000	$20,000
12	Plant Piping	1	LS	$15,000	$15,000
13	Demo & Removal of Gas Booster	1	LS	$10,000	$10,000
14	ATS	1	LS	$25,000	$25,000
15		0	Ea.	$0	$0
16		0	Ea.	$0	$0
17		0	Ea.	$0	$0
18		0	Ea.	$0	$0
	Construction				$365,000
	Company Direct Costs* (15%)				$54,750

*Includes Permits, engineering, inspection, District/Regional costs, insurance, tools, taxes, and construction services

i) As shown in the snapshot above (items no. 1 to 14), identify all CWIP items that are already completed.

ii) Please provide the cost breakdown of the completed items in question 4.a.(i) (in Excel format).

iii) Please include a copy of all invoices and other supporting documentation for all completed items in question 4.a.(i).

Response 4:

i. Items 5, 6, and 7 are near completion. GSWC attempted to utilize an existing ATS, however, the existing ATS for the Plant was damaged during a power outage, so GSWC is in the process of replacing the ATS for the generator. Items 1 & 3 were partially started during the project to receive submittals from the contractor; however, they were cancelled when it was discovered that the existing booster can was unusable.

ii. See attachment 'SN2-011 Q4ii - Cost Comparison Spreadsheet'. Company direct costs (design, company labor & overhead) are included as well, comparing the PCE estimated cost.

iii. See attachments 'SN2-011 Q4iii – Invoices', 'SN2-011 Q4iii – CO 1' and 'SN2-011 Q4iii – TAR Report to date'.

END OF RESPONSE

[2] *GSWC's testimony: McDonough, Sinagra - Vol 1 CWIP Testimony, Appendix 1 and Attachments A to D – APP, page 11. Subcategory 4a – Projects Approved in the Previous GRC that will be completed in the 2020 rate cycle with no Change in Budget or Scope.*

[3] *GSWC's workpaper (ROM): Y_SEC-50_RB_CWIP, line 680: WO description shows as "Lake Marie Plant, Booster D and Gen."*

Attachment 5-3

GSWC's response to DR SN2-008

Golden State
Water Company
A Subsidiary of American States Water Company

October 3, 2023

To: Susan Nasserie, Public Advocates Office
CALIFORNIA PUBLIC UTILITIES COMMISSION
505 Van Ness Avenue
San Francisco, CA 94102

Subject: Data Request SN2-008 (A.23-08-010) Destroy Wells
Due Date: October 3, 2023

Dear Susan Nasserie,

In response to the above referenced data request number, we are pleased to submit the following responses:

Destroy Wells
Referring to GSWC's Workpaper file: SEC-51_RB_FDR Capital Budget, tab: Project List - DO NOT SORT!, As shown in Picture-1: Line 69, "Mira Flores Well No.3, Destroy Well..." project, GSWC identifies a Design Total of $69,600 and a Construction Total of $0. Similarly, in line 77, "Willowood Plant, Destroy Well No. 1" project, GSWC identifies a Design Total of $41,300 and a Construction Total of $0.

Pictur

	D	E	F	G	I	J	AG	AH	AI	AJ	AK
20	CSA	Systen	Cost Center	BUDGET GROU	Funding Project Numbe	PROJECT NAME	2026		Design Total	Constructio n Total	Project Total
69	Santa Maria	Orcutt	157	51	1572651-03	Mira Flores Well No. 3, Destroy Well, Raze Site	$ 69,600	$ -	$ 69,600	$ -	$ 69,60
77	Santa Maria	Tanglewood	157	51	1572651-05	Willowood Plant, Destroy Well No. 1	$ 41,300	$ -	$ 41,300	$ -	$ 41,30

Question 1:
For each project identified above, please confirm whether GSWC only proposes design costs in 2026.

Response 1:
For both projects, GSWC is proposing Design costs in 2026.

Referring to GSWC's workpapers file: PCE_RI - Orcutt (Mira Flores Well 3, Destroy Well, Raze Site, Pipeline Improvements), tab: Estimate Creator, as shown in picture-2.

Picture -2. *File:* PCE_RI - Orcutt (Mira Flores Well 3, Destroy Well, Raze Site, Pipeline Improvements),

Row	Include	Item	Quantity	Unit	Unit Cost W/ Location Mark-u	Total	Locatio	Unit Cost	Notes / Source	DCW Cost Sourc	Category
164	YES	Demolition Of All Piping At Plant	1	LS	$ 44,200.00	$ 44,200.00	11%	$ 40,000.00	WO 23600683, Culver City Perhar	DCW updated Q3 2022	
166	YES	Demolition To Existing Structures	3	EA	$ 11,050.00	$ 33,150.00	11%	$ 10,000.00	From DCW 2020 Booster Station N	DCW updated Q3 2022	Site Preparation & Demolitior
335	YES	PLC Modifications & Programming	1	LS	$ 19,890.00	$ 19,890.00	11%	$ 18,000.00	Bissell Plant, Expansion of Mangar	DCW updated Q3 2022	
487	YES	Well - demo	1	LS	$ 132,600.00	$ 132,600.00	11%	$ 120,000.00	Replace Roseton well #1 Age in 20	DCW updated Q3 2022	
509	YES	Pipeline Improvements in Clark Ave	1	LS	$ 22,100.00	$ 22,100.00	11%	$ 20,000.00			
510	YES	Limited Working Hours Due to PG&E D	20	DAY	$ 3,315.00	$ 66,300.00	11%	$ 3,000.00	2019 Memo cost escalated to 2022		
511	YES	Traffic Control	20	DAY	$ 828.75	$ 16,575.00	11%	$ 750.00	2019 Memo cost escalated to 2022		

Question 2:
On line 487, GSWC identifies a Well-demo Unit Cost of $120,000 with Notes/Source as "Replace Roseton well #1…" and DCW Cost Source as "DCW updated Q3 2022". However, on GSWC's workpapers file: PCE_RI - Tanglewood (Willowood Plant, Destroy Well 1), tab: Estimate Creator, line 487: GSWC identifies Well-demo with the same references with a Unit Cost of $145,000.

a) Identify the correct amount for the well-demo item.
b) Explain the reasons for the Unit Cost discrepancy between $120,000 and $145,000.
c) Include supporting documentation such as invoices, quotes, and other documents to derive the correct amount of the well-demolition.

Response 2:

a) The typical estimated base unit cost for well demolition is $120,000 and the adjusted estimated cost based on well specific conditions for the demolition of Willowood Well #1 (Tanglewood) is $145,000.
b) The unit cost of $120,000 was determined by DCW, based on their expertise and discussions between DCW and GSWC Engineering Planning and Capital Program Management staff. The adjusted cost of $145,000 for Willowood Well #1 was determined by a similar well demo project in Simi Valley, for which bid results were compiled in Q3 2022.
c) See attachment 'SN2-008 Q2 BT Demo Sycamore Well' for bid tab of recent similar well demo project in Simi Valley.

Question 3:
Provide the address of Mira Flores Well #3 location.

Response 3:
4979 Harmony Ln, Santa Maria, CA 93455 (N/side of Clark Ave 200' W/ of Harmony Lane).

Question 4:
List all facilities and equipment in the Mira Flores Well #3 location, including supporting documentation such as aerial pictures and a facility map.

Response 4:
Mira Flores Well No. 3 major facilities include Well No. 3 and chlorination. See 'A.23-08-010, Gisler, Insco Prepared Testimony Vol. 4 Attachment SM03 – Golden State Water Company, Memorandum, Mira Flores No.3 Plant Well Study, June 5, 2019, page 2' for aerial with well head labeled.

Question 5:
Provide a detailed breakdown for all assets included in the Utility Plan in Service for this location as well as the land. The breakdown should include cost, the year it was booked into ratebase, and a brief description of the assets. (in Excel format)

Response 5:
See attachment 'SN2-008 Q5' for detailed breakdown.

Question 6:
As shown in picture-2 above, GSWC proposes the following item listed below:

i) Demolition of All Piping at Plant (Unit Cost $40,000)
ii) PLC Modification and Programming (Unit Cost $18,000)
iii) Pipeline Improvement in Clark Ave. (Unit Cost $20,000)
iv) Limited Working Hours Due to PG&E De-Energizing / Re-Energizing Power Lines (Unit Cost S3,000)
v) Traffic Control (Unit Cost $750)

Please answer the following questions:

a) Explain why the item is needed for the project.
b) Please show how the unit cost was calculated, including a unit cost breakdown in Excel format.
c) Include supporting documents, such as past costs, vendor invoices, vendor quotes, internal/external communication, or authority requirement documentation showing why GSWC requires this item.

Response 6:

a)

(i) Mira Flores Well No. 3 is the only facility at the site and site limitations inhibit another well being constructed at this site. Therefore, GSWC proposes to raze existing piping to minimize the potential for contaminants to enter the aquifer.

(ii) When a well is destroyed, work is required to revise the SCADA system, including work at the PLC and with the programming to remove the associated well from the system.

(iii) The well demo will introduce two dead-ends in the distribution system. The pipeline improvements will resolve the issue.

(iv) See ‘A.23-08-010, Attachment SM03 – Golden State Water Company, Memorandum, Mira Flores No.3 Plant Well Study, June 5, 2019, page 2’ for explanation.

(v) Clark Ave is a major thoroughfare and any work within the roadway requires traffic control.

b) & c)

(i) & (ii) The unit cost was determined by DCW, based on their expertise and discussions between DCW and GSWC Engineering Planning and Capital Program Management staff.

(iii) The unit cost was determined by ‘A.23-08-010, Attachment 5 - GSWC Cost Estimating Table’ for pipe. See attachment ‘SN2-008 Q6 Invoice Orcutt Rd’ for base costs for cut & plug and remove valve that were escalated to 2022 costs using ENR CCI (20-City Avg).
$327x35=$11,445, $912x6=$5,472, $609x3=$1,827
Total=11,445+5,472+1,827=18,744≈20,000

(iv) & (v) The unit cost was determined by taking the costs in ‘A.23-08-010, Attachment SM03 – Golden State Water Company, Memorandum, Mira Flores No.3 Plant Well Study, June 5, 2019, page 4’ and escalating the costs to 2022 using ENR CCI (20-City Avg).

Question 7:
GSWC’s workpapers file: PCE_RI - Orcutt (Mira Flores Well 3, Destroy Well, Raze Site, Pipeline Improvements), tab: Cost Estimate (For Office 365) as shown in picture-3.

Picture-3

	A	B	C	D	E	F	G
4							
5		**Direct Construction Costs**				**334,815.00**	
6		Mobilization			10.00%	33,481.50	
7		Design Contingency				incl. in Capital Project List	
8		Construction Contingency				incl. in Capital Project List	
9		Payment and Performance Bond			3.00%	10,044.45	
10		Sales Tax			7.25%	24,274.09	
11		Escalation				incl. in Capital Project List	
12		Direct Cost (Permits & Fees)			15%	50,222.25	
13		**Recommended Budget**	Page 1			**452,837.29**	

a) In picture-3, cell F12, GSWC estimates a Direct Cost (Permits and Fees) of $50,222.25 Gisler, Insco Vol 1 Capital Testimony indicates Direct Costs as Design, Permits and Other Fees.2 Provide a list of design costs, permit costs, and other fees for all items listed in picture-2, including the supporting documentation, such as all invoices and quotes of design, permit requirements, and other necessary fees.
b) Explain why the Direct Costs of $50,222.25 are NOT included in the amount of $334,815 (see picture-3, cell F-5).

Response 7:

a) Direct Cost (Permits & Fees) are estimated at 15% of Direct Construction Costs and include design cost for the design-build documents, permit fees with the job hazard analysis (JHA) for the well destruction, design cost from the contractor to perform the investigation & cleaning phase ahead of well destruction, and direct costs from internal labor and inspection. See attachment 'SN2-008 Q7, Q9 TAR 09 25 23' for transaction analysis report of recent similar well demo project in Simi Valley which shows a Direct Cost of $50,256.15 at 23% of Direct Construction Costs.
b) Direct Construction Costs are those assets or activities directly related to project construction, while Direct Cost (Permits & Fees) are costs required for pre-construction activities.

Question 8:

Referring to GSWC's workpapers file: PCE_RI - Tanglewood (Willowood Plant, Destroy Well 1), tab: Estimate Creator, as shown in picture-4.

Picture -4. *File:* PCE_RI - Tanglewood (Willowood Plant, Destroy Well 1), *tab:* Estimate Creator

	B	C	D	E	F	G	H	I	J	K	L
19											
20	Includ	Item	Quanti	Unit	Unit Cost W/ Location Mark-up	Total	Location	Unit Cost	Notes / Source	DCW Cost Source	Category
166	YES	Demolition To Existing Structures	1	EA	$ 11,050.00	$ 11,050.00	11%	$ 10,000.00	From DCW 2020 Booster S	DCW updated Q3 2022	Site Preparation & Demolitior
487	YES	Well - demo	1	LS	$ 160,225.00	$ 160,225.00	11%	$145,000.00	Replace Roseton well #1 A	DCW updated Q3 2022	
509	YES	Well Inspection	1	LS	$ 27,625.00	$ 27,625.00	11%	$ 25,000.00			

In picture-4, cell I509, well inspection item with a unit cost of $25,000.

a) Explain why the well inspection item is needed for the project.
b) Please show how the unit cost was calculated, including a unit cost breakdown in Excel format.
c) Include supporting documents, such as past costs, vendor invoices, vendor quotation, internal/external communication, or other authority requirement documentation showing why GSWC proposes this specific item.

Response 8:

a) Well inspection is needed to document the work performed each day, track use of tools and materials used, and to ensure the scope of work and permit requirements are being met. Well contractors are required to notify GSWC Capital Program

Management staff of means of methods, tools used, number of times and hours performed to execute each operation to work on the well. The work requires specialty inspectors who are familiar with the water well industry and State of California requirements. Inspectors are critical for documenting work performed to validate and substantiate that GSWC destroyed the well in accordance with the State of California requirements and to protect the aquifer, and our customers, from potential groundwater contamination. Specialty inspectors also track the work in the event change orders are questioned or efficiency at the site is called to question.

b) See attachment 'SN2-008 Q8 Sycamore Well Demo Inspection' for onsite inspection proposal of recent similar well demo project in Simi Valley which shows a unit cost breakdown.

c) See response 8b above.

Question 9:

GSWC's workpapers file: PCE_RI - Tanglewood (Willowood Plant, Destroy Well 1), tab: Cost Estimate (For Office 365) as shown in picture-5.

Picture -5

	A	B	C	D	E	F	G
5		**Direct Construction Costs**				**198,900.00**	
6		Mobilization			10.00%	19,890.00	
7		Design Contingency				incl. in Capital Project List	
8		Construction Contingency				incl. in Capital Project List	
9		Payment and Performance Bond			3.00%	5,967.00	
10		Sales Tax			8.75%	17,403.75	
11		Escalation				incl. in Capital Project List	
12		Direct Cost (Permits & Fees)			15%	29,835.00	
13		**Recommended Budget**				**271,995.75**	

a) In picture-5, cell F12, GSWC estimates a Direct Cost (Permits and Fees) at $29,835. Gisler, Insco Vol 1 Capital Testimony indicates Direct Costs as Design, Permits and Other Fees.3 Provide a list of design costs, permit costs, and other fees for all items in picture-4, including the supporting documentation, such as all invoices and quotes of design, permit requirements and other necessary fees.

b) Explain why the Direct Costs of $29,835 are NOT included in the amount of $198,900 (see picture-5, cell F-5).

Response 9:

a) Direct Cost (Permits & Fees) are estimated at 15% of Direct Construction Costs and include design cost for the design-build documents, permit fees with the JHA for the well destruction, design cost from the contractor to perform the investigation & cleaning phase ahead of well destruction, and direct costs from internal labor and inspection. See attachment 'SN2-008 Q7, Q9 TAR 09 25 23' for transaction analysis report of recent well demo project in Simi Valley which shows a Direct Cost of $50,256.15 at 23% of Direct Construction Costs.

b) Direct Construction Costs are those assets or activities directly related to project construction, while Direct Cost (Permits & Fees) are costs required for pre-construction activities.

Question 10:
Referring to GSWC's workpapers file: PCE_RI - Cypress Ridge (Cypress Ridge Well 8, Destroy Well). Please answer the following questions:

Tab: Estimate Creator, line 335, PLC Modifications & Programming item with a Unit Cost of $18,000.

a) Explain why the PLC Modifications & Programming item is needed for the project.
b) Include supporting documents, such as past costs, vendor invoices, quotes, or internal/external communication.

Response 10:

a) When a well is destroyed, work is required to revise the SCADA system, including work at the PLC and with the programming to remove the associated well from the system.
b) The unit cost was determined by DCW, based on their expertise and discussions between DCW and GSWC Engineering Planning and Capital Program Management staff.

Question 11:
Tab: Front Sheet (For Office 365) in Project Need, GSWC states: "Cypress Ridge Well No. 8 (Avocet) has been out of service since prior to GSWC's acquisition of the Cypress Ridge System in 2015."

a) Provide the address of Cypress Ridge Well No. 8 location.
b) List all facilities and equipment in the Cypress Ridge Well No.8 location/land, including supporting documentation such as aerial pictures and a facility map.
c) How much of the land and its facility were booked in the ratebase during the GSWC's acquisition of Cypress Ridge System in 2015? Include supporting documentation such as internal/external communication or any documentation to support the amount.
d) Provide a detailed breakdown for all assets included in Utility Plan in Service for this facility/location as well as the land. The breakdown information should include cost, year it was booked into ratebase starting GSWC's acquisition of Cypress Ridge System in 2015, and a brief description of the assets. (in Excel format)

Response 11:

a) 766 Avocet Way, Arroyo Grande, CA 93420 (Avocet Way at Tern St).

b) Cypress Ridge Well No. 8 major facilities include Well No. 8. See attachment 'SN2-008 Q11 Aerial'.
c) See attachment 'SN2-008 Q11c,d, 13c,d' for detailed breakdown.
d) See attachment 'SN2-008 Q11c,d, 13c,d' for detailed breakdown.

Question 12:
Referring to GSWC's workpapers file: PCE_RI - Edna Road (Lewis Lane Plant, Destroy Well 2). Please answer the following questions:

Tab: Front Sheet (For Office 365) in Project Need, GSWC states: "Lewis Lane Well No. 2 has been out of service for an extended period of time due to the age and condition of the well. The well needs to be destroyed in order to meet California Department of Water Resources (DWR) requirement."

a) Provide the address of Lewis Lane Well No.2 location.
b) List all facilities and equipment in the Lewis Lane Well No.2 location, include supporting documentation such as aerial pictures and a facility map.
c) Provide a detailed breakdown for all assets included in the Utility Plan in Service for this location as well as the land. The breakdown should include cost, the year it was booked into ratebase, and a brief description of the assets. (in Excel format)
d) GSWC indicates that the Well No.2 has been out of service for a period of time due to age and well's conditions.
    (i) What year Well No.2 was constructed?
    (ii) Identified the date of the well begin out of service.
    (iii) Provide dates of well maintenance and rehabilitation since it was constructed, including supporting documentation such as maintenance or rehabilitation reports.

Response 12:
a) 7035 Lewis Ln, San Luis Obispo, CA 93401 (1600' S/E of Charles Dr).
b) Lewis Lane Well No. 2 major facilities include Well Nos. 2, 3, 4, generator, and chlorination. See attachments 'SN2-008 Q12 Aerial' and 'SN2-008 Q12 Site Plan'.
c) See attachment 'SN2-008 Q12c' for detailed breakdown of all assets located at the Lewis Lane site.
d)
    (i) 1991.
    (ii) January 1993.
    (iii) There are no such records due to the limited time the well was in service.

Question 13:
Referring to GSWC's workpapers file: PCE_RI - Cypress Ridge (Rural Well 1, Destroy Well). Please answer the following questions:
Tab: Front Sheet (For Office 365) in Project Need, GSWC states: "Rural Well No. 1 (El Campo) has been out of service since prior to GSWC's acquisition of the Cypress Ridge System in 2015."

a) Provide the address of Rural Well No.1 location.

b) List all facilities and equipment in the Rural Well No.1 location, including supporting documentation such as aerial pictures and a facility map.
c) How much of the land and its facility were booked in the ratebase during the GSWC's acquisition of Cypress Ridge System in 2015? Include supporting documentation such as internal/external communication or any documentation to support the amount.
d) Provide a detailed breakdown for all assets included in Utility Plan in Service for this facility/location as well as the land. The breakdown information should include cost, year it was booked into ratebase starting GSWC's acquisition of Cypress Ridge System in 2015, and a brief description of the assets. (in Excel format)

Response 13:

a) 650 W El Campo Rd, Arroyo Grande, CA 93420 (El Campo Rd 750' SW/ Halcyon Rd).
b) Rural Well No. 1 is located at the El Campo Plant. Major facilities include Well Nos. 1, 2, 5, 6, five booster pumps A-E, two reservoirs, and chlorination. See attachments 'SN2-008 Q13 Aerial' and 'SN2-008 Q13 Site Plan'.
c) See attachment 'SN2-008 Q11c,d, 13c,d' for detailed breakdown of all assets located at the El Campo site.
d) See attachment 'SN2-008 Q11c,d, 13c,d' for detailed breakdown of all assets located at the El Campo site.

END OF RESPONSE

Attachment 5-4

GSWC's response to DR SN2-009

Golden State
Water Company
A Subsidiary of American States Water Company

October 26, 2023

To: Susan Nasserie, Public Advocates Office
CALIFORNIA PUBLIC UTILITIES COMMISSION
505 Van Ness Avenue
San Francisco, CA 94102

Subject: Data Request SN2-009 (A.23-08-010) Equip Rural Well 5 – Response
Due Date: October 19, 2023 Extension Due Date: October 26, 2023

Dear Susan Nasserie,

In response to the above referenced data request number, we are pleased to submit the following responses:

Rural Well No. 5 ($212,100 in 2024 and $1.793 million in 2025)
Referring to GSWC's Gisler, Insco – Vol 1 Capital Testimony: Attachment SM09, Water Reliability Study.[2]

Question 1:
Page 2 of 79 Executive Summary states "As a result of the Santa Maria Valley Groundwater Basin (Basin) adjudication, the system is located within the area of the basin managed by the Nipomo Mesa Management Area (NMMA) and must adhere to the Basin supply constraints and recommendations for sustainable management, as defined in the NMMA Annual Reports and the final Court Judgment dated April 17, 2017 which includes the 2005 Stipulation. The Stipulation requires the NMMA purveyors to secure a minimum of 2,500 AFY of supplemental water and GSWC is responsible for 16.66 percent of the 2,500 AFY which corresponds to 416 AFY. GSWC is a participant in the Nipomo Community Services District (NCSD) Nipomo Supplemental Water Project (NSWP) and has both the obligation and right to purchase approximately 416 AFY when the NSWP is complete. New interties with NCSD to relay supplemental water to GSWC where needed will reduce the stress on the Basin aquifers and increase reliability."

(a) Provide all documentation of the GSWC agreement(s) with the parties related to the GSWC being responsible for 16.66% of the 2,500 AFY of supplemental water, including the agreement with NCSD-NSWP.
(b) Provide the NMMA Annual Reports as discussed above.
(c) Provide the final Court Judgment dated April 17, 2017.

(d) On page 2-4 of Cypress Ridge Master Plan, GSWC states “As a party to the Settlement Stipulation, GSWC is responsible for purchasing 16.66 percent (approximately 416.5 AFY) of the 2,500 AFY (800 AFY in Years 2016-2020, 1,000 AFY in Years 2021-2025 and 2,500 AFY in Years 2026 and beyond) to the Nipomo Mesa. A pipeline, the Waterline Intertie Project, was completed and is conveying water from the City of Santa Maria to the NMMA. In addition, GSWC and NCSD are in process of constructing a project to connect the NCSD distribution system and the Cypress Ridge System; interconnection facilities at Lyn Road are planned for 2025 construction, and a pipeline from the interconnection location to the El Campo Plant has been completed.”

   i. How long does GSWC have the obligation and right to purchase the 416.5 AFY? Please identify the discussion or statement in the agreement provided in Question 1 (a) above.
   ii. As mentioned above, the interconnection facilities will be constructed in 2025, while GSWC has been responsible for purchasing 16.66 percent of 800 AFY in 2016-2020, including 1,000 AFY in 2021-2025. Please explain in detail how GSWC is completing its obligations to purchase this water from 2016 to 2022.

(e) Provide the NCSD-NSWP project’s status, including the estimated time frame the NSWP will be completed.

(f) Provide the estimated time GSWC will begin purchasing supplemental water via NCSD interties.

(g) How much is the cost to purchase the supplemental water per AF? Please identify the cost to purchase the water in the agreement provided in Question 1(a) above.

(h) Identify where in the Result of Operations Model (ROM) GSWC reflects the supplemental water purchase cost from 2017 to 2027. Also, identify the recorded purchase cost amount from 2017 to 2022 and the estimated purchase cost amount from 2023 to 2027.

(i) Identify the interties connection capacity in gallons per minute (gpm).

(j) Identify the zone of the Cypress Ridge system where the supplemental water will be delivered.

(k) With GSWC purchasing 416.5 AFY of supplemental water, will GSWC reduce groundwater pumping in the system? Please explain in detail.

Response 1:

a) See pdf attachments: Q1(a) - NSWP Wholesale_Water_Agreement_05-07-13.pdf and Q1(a) - NSWP WATER PURCHASE AGREEMENT 10-16-15.pdf.
b) See pdf attachments for each of the 15 NMMA Annual Reports prepared to date.
c) The 2014 Amended Judgement is provided (see attachment “Q1(c) - Amended Final Judgment Santa Maria (2014).pdf”). A typo in the 2019 Cypress Ridge Water Reliability Study incorrectly referenced April 17, 2017 as the date of the Amended 2008 Judgement. The correct amended date is April 17, 2014.
d) Part (i): Section IV(A) of the purchase agreement lists the termination date as June 30, 2085. Part (ii) GSW is making quarterly payments to NCSD for its obligations under the NSWP Water Purchase Agreement which includes GSW’s proportional

costs for capital, operation and maintenance, and water delivered to the Nipomo Mesa since July 2015.

e) Completion of the NSWP is projected to occur by July 1, 2025 when the NSWP Wholesale Water Agreement with City of Santa Maria requires 2,500 AF of annual deliveries to the Mesa. NCSD is committed to constructing, and currently in the process of designing the interconnections and associated infrastructure with GSW and Woodlands Mutual Water Company, by July 1, 2025.
f) GSW is obligated to fund its proportional share of NSWP costs to bring supplemental water to the Nipomo Mesa which it has been doing since July 2015. The interconnections will allow for delivery of water directly to GSW as determined based on basin conditions.
g) The current supplemental costs of water is $2752.35 per AF. This includes the cost of water from the City of Santa Maria, NCSD O&M costs per AF and a NCSD Administration fee per AF. These costs are adjusted annually. Amortized recovery of proportional NCSD capital costs pursuant to section I.K of the Water Purchase Agreement is assessed annually, and payments are made quarterly.
h) Recorded purchase costs for Santa Maria can be found in workpaper “SEC-41_EXP_FDR Purchased Water.xlsx” tab “Rec Purch Water WS-01”. Forecasted purchase costs can be found in “SEC-41_EXP_FDR Purchased Water.xlsx” tab “OUT_Proj Purchased Wtr Cost”.
i) The interties are under design by NCSD. It is estimated that each of the two interties to GSW will have a capacity of 129 gpm (to potentially accommodate 208 AF per Year each).
j) GSW and NCSD are in process of constructing a project to connect the NCSD distribution system and the Cypress Ridge System; interconnection facilities at Lyn Road are planned for 2025 construction, and a pipeline from the interconnection location to the El Campo Plant has been completed. The interconnection is within the "Main Pressure Zone" of the GSW Cypress Ridge System.
k) GSW is obligated to purchase its proportionate share of NSWP water to be delivered to the Nipomo Mesa (NMMA) to replenish groundwater levels regionally. As noted in section VI.B of the Water Purchase Agreement, the highest priority use of the NSWP water shall be to offset groundwater pumping within those regions of the NMMA where depressed groundwater levels exist. Since GSW’s Cypress Ridge and Nipomo Systems currently only utilize groundwater, any supplemental water delivered through the interconnections to meet system demand will reduce groundwater pumping. The amount delivered to GSW will be dependent on basin conditions.

Question 2:
Page 4 of 79 (Existing Wells) refers to the Well Specific Assessments (Appendix B). However, Appendix B is not provided in the Attachment SM09. Please provide Appendix B.

Response 2:
See PDF attachment **"SN2-009 Q2 Appendix B - Well Specific Assessments"**.

Question 3:
Referring to GSWC's Gisler, Insco – Vol 1 Capital Testimony: Attachment SM10, Cypress Ridge Well Reactivation Investigation, 2023.
On page 1 of 2, GSWC states, "The purpose of this memo is to outline the findings from the Well Reactivation Investigation project in Cypress Ridge and …"

a) Provide the complete report of the Well Reactivation Investigation project referenced above.
b) Provide the detailed scope of work for the Well Reactivation Investigation project that GSWC submitted to the contractors.
c) Page 2 of 2 (RW Well #5), GSWC states, "The water production rate was sustainable between 30-50 gpm…" Please identify and confirm the estimated Rural Well #5 capacity (in gpm) when the project is completed.

Response 3:

a) Refer to the Prepared Testimony of Gisler, Insco, McWilliams, Flores and Schickling, Volume 5 of 13, Attachment SM10 (PDF pages 224-225).
b) See PDF attachment **"SN2-009 Q3 SOW"**.
c) The estimated production rate is approximately 35 gpm.

Question 4:
On page 2 of 2, GSWC states, "The reactivation of Rural Water Well No. 5 will require infrastructure improvements before the well can be activated. The well currently has no electrical power to the location, has no communications for monitoring and control, and has no pipeline to connect to convey water to the nearest plant site. The wellhead does not have a pump pedestal or fencing to secure the well site. Site modifications will be required to activate Rural Water Well No.5"

a) Provide the cost estimate and its breakdown to reactivate Rural Well No. 5, as identified in the paragraph above for the years 2024 and 2025.
b) Please indicate whether the entire project will be completed in years 2024 and 2025, or whether there will be any other additions and reactivation related work beyond year 2025.
c) Will Rural Well No. 5 provide water in the years 2025 to 2027? Include the estimated production of pumped water from this well (in acre-foot year) for 2025, 2026, and 2027.

Response 4:

a) Refer to the 2023 GRC electronic workpaper Excel file in Rate Base: PCE_RI – Cypress Ridge (Rural Well No. 5, Equip Well). GSWC is proposing Design costs in 2024 and Construction costs in 2025.
b) Based on lead time and availability of required equipment and components, GSWC is anticipating project completion no earlier than 2025.

c) GSWC is anticipating Rural Well No. 5 to provide water in the years 2026 to 2027. The estimated production is approximately 35 acre-foot year.

END OF RESPONSE

Attachment 5-5

GSWC's response to DR SN2-017, including a selected attachment:

1) Question 1.

Golden State
Water Company
A Subsidiary of American States Water Company

January 10, 2024

To: Susan Nasserie, Public Advocates Office
CALIFORNIA PUBLIC UTILITIES COMMISSION
505 Van Ness Avenue
San Francisco, CA 94102

Subject: Data Request SN2-017 (A.23-08-010) SCADA
Due Date: January 5, 2024 Extension Due Date: January 10, 2024

Dear Susan Nasserie,

In response to the above referenced data request number, we are pleased to submit the following responses:

SCADA Recorded Capital Expenditures for Region I, II, and III

Question 1:
For each water system in Region I, II, and III, please provide the recorded SCADA capital expenditures from 2018 to 2022, as shown in Table 1 (in Excel format).

Response 1:
See Excel file titled **"SN2-017 (SCADA) Q.1 - SCADA Expenditures 2018-2022"**, tab "Q1 and Q2 – By RMA".

Question 2:
For each system, provide the last SCADA upgrade year and its associated budget amount, as shown in Table 1 (in Excel format).

Response 2:
See Excel file titled **"SN2-017 (SCADA) Q.1 - SCADA Expenditures 2018-2022"**, spreadsheet "Q1 and Q2 – By RMA". Budget amount provided for completed SCADA system upgrades.

Question 3:
For each system, provide annual spending from 2018 to 2022 including a detailed breakdown (in Excel format) and its associated supporting documentation such as invoices, etc.

Response 3:
See Excel file titled **"SN2-017 (SCADA) Q.1 - SCADA Expenditures 2018-2022"**, spreadsheet "Q3 – Detailed Breakdown". Spreadsheet provides breakdown of expenditures for the SCADA upgrade projects and provides invoice references.

As representation of project spend, GSWC has included supporting documentation for two completed SCADA upgrade projects – West Orange and Cypress Ridge systems - with the largest majority of the spending.

Please refer to the following *Work Order & Description* in the "Q3 – Detailed Breakdown" spreadsheet to find associated invoices.

- W.26931200 - West OC SCADA, Phase III
- W.16400043 - CR, SCADA System

Question 4:
For each RMA, provide the quantifiable cost savings for each year, 2018-2022, as a result of the SCADA investment.

Table 1. SCADA for Region I, II and III								
Recorded Capital Expenditures (2018 to 2022)							Last Upgrade	
RMA	Water System	2018	2019	2020	2021	2022	Year	Budget Amount
xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx

Response 4:
In 2016, GSWC hired Cannon Engineering Consultants (Cannon) to conduct a companywide SCADA Assessment (Assessment). The SCADA Assessment confirmed that SCADA hardware, software, and telemetry was obsolete in many of GSWC's Districts and required maintenance, upgrade, and/or replacement. To address these findings, GSWC developed a SCADA Master Plan guiding the upgrade of SCADA hardware and software throughout the entire company. The Master Plan establishes a strategy for reliability, consistency, and security among the SCADA systems across the company, including remote sites, District office sites, and corporate office sites. In addition, a key objective of the Master Plan is to set the foundation to standardize all future upgrades and additions to the SCADA systems. Overall, the primary benefits of upgrading SCADA companywide include standardization, increased security and improved reliability.

Due to the company-wide SCADA upgrades program being in an execution phase, GSWC cannot quantify potential cost savings at this time.

SCADA Labor

Question 5:
Please refer to Jeung and Kubiak Field Technology Testimony – Vol 1 of 2 – PA.pdf, PDF pages 56-73 and SEC-41_CONFIDENTIAL_Labor and SEC-40_EXP_Labor for the following questions.

a. In Excel format and with clickable formulas, provide the following information for 2022 as it relates to each field position which utilizes SCADA technology.

    i. Position Title;
    ii. Employee Number;
    iii. Region/District;
    iv. Total Labor Regular Hours.

b. In Excel format and with clickable formulas, for each Region/District, provide the total number of field employees and total number of Labor Regular hours.

Response 5:

a. See spreadsheet "Q5(a) – SCADA Labor" in Excel file titled **"SN2-017 (SCADA) Q.5 - SCADA Labor"**. Water Distribution Operators also utilize SCADA technology when they provide back-fill and support for Water Supply Operators. However, Water Distribution Operators were excluded from the dataset provided because SCADA is not one of their primary job duties.
b. See spreadsheet "Q5(b) – SCADA Labor" in Excel file titled **"SN2-017 (SCADA) Q.5 - SCADA Labor"**.

END OF RESPONSE

Table 1. SCADA for Region I, II and III

Recorded Capital Expenditures (2018 to 2022)							Last Upgrade	
Region	**Water System**	**2018**	**2019**	**2020**	**2021**	**2022**	**Year**	**Budget Amount**
Region I	117. Arden	131,354	169,506	80,216			2020	381,076
	118. Cordova				234	65,522		
	124. Bay Point				29,726	132,873		
	146. Los Osos				104,220	745,880		
	159. Orcutt System				28,523	58,840		
	164. Cypress Ridge	116,997	244,104	558,600	318,263	3,472	2022	1,260,146
	167. Simi Valley			46,348	150,112	617,597		
Region III	269. West Orange	611,523	574,520	70,177	42,939	7,806	2022	1,310,093
	274. Cowan Heights	202,259	212,274	78,364	21,511	4,345	2022	524,898
	275. Placentia	214,361	215,685	122,048	46,238	2,865	2022	603,920
	276. Yorba Linda	143,977	145,422	78,623	31,401	1,447	2022	403,380
	347. Barstow		12,163	11,096	786,529	292,677		
	352. Calipatria				68,202	139,948		
	358. Del Norte			79,153	105,072	(62,893)		
	359. Del Sur	156	39,925	118,730	167,129	71,774		
	364. Apple Valley South				24,724	43,417		
	365. Desert View				18,451	77,931		
	366. Apple Valley North		82,767	(15)	14,744	46,906		
	367. Lucerne Valley				23,700	24,852		
	372. Wrightwood				75,041	186,753		
Grand Total		**1,420,626**	**1,696,366**	**1,243,339**	**2,056,759**	**2,462,011**		

Attachment 5-6

Cal Advocates calculation of historical SCADA budget in Santa Maria (2018 to 2022)

Attachment 5-6. Cal Advocates Calculation for SCADA budget in Santa Maria CSA

Based on GSWC data as shown on p. 5-55, Cal Advocated calculate the escalated 5-year average of 2018 to 2022 SCADA recorded budget for $346,561 in 2022 as shown below:

Recorded Capital Expenditures (2018 to 2022)						
Region	**Water System**	**2018**	**2019**	**2020**	**2021**	**2022**
Region I (Santa Maria)	159. Orcutt System				28,523	58,840
	164. Cypress Ridge	116,997	244,104	558,600	318,263	3,472
	Total	116,997	413,610	558,600	346,786	62,312
	Escalated	140,928	488,920	645,464	395,180	62,312
	Five Year Average	346,561				

Attachment 5-7

Cal Advocates Calculation Cypress Ridge System Excess Supply

Attachment 5-7 Cal Advocates Calculations Cypress Ridge system excess supply

A. Calculation for Main Zone excess supply

System Supply and Capacity Analysis for Cypress Ridge Main Zone.[1]

TABLE 5-7 Existing System Supply and Capacity Analysis—Main Zone

		Planning Scenario							
		ADD		MDD		PHD		MDD+FF	
Duration (Hours)		24		24		4		2	
Demand		GPM	MG	GPM	MG	GPM	MG	GPM	MG
Main		188	0.271	315	0.454	472	0.113	1,815	0.218
Indian Hills Zone	BP	31	0.045	52	0.075	78	0.019	52	0.006
Regulator Zone	PRV	35	0.050	59	0.085	89	0.021	59	0.007
Total Demand		**254**	**0.366**	**426**	**0.613**	**639**	**0.153**	**1,926**	**0.231**
Supply	Capacity								
Wells (GPM)	440	254	0.366	170	0.245	170	0.041	440	0.053
Boosters (GPM)	1,517	-	-	256	0.369	469	0.113	1,486	0.178
Reservoirs (MG)	0.632	-	-	-	-	-	-	-	-
Total Supply		**254**	**0.366**	**426**	**0.613**	**639**	**0.153**	**1,926**	**0.231**
Supply Minus Demand		**0**	**0.000**	**0**	**0.000**	**0**	**0.000**	**0**	**0.000**
Supply Meets Demand		**YES**		**YES**		**YES**		**YES**	

- See numbers in yellowed highlights, GSWC includes supply from wells (440 gpm), and boosters (1,517 gpm), a total supply of 440 gpm + 1,517 gpm= 1,957 gpm.
- See numbers in green underlines, GSWC shows the combined supply capacity from wells and boosters that needed to meet each demand scenario: ADD, MDD, PHD and MDD+FF as 254 gpm, 426 gpm, 639 gpm and 1,926 gpm respectively.
- Based on these numbers, Cal Advocates calculates the excess supply capacity. For example, for ADD scenario, excess supply = supply capacity - supply usage to meet ADD = 1,957 – 254 = 1,703 gpm or in percentage =1,703/254=6.70=670%. Using the same methodology, the excess supply capacity for each demand scenario is shown as the following:

	ADD	**MDD**	**PHD**	**MDD+FF**
	(gpm)			
Supply from Wells + Boosters (440 gpm +1,517 gpm)	1,957	1,957	1,957	1,957
Demands (Supply needed for demands)	254	426	639	1,926
Excess supply (gpm)	1,703	1,531	1,318	31
Excess supply (%)	670%	359%	206%	2%

[1] GSWC's Cypress Ridge Water System Master Plan (December 2022), pp. 5-9 to 5-10 Main Zone Capacity Analysis indicates the system meets the demands, also see Table 5-7.

B. Calculation for Cypress Ridge systemwide excess supply

System Supply and Capacity Analysis for Cypress Ridge systemwide.[2]

TABLE 5-11 Existing System Supply and Capacity Analysis—Systemwide

		Planning Scenario							
		ADD		MDD		PHD		MDD+FF	
Duration (Hours)		24		24		4		2	
Demand		GPM	MG	GPM	MG	GPM	MG	GPM	MG
Total Demand		**353**	**0.508**	**591**	**0.851**	**887**	**0.213**	**2,091**	**0.251**
Supply	Capacity								
Wells (GPM)	440	353	0.508	170	0.245	170	0.041	440	0.053
Boosters (GPM)	3,607	-	-	421	0.607	717	0.172	651	0.078
Reservoirs (MG)	1.182	-	-	-	-	-	-	1,000	0.120
Total Supply		**353**	**0.508**	**591**	**0.851**	**887**	**0.213**	**2,091**	**0.251**
Supply Minus Demand		**0**	**0.000**	**0**	**0.000**	**0**	**0.000**	**0**	**0.000**
Supply Meets Demand		**YES**		**YES**		**YES**		**YES**	

- See numbers in yellowed highlights, GSWC includes supply from wells (440 gpm), and boosters (3,607 gpm), a total supply of 440 gpm + 3,607 gpm= 4,047gpm. Note that: Cal Advocates exclude the Reservoir Capacity of 1.182 MG because even without this reservoir capacity The Cypress Ridge system still have excess capacity. As shown on MDD+FF column the system needs a total of 2,091 gpm. The booster capacity of 3,607 gpm alone is sufficient to meet MDD+FF supply requirement.
- See numbers in green underlines, GSWC shows each demand scenario: ADD, MDD, PHD and MDD+FF as 353 gpm, 591 gpm, 887 gpm and 2,091 gpm respectively.
- Based on these numbers, Cal Advocates calculates the excess supply capacity. For example, for demand scenario ADD: Excess supply = supply capacity - supply usage to meet ADD= 4,047 – 353 = 3,694 gpm or
in percentage = 3,694 /353=10.46=1,046%. Using the same methodology, the excess supply capacity for each demand scenario is shown as the following:

[2] GSWC's Cypress Ridge Water System Master Plan (December 2022), pp. 5-9 to 5-10 Systemwide Capacity Analysis indicates the system meets the demands, also see Table 5-11.

	ADD	MDD	PHD	MDD+FF
	(gpm)			
Supply from Wells + Boosters (440 gpm +3,607 gpm)	4,047	4,047	4,047	4,047
Demands (Supply needed for demands)	353	591	887	2,091
Excess supply (gpm)	3,694	3,456	3,160	1,956
Excess supply (%)	1046%	585%	356%	94%

Attachment Chapter 6:
Simi Valley CSA

(No Attachment)