VOLUME III-D

SATIVA WATER SYSTEM PROJECTS
(2024 – 2025)

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PROJECT DESIGN REPORT

FROM: Engineering Department
DATE: October 27, 2022
DISTRICT: WLM
SUBJECT: Sativa Water Systems Infrastructure Improvements

Executive Summary

The Sativa water system was mismanaged for a long time. The mismanagement resulted in the Sativa water system being poorly operated and finding that Sativa violated the California Safe Drinking Water Act. LA County Department of Public Works was assigned as the interim operator of Sativa in 2018 until a permanent water supplier was determined. In 2022 Suburban became the owner of the system. LA County Department of Public Works made numerous improvements; however, additional work is still needed. This report outlines Suburban's capital improvements for the Sativa system to ensure outstanding compliance issues are properly addressed. Sativa's inadequate supply fails to meet fire flow requirements, the Max Day Demand (MDD) and Peak Hour Demand (PHD). Capital improvements include adding wells, a pump station, a storage tank; installing larger diameter pipelines; installing backup power generators and treatment systems. When the proposed improvements are completed, customers will have a reliable and adequate supply of pure, wholesome, healthful potable water.

Background

The Sativa Water Systems serves a 0.27 square mile area in Willowbrook, in unincorporated Los Angeles County, and a portion of the City of Compton. The Sativa District was formed in 1938 and most of its existing assets were installed shortly after in the early 1940s. The distribution piping system includes 48,922 linear feet of water mains ranging from 2 to 8-inches in diameter and is constructed from various materials like asbestos cement, steel and cast iron. The system has 1,643 service lines with no customer meters, 147 mainline

isolation valves, 58 fire hydrants, four land parcels, two wells (Well No.3 and Well No. 5) and pumping equipment with hydropneumatics tanks. The wells pump from the Central Basin water basin aquifer and there are 474 AF of groundwater pumping rights in the Central Basin A treatment facility for Well No.5 is currently in design and anticipated to be completed in 2022. The proposed facility will treat iron and manganese using a multi-cell pressure filter. The facility will also be equipped with a 48,000-gallon product storage tank and booster station, chemical feed system and a 20,000-gallon backwash tank.

The Suburban intends to also make several capital improvements to the Sativa system to ensure outstanding compliance issues are properly addressed. Suburban's capital improvement plan for Sativa is to address the outstanding compliance issues.

The following is a summary of the outstanding compliance issues from the State Water Resource Control Board (SWRCB) compliance order no. 04_22_18R_002, dated June 1, 2018 starting on page 11, line 8 and subsequent Water Supply Permit No. 04-22-20P-009 dated December 23, 2020:

- California Health and Safety Code (CHSC) section 116555 (a) (3), Provide a reliable and adequate supply of pure, wholesome, healthful, and potable water.
- A public water system shall have the capacity to meet the system's maximum day demand (MDD).
- The system shall be able to meet four hours of peak hourly demand (PHD) with source capacity, storage capacity, and/or emergency source connections.
- The pressure in the distribution system shall not be less than 20 psi at all times.
- Flushing velocity on the main shall not be less than 2.5 ft/s.
- The distribution system shall be free from significant amounts of particulate matter.

Suburban's capital improvement plan includes prudent infrastructure investments to provide Sativa's customers a reliable and adequate supply of pure, wholesome, healthful and potable water in accordance with CHSC section 11655. The strategy is based on the information currently available to Suburban and will be adjusted plan will be adjusted if unanticipated conditions are encountered.

Max Day Demand (MDD) & Peak Hour Demand (PHD):

Suburban's approach to addressing Sativa's inadequate supply capacity is to add a well and reservoir storage to increase average and instantaneous water supply, and install larger diameter pipelines to reduce head loss and increase flow rate capacity. that fails

These improvements will allow the Sativa system to operate independently from the temporary emergency connections with Liberty and City of Compton that are primarily beyond Suburban's control and meet the Max Day Demand (MDD) and Peak Hour Demand (PHD).

Well Supply – Well 5 Treatment Plant

Background on Acquisition of the Sativa Water System

The most important part of a water system is its supply. If the water supply is of poor quality, unreliable, or insufficient to meet demand, customers will not receive clean, safe, reliable, and abundant drinking water. In addition to meeting customer demands, adequate supply is critical for fire protection.

Well No. 5 was the Sativa County Water District water system’s primary source of supply. For more than a decade the well produced water from the Central Basin groundwater basin with elevated levels of manganese exceeding the secondary MCL of 50 ppb as shown on the table on page 9 of SWRCB Compliance Order dated June 1, 2018 . Water produced from Well No. 5 was also discolored, and the brown discoloration was objectionable to customers.

After extensive pressure from customers complaining to the news media, as well as County and State elected officials about the Sativa Los Angeles County Water District’s lack of attention to this issue, action by the state legislature and Los Angeles County Formation Comission (LAFCO) dissolved the district, and transfered it to Los Angeles County Public Works (LACPW) to serve as an administrator to operate, restore service quality, and find a permanent owner.

LACPW held a competitive Request for Proposal (RFP) process to select a water entity to acquire the Sativa Water System. Throughout the RFP process LACPW projected the treatment plant project would be complete before ownership of the system was transferred.

Suburban Water Systems was selected and entered into an Asset Purchase Agreement (APA) with LACPW. The APA contemplated that some capital improvements might be incomplete at the time of closing, especially the administrivia associated with grant funding. This is reflected in the APA in the terms addressing "Post-Closing County Capex Projects." Suburban is required by the CPUC-approved APA to pay LACPW for the cost of Post-Closing County Capex Projects to the extent the costs exceed any grant funds received by LACPW for the project.

Well No. 5 Treatment Plant Cost and Construction Schedule

The State Water Resource Control Board Compliance (SWRCB) Department of Drinking Water (DDW) Order No. 04_22_18R_022 required LACPW to take the Sativa Well No. 5 out of service and DDW's December 2020 Engineering Report identified wellhead treatment at Well 5 as an urgent improvement project. DDW's September 30, 2022 Sativa Sanitary Survey recommends the installation of a treatment facility at Sativa Well No.5.

LACPW secured $2.25M of state grant funding for the design and construction of the treatment facility. Tetra Tech's Technical Evaluation Study dated June 1, 2018 estimated the project cost to be $2.25M. Tetra Tech revised the Engineer's Opinion of Probable Construction Cost (EOPCC) in February 2022 to $3.43M. The estimate increased to reflect the impact of global supply chain restrictions, national inflation, and lack of local contractor availability.

The Water Replenishment District of Southern California (WRD) was selected by LACPW to manage the design and construction of the improvements. The engineering design will be completed at the end of 2022 and the project is scheduled to go to bid in January 2023. The proposed facility will treat Iron and Manganese using a multi-cell pressure filter. The facility will also be equipped with a 48,000-gallon product storage tank and booster station, a sodium hypochlorite chemical feed system, and a 20,000-gallon backwash tank.

WRD and LACPW expect to complete construction of the treatment facility in 2024. Suburban expects DDW to issue the operating permit for the treatment facility some time after construction is complete, which could be weeks or months. This is much later than LACPW or Suburban expected at the time the application to acquire the Sativa system was filed with the CPUC in 2021. As the recipient of the grant funding, LACPW needs to retain ownership of the well and treatment equipment until the project is complete and the funds received; however, LACPW and Suburban both desired to close the acquisition before 2024 to provide the Sativa customers with the benefits of new ownership, and to simplify system management. To accommodate the conflict between the benefits of closing and receiving grant funding for the treatment plant, Suburban and LACPW agreed to separate the transfer of the well from the rest of the Sativa assets, with Well No. 5 being transferred to a later phase of the APA closing. The treatment plant will therefore be handled under the APA as a Post-Closing County Capex Project, and Suburban is required by the APA to pay LACPW for the costs of the treatment plant that exceed grant funding. estimated to be $2,152,205 in 2024. Suburban requests the inclusion of $2,152,205 in its 2024 Capital budget as the total estimated costs of the Sativa Well No. 5 Treatment Plant after grant funds are applied, and the well and treatment plant is transferred to Suburban.

The summary below shows Suburban's cost to complete the construction of the Treatment Plant.
Suburban's costs were determined by Subtracting the construction grant amount from the updated Engineer's Opinion of Probable Construction Cost. The balance from the construction grant was marked up to includes Construction Management services plus a 10% contingency and Suburban's General Administration.

Description		Amount
2/17/2022 EOPCC		$3,430,000
Grant Amount		$2,250,000
Grant Amount for Construction		($1,860,000)
Balance		$1,570,000
Construction Management		$225,000
Subtotal		$1,795,000
Contingency	10%	$179,500
Subtotal		$1,974,500
General Administration	9%	$177,705
Suburban's Cost		**$2,152,205**

Pipe Replacement

Sativa's distribution system includes pipes of different sizes and materials installed in streets, alleys, and backyards. Sativa's piping system has poor capacity for transmitting the relatively higher flow rates required to meet fire flow requirements due to poor looping and inadequately sized pipes.

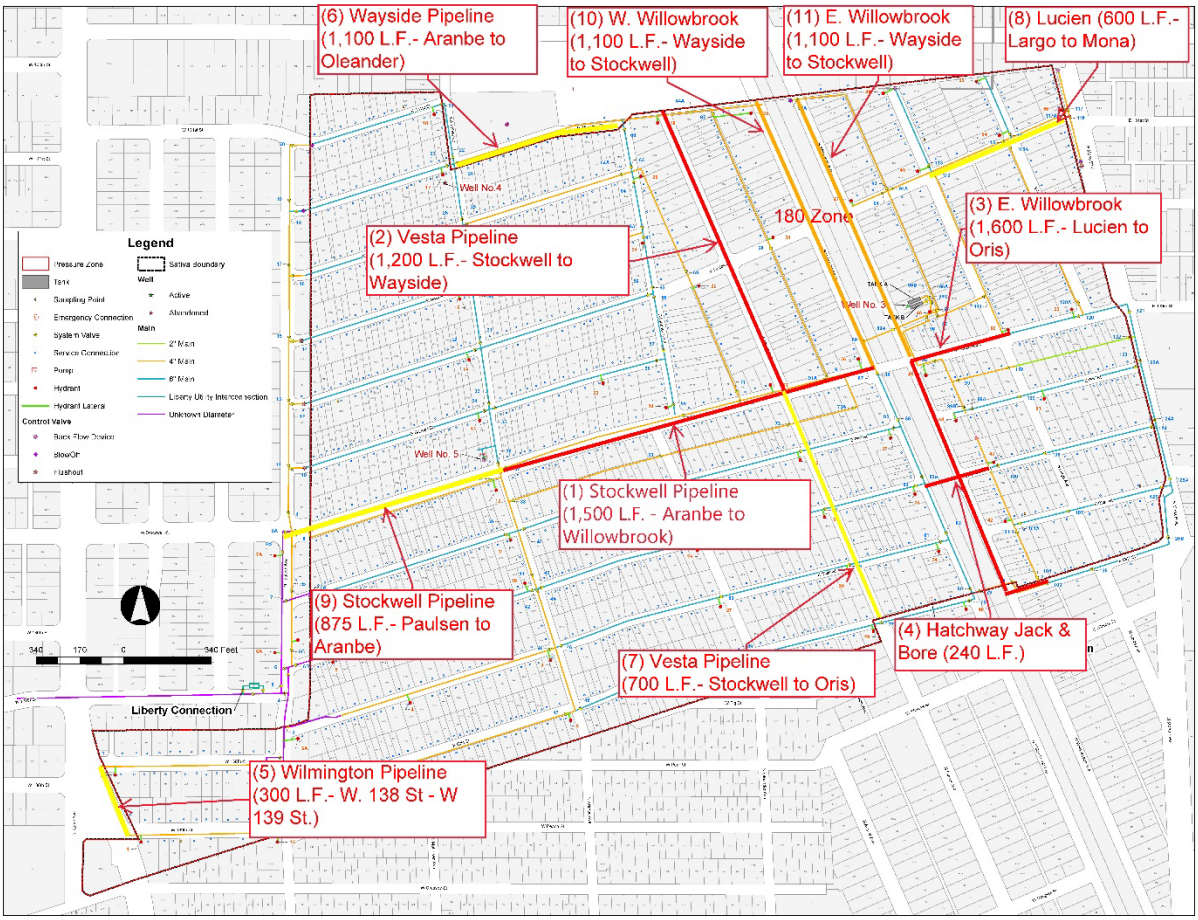
In July 2020 Los Angeles County Department of Public Works installed an 8-inch pipeline on Lucien Street from South Oleander Ave. to South Largo Ave. This pipe improves flow capacity and addresses fire flow deficiencies in the section of the system located east of the Blue Line railway. The Lucien pipe was an improvement; however, additional pipelines are required to meet MDD, PHD and fire flow. Three fire flows performed by Suburban during the Operations and Maintenance agreement does not meet the minimum fire flow requirements by LA County Fire Department of 1,250 gpm. Below is a summary of the fire flows that do not meet fire flow requirements.

Address	FH No	GPM@20psi
2311 E. Oris Ave.	42A	1,002
13107 Penrose Ave.	54	846
2422 E. Piru st.	51	980

The planned piping projects will improve fire flow transmission, maintain a minimum of 20 psi during fire flow events, and achieve flushing velocities of no less than 2.5 ft/s. Several dead-end mains that contribute to poor fire flow and water quality will be eliminated along Willowbrook where there is limited transmission on the eastern side of the system.

The pipelines will also improve transmission capacity from the City of Compton and Liberty Utilities emergency tie-ins to the center and then extremities of the distribution system. Further, Suburban has identified pipe alignments to eliminate existing pipes in alleys and backyards to provide maintenance access, avoid customer disruptions, and facilitate meter installation and maintenance.

The exhibit below shows the proposed pipelines required to meet the compliance. Different colors were used to differentiate the limits of projects.



Below are the cost estimates for the proposed pipelines.

1. Stockwell Pipeline

Description	Quantity	Unit	Unit Cost	Cost
Construct 8-inch PVC	1500	L.F.	$130	$195,000
8-inch Gate Valves	10	Each	$1,960	$19,600
8-inch Tie-In	2	Each	$6,840	$13,680
6-inch Fire Hydrant	3	Each	$10,870	$32,610
1-inch service	57	Each	$2,110	$120,270
AC Removal and Replacement	1500	L.F.	$50	$75,000
Construct Pipeline Offset	6	Each	$3,500	$21,000
Cut, Plug and Abandon of Existing Pipeline	1	LS	$9,034	$9,034
Traffic Rated (H-20) Meter Lids	57	Each	$250	$14,250
Install Test Head Furnishing for Pressure Testing	2	Each	$3,610	$7,220
Landscaping Removal & Replacement	1	LS	$12,644	$12,644
Guard underground services	1	LS	$16,540	$16,540
Line Item Subtotal				$536,848
Mobilization			3%	$16,105
De-mobilization			2%	$10,737
Construction Subtotal				**$563,690**
Engineering and Inspection			12%	$67,643
Subtotal				$631,333
Contingency			10%	$63,133
Subtotal				$694,467
General Administration			9.0%	$62,502
Total				**$757,000**

2. Vesta Pipeline

Description	Quantity	Unit	Unit Cost	Cost
Construct 8-inch PVC	1200	L.F.	$130	$156,000
8-inch Gate Valves	7	Each	$1,960	$13,720
8-inch Tie-In	2	Each	$6,840	$13,680
6-inch Fire Hydrant	3	Each	$10,870	$32,610
1-inch service	76	Each	$2,110	$160,360
AC Removal and Replacement	1200	L.F.	$50	$60,000
Construct Pipeline Offset	5	Each	$3,500	$17,500
Cut, Plug and Abandon of Existing Pipeline	1	LS	$9,034	$9,034
Traffic Rated (H-20) Meter Lids	76	Each	$250	$19,000
Install Test Head Furnishing for Pressure Testing	1	Each	$3,610	$3,610
Landscaping Removal & Replacement	1	LS	$12,644	$12,644
Guard underground services	1	LS	$16,540	$16,540
Line Item Subtotal				$514,698
Mobilization			3%	$15,441
De-mobilization			2%	$10,294
Construction Subtotal				**$540,433**
Engineering and Inspection			12%	$64,851.95
Subtotal				$605,285
Contingency			10%	$60,528.48
Subtotal				$694,467
General Administration			9.0%	$62,502
Total				$756,969

3. E. Willowbrook Pipeline

Description	Quantity	Unit	Unit Cost	Cost
Construct 8-inch PVC	1600	L.F.	$130	$208,000
8-inch Gate Valves	7	Each	$1,960	$13,720
8-inch Tie-In	2	Each	$6,840	$13,680
6-inch Fire Hydrant	8	Each	$10,870	$86,960
1-inch service	31	Each	$2,110	$65,410
AC Removal and Replacement	1600	L.F.	$50	$80,000
Construct Pipeline Offset	7	Each	$3,500	$24,500
Cut, Plug and Abandon of Existing Pipeline	1	LS	$9,034	$9,034
Traffic Rated (H-20) Meter Lids	31	Each	$250	$7,750
Install Test Head Furnishing for Pressure Testing	2	Each	$3,610	$7,220
Landscaping Removal & Replacement	1	LS	$12,644	$12,644
Guard underground services	1	LS	$16,540	$16,540
Line Item Subtotal				$545,458
Mobilization			3%	$16,364
De-mobilization			2%	$10,909
Construction Subtotal				**$572,731**
Engineering and Inspection			12%	$68,728
Subtotal				$641,459
Contingency			10%	$64,146
Subtotal				$705,604
General Administration			9.0%	$63,504
Total				**$769,000**

4. Jack & Bore Pipeline

Description	Quantity	Unit	Unit Cost	Cost
12-inch fusible PVC	240	L.F.	$200	$48,000
Jack & Bore Casing	220	L.F.	$1,500	$330,000
Guard underground services	1	LS	$16,540	$16,540
Line Item Subtotal				$394,540
Mobilization			3%	$11,836
De-mobilization			2%	$7,891
Construction Subtotal				**$414,267**
Engineering and Inspection			12%	$49,712
Subtotal				$463,979
General Administration			10.0%	$46,398
Subtotal				$510,377
Contingency			9.0%	$45,934
Total				**$556,000**

5. Wilmington Pipeline

Description	**Quantity**	**Unit**	**Unit Cost**	**Cost**
Construct 8-inch PVC	300	L.F.	$130	$39,000
8-inch Gate Valves	1	Each	$1,960	$1,960
8-inch Tie-In	2	Each	$6,840	$13,680
6-inch Fire Hydrant	2	Each	$10,870	$21,740
1-inch service	0	Each	$2,110	$0
AC Removal and Replacement	300	L.F.	$50	$15,000
Construct Pipeline Offset	2	Each	$3,500	$7,000
Cut, Plug and Abandon of Existing Pipeline	1	LS	$9,034	$9,034
Traffic Rated (H-20) Meter Lids	0	Each	$250	$0
Install Test Head Furnishing for Pressure Testing	0	Each	$3,610	$0
Landscaping Removal & Replacement	1	LS	$12,644	$12,644
Guard underground services	1	LS	$16,540	$16,540
Line Item Subtotal				$136,598
Mobilization			3%	$4,098
De-mobilization			2%	$2,732
Construction Subtotal				**$143,428**
Engineering and Inspection			12%	$17,211
Subtotal				$160,639
Contingency			10%	$16,064
Subtotal				$176,703
General Administration			9.0%	$15,903
Total				**$193,000**

6. Wayside Pipeline

Description	Quantity	Unit	Unit Cost	Cost
Construct 8-inch PVC	700	L.F.	$130	$91,000
8-inch Gate Valves	6	Each	$1,960	$11,760
8-inch Tie-In	2	Each	$6,840	$13,680
6-inch Fire Hydrant	1	Each	$10,870	$10,870
1-inch service	16	Each	$2,110	$33,760
AC Removal and Replacement	700	L.F.	$50	$35,000
Construct Pipeline Offset	3	Each	$3,500	$10,500
Cut, Plug and Abandon of Existing Pipeline	1	LS	$9,034	$9,034
Traffic Rated (H-20) Meter Lids	16	Each	$250	$4,000
Install Test Head Furnishing for Pressure Testing	1	Each	$3,610	$3,610
Landscaping Removal & Replacement	1	LS	$12,644	$12,644
Guard underground services	1	LS	$16,540	$16,540
Line Item Subtotal				$252,398
Mobilization			3%	$7,572
De-mobilization			2%	$5,048
Construction Subtotal				**$265,018**
Engineering and Inspection			12%	$31,802
Subtotal				$296,820
Contingency			10.0%	$29,682
Subtotal				$326,502
General Administration			9%	$29,385
Total				**$356,000**

7. Vesta Pipeline

Description	Quantity	Unit	Unit Cost	Cost
Construct 8-inch PVC	1000	L.F.	$130	$130,000
8-inch Gate Valves	12	Each	$1,960	$23,520
8-inch Tie-In	2	Each	$6,840	$13,680
6-inch Fire Hydrant	4	Each	$10,870	$43,480
1-inch service	0	Each	$2,110	$0
AC Removal and Replacement	1000	L.F.	$50	$50,000
Construct Pipeline Offset	4	Each	$3,500	$14,000
Cut, Plug and Abandon of Existing Pipeline	1	LS	$9,034	$9,034
Traffic Rated (H-20) Meter Lids	0	Each	$250	$0
Install Test Head Furnishing for Pressure Testing	1	Each	$3,610	$3,610
Landscaping Removal & Replacement	1	LS	$12,644	$12,644
Guard underground services	1	LS	$16,540	$16,540
Line Item Subtotal				$316,508
Mobilization			3%	$9,495
De-mobilization			2%	$6,330
Construction Subtotal				**$332,333**
Engineering and Inspection			12%	$39,880
Subtotal				$372,213
Contingency			10%	$37,221
Subtotal				$409,435
General Administration			9.0%	$36,849
Total				**$446,000**

8. Lucien Pipeline

Description	Quantity	Unit	Unit Cost	Cost
Construct 8-inch PVC	600	L.F.	$130	$78,000
8-inch Gate Valves	6	Each	$1,960	$11,760
8-inch Tie-In	2	Each	$6,840	$13,680
6-inch Fire Hydrant	2	Each	$10,870	$21,740
1-inch service	0	Each	$2,110	$0
AC Removal and Replacement	600	L.F.	$50	$30,000
Construct Pipeline Offset	3	Each	$3,500	$10,500
Cut, Plug and Abandon of Existing Pipeline	1	LS	$9,034	$9,034
Traffic Rated (H-20) Meter Lids	0	Each	$250	$0
Install Test Head Furnishing for Pressure Testing	1	Each	$3,610	$3,610
Landscaping Removal & Replacement	1	LS	$12,644	$12,644
Guard underground services	1	LS	$16,540	$16,540
Line Item Subtotal				$207,508
Mobilization			3%	$6,225
De-mobilization			2%	$4,150
Construction Subtotal				**$217,883**
Engineering and Inspection			12%	$26,146
Subtotal				$244,029
Contingency			10%	$24,403
Subtotal				$268,432
General Administration			9.0%	$24,159
Total				**$293,000**

9. Stockwell Pipeline

Description	Quantity	Unit	Unit Cost	Cost
Construct 8-inch PVC	875	L.F.	$130	$113,750
8-inch Gate Valves	6	Each	$1,960	$11,760
8-inch Tie-In	2	Each	$6,840	$13,680
6-inch Fire Hydrant	2	Each	$10,870	$21,740
1-inch service	40	Each	$2,110	$84,400
AC Removal and Replacement	875	L.F.	$50	$43,750
Construct Pipeline Offset	4	Each	$3,500	$14,000
Cut, Plug and Abandon of Existing Pipeline	1	LS	$9,034	$9,034
Traffic Rated (H-20) Meter Lids	40	Each	$250	$10,000
Install Test Head Furnishing for Pressure Testing	1	Each	$3,610	$3,610
Landscaping Removal & Replacement	1	LS	$12,644	$12,644
Guard underground services	1	LS	$16,540	$16,540
Line Item Subtotal				$354,908
Mobilization			3%	$10,647
De-mobilization			2%	$7,098
Construction Subtotal				**$372,653**
Engineering and Inspection			12%	$44,718
Subtotal				$417,372
Contingency			10%	$41,737
Subtotal				$459,109
General Administration			9.0%	$41,320
Total				**$500,000**

10. W. Willowbrook Pipeline

Description	Quantity	Unit	Unit Cost	Cost
Construct 8-inch PVC	1125	L.F.	$130	$146,250
8-inch Gate Valves	6	Each	$1,960	$11,760
8-inch Tie-In	2	Each	$6,840	$13,680
6-inch Fire Hydrant	2	Each	$10,870	$21,740
1-inch service	27	Each	$2,110	$56,970
AC Removal and Replacement	1125	L.F.	$50	$56,250
Construct Pipeline Offset	5	Each	$3,500	$17,500
Cut, Plug and Abandon of Existing Pipeline	1	LS	$9,034	$9,034
Traffic Rated (H-20) Meter Lids	27	Each	$250	$6,750
Install Test Head Furnishing for Pressure Testing	1	Each	$3,610	$3,610
Landscaping Removal & Replacement	1	LS	$12,644	$12,644
Guard underground services	1	LS	$16,540	$16,540
Line Item Subtotal				$372,728
Mobilization			3%	$11,182
De-mobilization			2%	$7,455
Construction Subtotal				**$391,364**
Engineering and Inspection			12%	$46,964
Subtotal				$438,328
Contingency			10%	$43,833
Subtotal				$482,161
General Administration			9.0%	$43,394
Total				**$526,000**

11. E. Willowbrook Pipeline

Description	Quantity	Unit	Unit Cost	Cost
Construct 8-inch PVC	1100	L.F.	$130	$143,000
8-inch Gate Valves	1	Each	$1,960	$1,960
8-inch Tie-In	2	Each	$6,840	$13,680
6-inch Fire Hydrant	1	Each	$10,870	$10,870
1-inch service	47	Each	$2,110	$99,170
AC Removal and Replacement	1100	L.F.	$50	$55,000
Construct Pipeline Offset	5	Each	$3,500	$17,500
Cut, Plug and Abandon of Existing Pipeline	1	LS	$9,034	$9,034
Traffic Rated (H-20) Meter Lids	47	Each	$250	$11,750
Install Test Head Furnishing for Pressure Testing	1	Each	$3,610	$3,610
Landscaping Removal & Replacement	1	LS	$12,644	$12,644
Guard underground services	1	LS	$16,540	$16,540
Line Item Subtotal				$394,758
Mobilization			3%	$11,843
De-mobilization			2%	$7,895
Construction Subtotal				**$414,496**
Engineering and Inspection			12%	$49,740
Subtotal				$464,235
Contingency			10%	$46,424
Subtotal				$510,659
General Administration			9.0%	$45,959
Total				**$557,000**

Storage

Reservoir storage in a water system primarily provides a limited source of emergency supply should the primary supplies become unavailable or depleted. Storage also supports large instantaneous fire flow demands resulting from fire events, and storage balances the difference between the constant supply and fluctuating customer demand that is evident in the difference between MDD and PHD. The existing hydro-pneumatic tanks provide minimal storage and were only used for short term pressure stabilization. The Sativa water system does not have adequate storage to meet spikes in demand presenting a major risk to maintaining pressure to the system's customers.

To address these storage issues, Suburban plans to install a 300,000 gallon, welded steel reservoir at the Well 4 site. Given the limited available space, this tank will provide critically needed emergency and fire protection supply. This will also simplify pressure management by matching supply to demand. This storage will be complemented by the 48,000-gallon tank to be constructed with the treatment plant at Well 5, and by its backup generators that will allow the wells to continue to access the vast underground central basin reservoir in the event of a power outage. Below is the cost estimate.

Description	**Quantity**	**Unit**	**Unit Cost**	**Cost**
Mobilization	1	Lump Sum	$21,000	$21,000
Demobilization	1	Lump Sum	$14,000	$14,000
300,000 gallon welded tank	1	Lump Sum	$550,000	$550,000
Ring wall footing	1	Lump Sum	$90,000	$90,000
Piping and Fittings	1	Lump Sum	$50,000	$50,000
Tank Disinfection	1	Lump Sum	$10,000	$10,000
Subtotal				$725,000
Engineering Services and Inspection			12%	$87,000
Subtotal				$812,000
Contingency			10.0%	$81,200
Subtotal				$893,200
General Administration			9.0%	$80,388
Total				$974,000

Pump Station & Backup power

Sativa's wells pump water from the Central Basin groundwater basin that holds millions of acre-feet of water. In the event of a major water supply shortage event, access to this enormous natural reservoir is critical. Sativa's well pumps are driven by electric motors dependent on electricity from the power utility. Without an elevated tank, the Sativa system depends on 24-hour pumping powered by electricity to maintain pressure in the system; a power outage is the greatest threat to maintaining pressure and supply to Sativa's customers.

As previously mentioned, Suburban plans to build a storage tank and will need a pump station to provide adequate pressure when using water from the tank. Suburban will also install an AQMD-permitted fixed generator to run the well and pump station at Well 5. The cost for installation of a fixed generator and pump station at site no. 4 are shown below.

Description	Quantity	Unit	Unit Cost	Cost
50 hp Motor	2	Each	$15,000	$30,000
50 Pump	2	Each	$50,000	$100,000
Variable Frequency Drives	2	Each	$40,000	$80,000
Pull Section and Main Switchboard	1	Lump Sum	$95,000	$95,000
ATS	1	Lump Sum	$60,700	$60,700
Diesel Generator	1	LUMP SUM	$240,000	$240,000
Generator Concrete Pad	1	LUMP SUM	$15,000	$15,000
Site electrical conduits and conductors	1	LUMP SUM	$87,000	$87,000
Flow meter	2	Each	$15,000	$30,000
SCADA	1	Lump Sum	$100,000	$100,000
Construct 10-inch Std. steel suction pipe, (CL & P)	1	Lump Sum	$20,000	$20,000
Install 8-inch gate valves	5	Each	$2,000	$10,000
Construct 8-inch Std. steel discharge pipe (CL & P)	1	Each	$15,230	$15,000
Install 8-inch swing check valve	1	Each	$15,000	$15,000
6" Pressure Relief Valve	1	Each	$12,400	$12,400
Concrete Vault	1	Each	$23,000	$23,000
8-inch PVC - Yard Piping	100	L.F.	$250	$25,000
AC Paving Removal and Replacement	100	L.F.	$100	$10,000
Subtotal				$968,100
Mobilization	1	Lump Sum	$29,043	$29,043

Demobilization	1	Lump Sum	$19,362	$19,362
Subtotal				$1,016,505
Engineering Services and Inspection			12%	$121,980.60
Subtotal				$1,090,080.60
Contingency			10.0%	$109,008.06
Subtotal				$1,199,088.66
General Administration			9.0%	$107,917.98
Total				$1,307,000.00

Should additional backup generators be required at the other wells, Suburban would deploy existing generators that are stored at its existing water systems. A manual transfer switch is required at Well 3 to accept a generator. Below is the cost estimate for the Manual Transfer Switch.

Description	**Quantity**	**Unit**	**Unit Cost**	**Cost**
Install MCC & MTS	1	LUMP SUM	$141,360	$141,360
Site electrical conduits and conductors	1	LUMP SUM	$87,000	$87,000
Subtotal				$228,360
Engineering Services and Inspection			12%	$27,403.20
Subtotal				$255,763.20
General Administration			10%	$25,576.32
Subtotal				$281,339.52
Contigency			9.0%	$25,320.56
Total				$307,000.00

Suburban would also work with the City of Compton and Liberty Utilities Park Water to establish interconnection agreements to provide water supply if all other measures fail.

Below is a summary of the proposed facilities.

Description	2024	2025	Total
Manganese Treatment Plant Construction	$2,152,205		
Steel Tank (300,000 gallons) (site no. 4)	$974,000		
(1) Stockwell Pipeline (Backyard + Fire Flow) (Aranbe to Willowbrook)	$757,000		
(2) Vesta Pipeline (Backyard + Fire Flow)	$756,969		
(3) E. Willowbrook Pipeline (Backyard + Fire Flow)	$769,000		
(5) Wilmington Pipeline (Fire Flow)	$193,000		
(10) W. Willowbrook Pipeline (Alley)	$526,000		
(11) E. Willowbrook Pipeline (Alley)	$557,000		
Pump Station Construction & Generator (Site no.4)		$1,307,000	
Well 3 Manual Transfer Switch		$307,000	
(4) Jack & Bore (Fire Flow)		$556,000	
(6) Wayside Pipeline (Fire Flow)		$356,000	
(7) Vesta Pipeline (Fire Flow)		$446,000	
(8) Lucien Pipeline (Fire Flow)		$293,000	
(9) Stockwell Pipeline Fire Flow		$500,000	
Total	**$6,685,174**	**$3,765,000**	**$8,297,969**

Appendix 1 – SWRCB Compliance Order

Appendix 2 – Engineering Report (SWRCB)

Appendix 3 – Sanitary Survey (2022)

Appendix 4 – Manganese Treatment Plant Cost Email with County of Los Angeles Public Works

~~Appendix C~~

State Water Resources Control Board – Division of Drinking Water Compliance Order No. 04_22_18R_002

CALIFORNIA
Water Boards

State Water Resources Control Board
Division of Drinking Water

June 1, 2018

System No. 1910147

Mr. Luis Landeros, Board President
Sativa Los Angeles County Water District
2015 East Hatchway Street
Compton, CA 90222

COMPLIANCE ORDER NO. 04_22_18R_002
DISTRIBUTION SYSTEM PHYSICAL WATER QUALITY AND CALIFORNIA WATERWORKS STANDARDS VIOLATIONS

Enclosed is Compliance Order No. 04_22_18R_002 (hereinafter "Order") issued to the Sativa Los Angeles County Water District (hereinafter "Sativa") public water system. **Please note there are legally enforceable deadlines associated with this Order.**

Sativa will be billed at the State Water Resources Control Board's (hereinafter "State Water Board") hourly rate for the time spent on issuing this Order. California Health and Safety Code (hereinafter "CHSC"), Section 116577, provides that a public water system must reimburse the State Water Board for actual costs incurred by the State Water Board for specified enforcement actions, including but not limited to, preparing, issuing and monitoring compliance with an order. At this time, the State Water Board has spent approximately 27.8 hours on enforcement activities associated with this violation.

Sativa will receive a bill sent from the State Water Board in August of the next fiscal year. This bill will contain fees for any enforcement time spent on Sativa for the current fiscal year.

Any person who is aggrieved by a citation, order or decision issued under authority delegated to an officer or employee of the state board under Article 8 (commencing with CHSC, Section 116625) or Article 9 (commencing with CHSC, Section 116650), of the Safe Drinking Water Act (CHSC, Division 104, Part 12, Chapter 4), may file a petition with the State Water Board for reconsideration of the citation, order or decision. Appendix 1 to the enclosed Compliance Order contains the relevant statutory provisions for filing a petition for reconsideration (CHSC, Section 116701).

Petitions must be received by the State Water Board within 30 days of the issuance of the citation, order or decision by the officer or employee of the state board. The date of issuance is the date when the Division of Drinking Water mails a copy of the citation, order or decision. If the 30th day falls on a Saturday, Sunday, or state holiday, the petition is due the following business day by 5:00 p.m.

Information regarding filing petitions may be found at:

http://www.waterboards.ca.gov/drinking_water/programs/petitions/index.shtml

If you have any questions regarding this matter, please contact Shu-Fang Orr, P.E., Angeles District Engineer, at (818) 551-2045 or me at (818) 551-2068.

Sincerely,

Jeff O'Keefe, P.E. Chief
Southern California Section
Division of Drinking Water

Enclosure

Certified Mail No. 7014 2870 0001 2130 1335

cc: Maria Rachelle Garza, General Manager
Sativa Los Angeles County Water District
2015 East Hatchway Street
Compton, CA 90222

Jacqueline E. Taylor, Director
Environmental Protection Branch
Los Angeles County Department of Public Health
Environmental Health

Compliance Order No. 04_22_18R_002

STATE OF CALIFORNIA

STATE WATER RESOURCES CONTROL BOARD

DIVISION OF DRINKING WATER

Name of Public Water System: Sativa Los Angeles County Water District

Water System No: 1910147

Attention: Mr. Luis Landeros, Board President
2015 East Hatchway Street
Compton, CA 90222

Issued: June 1, 2018

COMPLIANCE ORDER FOR NONCOMPLIANCE

CALIFORNIA HEALTH AND SAFETY CODE, SECTION 116555(a)(3), AND

CALIFORNIA CODE OF REGULATIONS, TITLE 22,

SECTIONS 64449.5(d), 64554(a), 64575(c) and 64602(a)

April 2018

The California Health and Safety Code (hereinafter "CHSC"), Section 116655 authorizes the State Water Resources Control Board (hereinafter "State Water Board") to issue a compliance order to a public water system when the State Water Board determines that the public water system has violated or is violating the California Safe Drinking Water Act (hereinafter "California SDWA"), (CHSC, Division 104, Part 12, Chapter 4,

commencing with Section 116270), or any regulation, standard, permit, or order issued or adopted thereunder.

The State Water Board, acting by and through its Division of Drinking Water (hereinafter "Division") and the Deputy Director for the Division, hereby issues Compliance Order No. 04_22_18R_002 (hereinafter "Order") pursuant to Section 116655 of the CHSC to the Sativa Los Angeles County Water District (hereinafter "Sativa") for violation of CHSC, Section 116555(a)(3) and California Code of Regulations (hereinafter "CCR"), Title 22, Section 64449.5(d). *Distribution System Physical Water Quality*, Section 64554(a). *New and Existing Source Capacity*, Section 64575(c). *Flushing*, and Section 64602 (a). *Minimum Pressure.*

A copy of the applicable statutes and regulations are included in Appendix 1, which is attached hereto and incorporated by reference.

STATEMENT OF FACTS

Sativa is classified as a community public water system with a population of 6,837 persons served through 1,643 service connections. Sativa operates the water system under the revised Domestic Water Supply Permit No. 04-22-12P-009 issued by the State Water Board on August 30, 2012. Sativa utilizes two groundwater wells, Wells 3 and 5 as its source of domestic water. The current maximum pumping rates of Well 3 and Well 5 are around 363 gpm and 600 gpm, respectively. Each well is equipped with a gas chlorination system. Well 3 is equipped with two hydropneumatic tanks that typically operate alternately. However, only one hydropneumatic tank is in operation. The other hydropneumatic tank is due for rehabilitation and cleaning. Well 5 is equipped with one hydropneumatic tank. Sativa has one emergency connection with the City of Compton. The distribution system has only one pressure-zone, with no booster station and no

storage tank. The distribution system consists of approximately 8.7 miles of pipelines composed of 6-inch and 4-inch pipes. The service connections are not metered.

CHSC, Section 116555(a)(3) requires all public water systems to provide a reliable and adequate supply of pure, wholesome, healthful, and potable water. The California Waterworks Standards require a public water system to have source capacity to meet the system's maximum day demand (MDD) as determined pursuant to Section 64554 (a) at all times. Sativa's two active wells, Wells 3 and 5, have an instantaneous combined yield of approximately 963 gallons per minute (gpm). The highest daily production/usage recorded during the period from 2007 to 2016 was 1.5 million gallons per day (MGD) or 1,041.66 gpm in 2010. Sativa did not report the MDDs for 2007, 2008, and 2009. The calculated MDD for 2008 utilizing the highest month usage and the minimum peaking factor of 1.5 prescribed by CCR, Section 64554 (b), is 2.25 MGD, or 1,562.5 gpm, which is even higher than the highest recorded MDD of 1.5 MGD. The 2008 data appears to be an outliner. Therefore, the highest recorded MDD of 1.5 MGD was utilized for compliance determination. The combined capacity of Wells 3 and 5 does not meet the MDD.

The Division advised Sativa the violation of the source capacity requirement in a letter dated May 30. 2017. In a letter dated October 6, 2017, Sativa indicated the intention to obtain a bond fund to drill a new well. Subsequently, Sativa obtained $1.4 million revenue bond. However, during a meeting on December 15, 2017, Sativa informed the Division that they had changed their plan based on the recommendations of their new consulting firm, SAFNA Engineering and Consulting (SAFNA). They would now pursue an interconnection with Liberty Utilities instead of a new well.

In January 2018, Sativa contracted SAFNA to manage the operation of the water system facilities, with Jose Molina as the Chief Operator. SAFNA also assisted Sativa in the

effort to modify the scope of a planning grant for the manganese removal treatment at Well 5. The planning grant was issued to Sativa by the State Water Board's Division of Financial Assistance (DFA). In a memorandum to the DFA staff dated February 21, 2018, SAFNA proposed to install an interconnection with Liberty Utilities as a standby source. SAFNA was advised during a meeting with DDW and DFA representatives on April 19, 2018 that for DDW to count the interconnection as the source of supply for compliance determination, the interconnection must be an active source. Sativa must demonstrate the interconnection is a reliable source of supply by securing an agreement with Liberty Utilities to ensure the interconnection can be utilized anytime by Sativa.

Historical Water Production/Usage

Year	Produced from Groundwater (MG)	Maximum Month (MG)	MDD (MG)
2007	154.44	March (25.01)	NR/ 1.21*
2008	223.00	June (45.00)	NR/2.25*
2009	211.68	July (20.74)	NR/1.00*
2010	214.08	July (20.83)	1.50
2011	208.00	July (20.06)	1.30
2012	207.22	October (19.41)	0.53
2013	189.52	July (17.98)	0.94
2014	165.58	July (16.81)	N/A
2015	152.21	June (15.02)	0.71
2016	154.00	June (18.13)	0.98

Data Source: ARDWP, 2006-2016
NR – No Record
*- Calculated MDD utilizing the method specified in Section 64554(b)(2).

The California Waterworks Standards also require a water system with 1,000 or more service connections to meet four hours of peak hourly demand (PHD) with source capacity, storage capacity, and/or emergency source connections. Using the peaking factor of 1.5, times the average hourly consumption during the maximum demand day (0.06 MG per hour), the estimated PHD for Sativa is 0.09 MG. The amount of water needed to meet four hours of PHD is 0.36 MG. Wells 3 and 5 can produce up to 0.23 MG in four hours, which is not enough to meet the four hours of PHD. According to Sativa, the emergency interconnection with the City of Compton can provide an

additional 0.22 MG in four hours. However, during a meeting with Sativa on April 25, 2018, the representatives from Sativa reported there were issues on the City of Compton side and the emergency interconnection with the City of Compton is not reliable.

CCR, Title 22, Section 64449.5(d). *Distribution System Physical Water Quality*, states "The distribution system water of public water systems shall be free from significant amounts of particulate matter". On April 13, 2018, the Division received a referral from the Los Angeles County Public Health (LACPH) regarding the muddy water complaint to the office of the Los Angeles Board of Supervisor Mark Ridley-Thomas. According to the complaint forwarded by LACPH, Sativa customers have been receiving muddy water from Sativa throughout the service area for an extended period of time. The Division contacted Sativa on the same day and learned that they had been conducting system-wide flushing. Upon the Division's request, Sativa sent via email on April 16, 2018 of the customer complaint records (Appendix 2), records of the most recent round of flushing (Appendix 3), and flushing notification examples (Appendix 4) to the Division.

On April 17, 2018, the Division received a referral from the Office of the Governor regarding dirty water served by Sativa. According to the complaint, the community served by Sativa has been receiving rusty water for years. The water rate has increased. However, the residents did not see any improvement.

On April 19, 2018, the Division met with Sativa's management and representatives from SAFNA to review the operation records. Records of customer complaints, flushing activities and associated customer notifications were reviewed and discussed during the meeting.

The records showed that Sativa conducted system-wide flushing on on April 5, 6, 7, 12 and 13, 2018. Section 64602 of the Waterworks Standards require each distribution

system be operated in a manner to assure that the minimum operating pressure in the water main at the user service line connection throughout the distribution system is not less than 20 psi at all times. The flushing records showed that on April 5, 2018, one fire hydrant located in the southwestern side of the service area had zero residual pressure during flushing. In addition, on April 12, 2018, four fire hydrants located in the northeastern side of the service area had water pressures less than 20 psi during flushing. Sativa recorded chlorine residual test results on the flushing record forms for April 12 and 13, 2018. Chlorine residuals at the flushing locations were acceptable (0.59 mg/L to 1.25 mg/L).

Section 64575 of the California Waterworks Standards require flushing velocity in the main not to be less than 2.5 ft/s unless it is determined that conditions do not permit the required flow to be discharged to waste. Sativa's distribution system is composed of four-inch and six-inch water pipes. To achieve the 2.5 ft/s flushing velocity, the flushing flows must be equal or greater than 100 gpm and 225 gpm for the four-inch diameter and six-inch diameter water main pipes, respectively. Sativa did not record the flushing flows for the following fire hydrants: 740 139th Street and 748 138th Street located in the southwestern part of the service area, 2034 Bliss Street and 13100 Oleander located in the northwestern part of the service area, East Willowbrook/Wayside, Northwest Penrose/Lucien, Deadend Penrose, 13023 Mona and 13013 Mona located in the northeastern part of the service area, and 13115 Mona Blowoff and 2308 Piru Street Blowoff located in the southeastern part of the service area. Because the chief operator, who initiated the flushing activities, was on vacation on April 19, 2018, Sativa could not explain the low-pressure readings and the missing flow records.

On April 19, 2018, the Division also inspected Sativa's facilities and conducted field chlorine residual testing at four bacteriological sample stations (Total Coliform Rule compliance sampling sites) and three residential sites selected by Sativa. The water

appeared to be clear at all seven sites and free chlorine residual were within the normal range.

On April 23, 2018, the Division conducted another field visit to collect samples from the homes known to have water quality problem and suggested by the customer who had contacted the Division, and from areas where many complaints coming from (based on the customer complaint records provided to the Division on April 16, 2018). Samples were collected from eight homes for bacteriological, color, iron, manganese, and turbidity analyses. The Division also conducted free chlorine residual field testing at these sites. At the first three homes, brown water came out of the hose bibb outside the building, but cleared up around 5 to 10 seconds later. These homes are located at the southwestern side of the service area. The water appeared to be clear at the other homes. Although free chlorine residuals were adequate at all eight homes, there were three homes with chlorine residual lower than normal. These homes are located in the south, southwest and east parts of the service area.

On April 24, 2018, the Division contacted Sativa and advised Sativa to begin monitoring the four distribution-system bacteriological sample sites for the general physical parameters (color, odor and turbidity) on a weekly basis. The Division advised Sativa to stop the on-going system-wide flushing activities until further notice. The Division also requested to meet with the chief operator to discuss about issues discovered while reviewing the flushing records.

On April 25, 2018, the Division received from the Drinking Water and Radiation Laboratory Branch, Richmond, of the California Department of Public Health (CDPH Richmond Lab) the results of the bacteriological analyses for the eight samples collected on April 23, 2018 (Appendix 5). All samples were tested negative for total coliforms.

On April 26, 2018, the Division met with Sativa management, the chief operator and another SAFNA representative. The chief operator was asked of the issues of low pressures and missing flow records during flushing. The chief operator indicated he had no time to complete the fire flow calculation for some of the fire hydrants before submitting the flushing records to the Division. In addition, the flow meter they used could not register flowrate lower than 380 gpm. He would like to go back to these hydrants and repeat the flushing to obtain the flow and pressure records. The chief operator could not explain the directions of the flow in the system during normal operation condition, the logic of the flushing/valve opening or closing sequences, and the reason for selecting the flowmeter used during flushing operation. The chief operator did not show any consideration had been given during the planning stage to ensure the minimum system pressure of 20 psi and flushing velocity of 2.5 ft/s can be maintained. The chief operator was reminded that Sativa should not conduct system-wide flushing activities until advised by the Division. Flushing should only be done in response to customer complaints. It was apparent that Sativa did not plan and execute the flushing activities properly. The minimum pressure of 20 psi was not maintained throughout the distribution system. In addition, Sativa could not demonstrate the minimum flushing velocity of 2.5 ft/s was achieved during flushing.

On April 27, 2018, the Division received from the CDPH Richmond Lab the color, iron, manganese and turbidity test results of samples collected from eight homes on April 23, 2018 (Appendix 6). Color, iron, manganese and turbidity were detected at all the homes. Two samples had color levels exceeding the secondary maximum contaminant level (SMCL) of 15 Units and two more samples had color levels equal to the SMCL. In addition, four samples had manganese concentrations exceeding the SMCL of 50 parts per billion (ppb). The results are summarized in the table below.

Results of General Physical Samples Collected from Residential Homes on April 23, 2018

Sample Site	Address	Iron, ppb	Manganese, ppb	Turbidity, NTU	Color, Unit
1	2069 East Hatchway Street	15	28.8	0.46	**15**
2	732 138th Street	14.6	28.2	0.373	5
3	741 139th Street	34.1	81.5	1.21	20
4	2152 Oris Street	13.8	33.4	0.474	5
5	13402 Largo Street	13.1	27.1	0.383	10
6	2136 East Piru Street	18.4	53.5	0.615	**15**
7	2042 Nord Street	19.4	59.6	0.855	10
8	13128 South Vesta Avenue	100	185	2.21	17.5

Note: Iron, Manganese, Turbidity and Color SMCLs are 300 ppb, 50 ppb, 5 NTU and 15 Units, respectively.

The Division also reviewed the monthly distribution system general physical monitoring reports submitted by Sativa. As a community water system with greater than 1,000 service connections and without an adequate flushing program, Sativa is required to collect one general physical parameter sample per week. Review of the past monitoring records (Appendix 7) revealed that Sativa had encountered water discoloration and high turbidity issues in the past. In June 2015, a sample collected from 2315 Bliss Street had color level of 30 units, exceeding the SMCL. In March 2017, a sample collected from 730 139th Street in March had 50 units of color and 17 NTU of turbidity, exceeding both SMCLs for color and turbidity. The SMCL for turbidity is 5 NTU. In addition, in November 2017, a sample collected from 2315 Bliss Street, had color level of 50 units, exceeding the SMCL. Turbidity level in the same sample was 4.7 NTU, approaching the SMCL.

Based on the customer complaints records provided by Sativa on April 16, 2018, Sativa received a total of 52 brown water complaints from March 13, 2017 through April 11, 2018. There were five complaints received during the flushing period. Sativa responded to the complaints by advising the customers to run water inside their homes until water is cleared up. According to Sativa, as follow up to the complaints, samples were collected from the home, outside hose bib, and the nearest bacteriological sample station and tested for chlorine residuals. However, the results were not recorded.

On May 2, 2018, the Division received from Sativa records of customer complaints from April 11, 2018 through May 2, 2018 (Appendix 8). Sativa continued to receive brown water complaints from residents residing at different parts of the service area. A total of 10 complaints was recorded during this period.

On May 3, 2018, the Division sent letters to eight customers who had participated in the sampling event of April 23, 2018 to provide them with a copy of the laboratory report, along with a follow-up questionnaire/survey sheet.

On May 21, 2018, the Division received a call from one of the homeowners who participated in the April 23, 2018 sampling event. The homeowner reported that they continued to receive brown water.

On May 23, 2018, upon repeated request by the Division, Sativa provided via email of a summary of customer complaints received from May 2 through 23, 2018 and the laboratory results for the weekly general physical water quality analyses. The Division discovered there were discrepancies between the summary Sativa provided to LACPH earlier and to the Division in terms of which customers had received bottle water. Upon inquiry, Sativa indicated copy and paste errors and provided a revised version to the Division on May 23, 2018 (Appendix 9).

During the period of May 2 through 23, 2018, there were 34 brown water complaints. According to Sativa, samples were from the home, outside hose bibb, and the nearest bacteriological sample station. These samples were checked visually for particulate matters. However, Sativa did not provide the findings of these visual observations. Sativa reported that the customers had also been advised to run the water inside their homes until water is cleared.

The table below summarizes the weekly general physical water quality test results for samples collected in May 2018. Although none of the sample sites had color or turbidity at the levels exceeding the SMCL, the color and turbidity levels were still elevated.

General Physical Water Quality Results

Date Samples were Collected	Number of Samples	Color Range, Unit	Odor Range, Unit	Turbidity Range, NTU
May 1, 2018	4	7.5 - 10	1	0.4 – 0.7
May 8, 2018	4	5.0 – 7.5	1 - 2	0.4 – 1.2
May 15, 2018	4	7.5 - 10	1	0.4 – 0.8

DETERMINATION

CHSC, Section 116555(a)(3) requires all public water systems to provide a reliable and adequate supply of pure, wholesome, healthful, and potable water.

CCR, Title 22, Section 64554 (a) requires that at all times, a public water system's water source(s) shall have the capacity to meet the system's maximum day demand (MDD). For systems with 1,000 or more service connections, the system shall be able to meet four hours of peak hourly demand (PHD) with source capacity, storage capacity, and/or emergency source connections.

CCR, Title 22, Section 64449.5(d) states that the distribution system water of public water systems shall be free from significant amounts of particulate matter.

CCR, Title 22, Section 64575 (c) states that the flushing velocity in the main shall not be less than 2.5 ft/s unless it is determined that conditions do not permit the required flow to be discharged to waste.

CCR, Title 22, Section 64602(a) states that each distribution system shall be operated in a manner to assure that the minimum operating pressure in the distribution water main at the user service line connection throughout the distributions system is not less than 20 psi at all times.

Based on the above Statement of Facts, the State Water Board has determined that Sativa has failed to provide its customers with a reliable and adequate supply of pure, wholesome, healthful, and potable water pursuant to CHSC, Section 116555(a)(3) and CCR, Title 22, Section 64449.5(d), and failed to comply with the source capacity, minimum flushing velocity, and minimum pressure requirements of the California Waterworks Standards pursuant to CCR, Title 22, Sections 64554(a), 64575(c)) and 64602(a).

DIRECTIVES

To ensure that the water supplied by Sativa is at all times safe, wholesome, healthful, and potable, Sativa is hereby directed to take the following actions:

1. On or before **July 1, 2020** comply with CHSC, Section 116555(a)(3) and CCR, Title 22, Sections 64449.5(d), 64554(a), 64575(c) and 64602(a).

2. **Weekly** sampling of general physical water quality parameters at four bacteriological sampling stations in the distribution system shall continue until the State Water Board, upon the request by Sativa, reviews the monitoring data and determines that the monitoring frequency may be reduced. Sativa shall obtain a written approval from the State Water Board prior to proceeding with the reduced monitoring. Sativa shall ensure that the laboratory conducting the analysis uses the approved method and submits the analytical results electronically to the State

Water Board no later than the 10th day following the month in which the analysis was completed.

3. Prepare for State Water Board's approval of a Corrective Action Plan, identifying improvements to the water system designed to correct the source capacity deficiencies, the general physical water quality issues in the distribution system, and the infrastructure deficiencies hampering effective maintenance of the system, such as flushing activities. The plan shall include a time schedule for completion of each of the phases of the project such as design, construction, and startup, and a date as of which Sativa will be in compliance with the California Waterworks Standards.

4. On or before **August 15, 2018**, submit and present the Corrective Action Plan required under Directive No. 3 above, to the State Water Board's office located at 500 North Central Avenue, Suite 500, Glendale, CA 91203.

5. Perform the State Water Board approved Corrective Action Plan, and each and every element of said plan, according to the time schedule set forth therein.

6. On or before **September 30, 2018**, prepare and submit for State Water Board's approval of a Standard Operating Procedures (SOP) for the flushing activities and a training plan for the personnel involved in carrying out the flushing activities.

7. On or before **October 10, 2018**, and every three months thereafter, submit a report to the State Water Board in the form provided as Appendix 10 summarizing actions taken during the quarter (calendar three months) to comply with the Corrective Action Plan and the approved flushing activity training plan prepared under Directive 6.

8. Notify the State Water Board in writing no later than five days prior to the deadline for performance of any Directive set forth herein if Sativa anticipates it will not timely meet such performance deadline.

9. By **June 15, 2018**, complete and return to the State Water Board the "Notification of Receipt" form attached to this Order as Appendix 11. Completion of this form confirms that Sativa has received this Order and understands that it contains legally enforceable directives with due dates.

All submittals required by this Order shall be electronically submitted to the State Water Board at the following address. The subject line for all electronic submittals corresponding to this Order shall include the following information: Water System name and number, compliance order number and title of the document being submitted.

Shu-Fang Orr, P.E. District Engineer
State Water Resources Control Board
Division of Drinking Water, Angeles District
500 North Central Avenue, Suite 500
Glendale, CA 91203

DDWRegion4@waterboards.ca.gov

The State Water Board reserves the right to make modifications to this Order as it may deem necessary to protect public health and safety. Such modifications may be issued as amendments to this Order and shall be effective upon issuance.

Nothing in this Order relieves Sativa of its obligation to meet the requirements of the California SDWA (CHSC, Division 104, Part 12, Chapter 4, commencing with Section 116270), or any regulation, standard, permit or order issued or adopted thereunder.

PARTIES BOUND

This Order shall apply to and be binding upon Sativa, its owners, shareholders, officers, directors, agents, employees, contractors, successors, and assignees.

SEVERABILITY

The directives of this Order are severable, and Sativa shall comply with each and every provision thereof notwithstanding the effectiveness of any provision.

FURTHER ENFORCEMENT ACTION

The California SDWA authorizes the State Water Board to: issue a citation or order with assessment of administrative penalties to a public water system for violation or continued violation of the requirements of the California SDWA or any regulation, permit, standard, citation, or order issued or adopted thereunder including, but not limited to, failure to correct a violation identified in a citation or compliance order. The California SDWA also authorizes the State Water Board to take action to suspend or revoke a permit that has been issued to a public water system if the public water system has violated applicable law or regulations or has failed to comply with an order of the State Water Board, and to petition the superior court to take various enforcement measures against a public water system that has failed to comply with an order of the State Water Board. The State Water Board does not waive any further enforcement action by issuance of this Order.

June 1, 2018

Jeff O'Keefe, P.E. Chief
Southern California Section
State Water Resources Control Board
Division of Drinking Water

Date

Appendices (11):

1. Applicable Statutes and Regulations
2. Summary of Customer Complaints from March 13, 2017 through April 11, 2018
3. April 2018 Flushing Activity Summary
4. Example Flushing Notifications
5. CDPH Richmond Laboratory Reports for Total Coliform Samples Collected on April 23, 2018
6. CDPH Richmond Laboratory Reports for Iron, Manganese and General Physical Parameter Samples Collected on April 23, 2018
7. Distribution System General Physical Monitoring Summary (January 2010 to May 2018)
8. Summary of Customer Complaints from April 11, 2018 to May 2, 2018
9. Revised Customer Complaint Summary for May 2 to May 23, 2018
10. Quarterly Progress Report Form
11. Notification of Receipt Form

Certified Mail No. 7014 2870 0001 2130 1335

APPENDIX 1. APPLICABLE STATUTES AND REGULATIONS FOR Compliance Order No. 04_22_18R_002 Distribution System Physical Water Quality and Waterworks Standards Violations

NOTE: The following language is provided for the convenience of the recipient, and cannot be relied upon as the State of California's representation of the law. The published codes are the only official representation of the law. Regulations related to drinking water are in Titles 22 and 17 of the California Code of Regulations. Statutes related to drinking water are in the Health & Safety Code, the Water Code, and other codes.

California Health and Safety Code (CHSC):

Section 116271 states in relevant part:

(a) The state board succeeds to and is vested with all of the authority, duties, powers, purposes, functions, responsibilities, and jurisdiction of the State Department of Public Health, its predecessors, and its director for purposes of all of the following:

(1) The Environmental Laboratory Accreditation Act (Article 3 (commencing with Section 100825) of Chapter 4 of Part 1 of Division 101).

(2) Article 3 (commencing with Section 106875) of Chapter 4 of Part 1.

(3) Article 1 (commencing with Section 115825) of Chapter 5 of Part 10.

(4) This chapter and the Safe Drinking Water State Revolving Fund Law of 1997 (Chapter 4.5 (commencing with Section 116760)).

(5) Article 2 (commencing with Section 116800), Article 3 (commencing with Section 116825), and Article 4 (commencing with Section 116875) of Chapter 5.

(6) Chapter 7 (commencing with Section 116975).

(7) The Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Division 43 (commencing with Section 75001) of the Public Resources Code).

(8) The Water Recycling Law (Chapter 7 (commencing with Section 13500) of Division 7 of the Water Code).

(9) Chapter 7.3 (commencing with Section 13560) of Division 7 of the Water Code.

(10) The California Safe Drinking Water Bond Law of 1976 (Chapter 10.5 (commencing with Section 13850) of Division 7 of the Water Code).

(11) Wholesale Regional Water System Security and Reliability Act (Division 20.5 (commencing with Section 73500) of the Water Code).

(12) Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002 (Division 26.5 (commencing with Section 79500) of the Water Code).

(b) The state board shall maintain a drinking water program and carry out the duties, responsibilities, and functions described in this section. Statutory reference to "department," "state department," or "director" regarding a function transferred to the state board shall refer to the state board. This section does not impair the authority of a local health officer to enforce this chapter or a county's election not to enforce this chapter, as provided in Section 116500...

(k)

(1) The state board shall appoint a deputy director who reports to the executive director to oversee the issuance and enforcement of public water system permits and other duties as appropriate. The deputy director shall have public health expertise.

(2) The deputy director is delegated the state board's authority to provide notice, approve notice content, approve emergency notification plans, and take other action pursuant to Article 5 (commencing with Section 116450), to issue, renew, reissue, revise, amend, or deny any public water system permits pursuant to Article 7 (commencing with Section 116525), to suspend or revoke any public water system permit pursuant to Article 8 (commencing with Section 116625), and to issue citations, assess penalties, or issue orders pursuant to Article 9 (commencing with Section 116650). Decisions and actions of the deputy director taken pursuant to Article 5 (commencing with Section 116450) or Article 7 (commencing with Section 116525) are deemed decisions and actions taken by the state board, but are not subject to reconsideration by the state board except as provided in Section 116540. Decisions and actions of the deputy director taken pursuant to Article 8 (commencing with Section 116625) and Article 9 (commencing with Section 116650) are deemed decisions and actions taken by the state board, but any aggrieved person may petition the state board for reconsideration of the decision or action. This subdivision is not a limitation on the state board's authority to delegate any other powers and duties.

Section 116275 states in relevant part:

(c) "Primary drinking water standards" means:

(1) Maximum levels of contaminants that, in the judgment of the state board, may have an adverse effect on the health of persons.

(2) Specific treatment techniques adopted by the state board in lieu of maximum contaminant levels pursuant to subdivision (j) of Section 116365.

(3) The monitoring and reporting requirements as specified in regulations adopted by the state board that pertain to maximum contaminant levels.

Section 116555 states in relevant part:

(a) Any person who owns a public water system shall ensure that the system does all of the following:

(1) Complies with primary and secondary drinking water standards.

(2) Will not be subject to backflow under normal operating conditions.

(3) Provides a reliable and adequate supply of pure, wholesome, healthful, and potable water.

Section 116577. Enforcement fee states:

(a) Each public water system shall reimburse the state board for actual costs incurred by the state board for any of the following enforcement activities related to that water system:

(1) Preparing, issuing, and monitoring compliance with, an order or a citation.

(2) Preparing and issuing public notification.

(3) Conducting a hearing pursuant to Section 116625.

(b) The state board shall submit an invoice for these enforcement costs to the public water system that requires payment before September 1 of the fiscal year following the fiscal year in which the costs were incurred. The invoice shall indicate the total hours expended, the reasons for the expenditure, and the hourly cost rate of the state board. The costs set forth in the invoice shall not exceed the total actual costs to the state board of enforcement activities specified in this section.

(c) Notwithstanding the reimbursement of enforcement costs of the local primacy agency pursuant to subdivision (a) of Section 116595 by a public water system under the jurisdiction of the local primacy agency, a public water system shall also reimburse enforcement costs, if any, incurred by the state board pursuant to this section.

(d) "Enforcement costs," as used in this section, does not include "litigation costs" pursuant to Section 116585.

(e) The state board shall not be entitled to enforcement costs pursuant to this section if a court determines that enforcement activities were in error.

(f) Payment of the invoice shall be made within 90 days of the date of the invoice. Failure to pay the invoice within 90 days shall result in a 10-percent late penalty that shall be paid in addition to the invoiced amount.

(g) The state board may, at its sole discretion, waive payment by a public water system of all or any part of the invoice or penalty.

Section 116625 (Revocation and suspension of permits) states:

(a) The state board, after providing notice to the permittee and opportunity for a hearing, may suspend or revoke any permit issued pursuant to this chapter if the state board determines pursuant to the hearing that the permittee is not complying with the permit, this chapter, or any regulation, standard, or order issued or adopted thereunder, or that the permittee has made a false statement or representation on any application, record, or report maintained or submitted for purposes of compliance with this chapter. If the permittee does not request a hearing within the period specified in the notice, the state board may suspend or revoke the permit without a hearing. If the permittee submits a timely request for a hearing, the hearing shall be before the state board or a member of the state board, in accordance with Section 183 of the Water Code and the rules for adjudicative proceedings adopted under Section 185 of the Water Code. If the permit at issue has been temporarily suspended pursuant to subdivision (b), the notice shall be provided within 15 days of the effective date of the temporary suspension order. The commencement of the hearing under this subdivision shall be as soon as practicable, but no later than 60 days after the effective date of the temporary suspension order, unless the state board grants an extension of the 60 day period upon request of the permittee.

(b) The state board may temporarily suspend any permit issued pursuant to this chapter before any hearing when the action is necessary to prevent an imminent or substantial danger to health. The state board shall notify the permittee of the temporary suspension and the effective date of the temporary suspension and, at the same time, notify the permittee that a hearing has been scheduled. The hearing shall be held as soon as possible, but not later than 15 days after the effective date of the temporary suspension unless the state board grants an extension of the 15 day period upon request of the permittee, and shall deal only with the issue of whether the temporary suspension shall remain in place pending a hearing under subdivision (a). The hearing shall be conducted under the rules for adjudicative proceedings adopted by the state board under Section 185 of the Water Code. The temporary suspension shall remain in effect until the hearing under this subdivision is completed and the state board has made a final determination on the temporary suspension, which shall be made within 15 days after the completion of the hearing unless the state board grants an extension of the 15 day period upon request of the permittee. If the determination is not transmitted within 15 days after the hearing is completed, or any extension of this period requested by the permittee, the temporary suspension shall be of no further effect. Dissolution of the temporary suspension does not deprive the state board of jurisdiction to proceed with a hearing on the merits under subdivision (a).

Section 116650 states in relevant part:

(a) If the state board determines that a public water system is in violation of this chapter or any regulation, permit, standard, citation, or order issued or adopted thereunder, the state board may issue a citation to the public water system. The citation shall be served upon the public water system personally or by certified mail. Service shall be deemed effective as of the date of personal service or the date of receipt of the certified mail. If a person to whom a citation is directed refuses to accept delivery of the certified mail, the date of service shall be deemed to be the date of mailing.

(b) Each citation shall be in writing and shall describe the nature of the violation or violations, including a reference to the statutory provision, standard, order, citation, permit, or regulation alleged to have been violated.

(c) A citation may specify a date for elimination or correction of the condition constituting the violation.

(d) A citation may include the assessment of a penalty as specified in subdivision (e).

(e) The state board may assess a penalty in an amount not to exceed one thousand dollars ($1,000) per day for each day that a violation occurred, and for each day that a violation continues to occur. A separate penalty may be assessed for each violation and shall be in addition to any liability or penalty imposed under any other law.

Section 116655. (Orders) states

(a) Whenever the state board determines that any person has violated or is violating this chapter, or any order, permit, regulation, or standard issued or adopted pursuant to this chapter, the state board may issue an order doing any of the following:

(1) Directing compliance forthwith.

(2) Directing compliance in accordance with a time schedule set by the state board.

(3) Directing that appropriate preventive action be taken in the case of a threatened violation.

(b) An order issued pursuant to this section may include, but shall not be limited to, any or all of the following requirements:

(1) That the existing plant, works, or system be repaired, altered, or added to.

(2) That purification or treatment works be installed.

(3) That the source of the water supply be changed.

(4) That no additional service connection be made to the system.

(5) That the water supply, the plant, or the system be monitored.

(6) That a report on the condition and operation of the plant, works, system, or water supply be submitted to the state board.

Section 116701 (Petitions to Orders and Decisions) states:

(a)

(1) Within 30 days of issuance of an order or decision under authority delegated to an officer or employee of the state board under Article 8 (commencing with Section 116625) or Article 9 (commencing with Section 116650), an aggrieved person may petition the state board for reconsideration.

(2) Within 30 days of issuance of an order or decision under authority delegated to an officer or employee of the state board under Section 116540, the applicant may petition the state board for reconsideration.

(3) Within 30 days of final action by an officer or employee of the state board acting under delegated authority, the owner of a laboratory that was the subject of the final action may petition the state board for reconsideration of any of the following actions:

(A) Denial of an application for certification or accreditation under Section 100855.

(B) Issuance of an order directing compliance under Section 100875.

(C) Issuance of a citation under Section 100880.

(D) Assessment of a penalty under subdivision (e) of Section 100880.

(b) The petition shall include the name and address of the petitioner, a copy of the order or decision for which the petitioner seeks reconsideration, identification of the reason the petitioner alleges the issuance of the order was inappropriate or improper, the specific action the petitioner requests, and other information as the state board may prescribe. The petition shall be accompanied by a statement of points and authorities of the legal issues raised by the petition.

(c) The evidence before the state board shall consist of the record before the officer or employee who issued the order or decision and any other relevant evidence that, in the judgment of the state board, should be considered to implement the policies of this chapter. The state board may, in its discretion, hold a hearing for receipt of additional evidence. .

(d) The state board may refuse to reconsider the order or decision if the petition fails to raise substantial issues that are appropriate for review, may deny the petition upon a determination that the issuance of the order or decision was appropriate and proper, may set aside or modify the order or decision, or take other appropriate action. The state board's action pursuant to this subdivision shall constitute the state board's completion of its reconsideration.

(e) The state board, upon notice and hearing, if a hearing is held, may stay in whole or in part the effect of the order or decision subject to the petition for reconsideration.

(f) If an order or decision is subject to reconsideration under this section, the filing of a petition for reconsideration is an administrative remedy that must be exhausted before filing a petition for writ of mandate under Section 100920.5 or 116700.

California Code of Regulations, Title 22 (CCR):

Section 64449.5. Distribution System Physical Water Quality, states:

(a) The water supplier shall determine the physical water quality in the distribution system. This determination shall be based on one or more of the following:

(1) Main flushing operations and flushing records.

(2) Consumer complaint records showing location, nature and duration of the physical water quality problem.

(3) Other pertinent data relative to physical water quality in the distribution system.

(b) If the State Board determines that a water system does not have sufficient data on physical water quality in the distribution system to make the determination required in paragraph (a), the water supplier shall collect samples for the following general physical analyses: color, odor, and turbidity. Samples shall be collected from representative points in the distribution system:

(1) For community water systems with 200 to 1,000 service connections: one sample per month.

(2) For community water systems with greater than 1,000 service connections: one sample for every four bacteriological samples required per month.

(3) For community water systems with less than 200 service connections: as established by the local health officer or the State Board.

(c) Odor samples required as a part of general physical analyses may be examined in the field as per Section 64415(b).

(d) The distribution system water of public water systems shall be free from significant amounts of particulate matter.

Section 64554. New and Existing Source Capacity, states:

(a) At all times, a public water system's water source(s) shall have the capacity to meet the system's maximum day demand (MDD). MDD shall be determined pursuant to subsection (b).

(1) For systems with 1,000 or more service connections, the system shall be able to meet four hours of peak hourly demand (PHD) with source capacity, storage capacity, and/or emergency source connections.

(2) For systems with less than 1,000 service connections, the system shall have storage capacity equal to or greater than MDD, unless the system can demonstrate that it has an additional source of supply or has an emergency source connection that can meet the MDD requirement.

(3) Both the MDD and PHD requirements shall be met in the system as a whole and in each individual pressure zone.

(b) A system shall estimate MDD and PHD for the water system as a whole (total source capacity and number of service connections) and for each pressure zone within the system (total water supply available from the water sources and interzonal transfers directly supplying the zone and number of service connections within the zone), as follows:

(1) If daily water usage data are available, identify the day with the highest usage during the past ten years to obtain MDD; determine the average hourly flow during MDD and multiply by a peaking factor of at least 1.5 to obtain the PHD.

(2) If no daily water usage data are available and monthly water usage data are available:

(A) Identify the month with the highest water usage (maximum month) during at least the most recent ten years of operation or, if the system has been operating for less than ten years, during its period of operation;

(B) To calculate average daily usage during maximum month, divide the total water usage during the maximum month by the number of days in that month; and

(C) To calculate the MDD, multiply the average daily usage by a peaking factor that is a minimum of 1.5; and

(D) To calculate the PHD, determine the average hourly flow during MDD and multiply by a peaking factor that is a minimum of 1.5.

(3) If only annual water usage data are available:

(A) Identify the year with the highest water usage during at least the most recent ten years of operation or, if the system has been operating for less than ten years, during its years of operation;

(B) To calculate the average daily use, divide the total annual water usage for the year with the highest use by 365 days; and

(C) To calculate the MDD, multiply the average daily usage by a peaking factor of 2.25.

(D) To calculate the PHD, determine the average hourly flow during MDD and multiply by a peaking factor that is a minimum of 1.5.

(4) If no water usage data are available, utilize records from a system that is similar in size, elevation, climate, demography, residential property size, and metering to determine the average water usage per service connection.

From the average water usage per service connection, calculate the average daily demand and follow the steps in paragraph (3) to calculate the MDD and PHD.

(c) Community water systems using only groundwater shall have a minimum of two approved sources before being granted an initial permit. The system shall be capable of meeting MDD with the highest-capacity source off line.

(d) A public water system shall determine the total capacity of its groundwater sources by summing the capacity of its individual active sources. If a source is influenced by concurrent operation of another source, the total capacity shall be reduced to account for such influence. Where the capacity of a source varies seasonally, it shall be determined at the time of MDD.

(e) The capacity of a well shall be determined from pumping data existing prior to March 9, 2008, or in accordance with subsection (f) or (g). Prior to conducting a well capacity test pursuant to subsection (g), a system shall submit the information listed below to the State Board for review and approval. For well capacity tests conducted pursuant to subsection (f), the information shall be submitted to the State Board if requested by the State Board.

(1) The name and qualifications of the person who will be conducting the test;

(2) The proposed test's pump discharge rate, based on the design rate determined during well development and/or a step-drawdown test.

(3) A copy of a United States Geological Survey 7 ½-minute topographic map of the site at a scale of 1:24,000 or larger (1 inch equals 2,000 feet or 1 inch equals less than 2,000 feet) or, if necessary, a site sketch at a scale providing more detail, that clearly indicates;

(A) The well discharge location(s) during the test, and

(B) The location of surface waters, water staff gauges, and other production wells within a radius of 1000 feet;

(4) A well construction drawing, geologic log, and electric log, if available;

(5) Dates of well completion and well development, if known;

(6) Specifications for the pump that will be used for the test and the depth at which it will draw water from the well;

(7) A description of the methods and equipment that will be used to measure and maintain a constant pumping rate;

(8) A description of the water level measurement method and measurement schedule;

(9) For wells located in or having an influence on the aquifer from which the new well will draw water, a description of the wells' operating schedules and the estimated amount of groundwater to be extracted, while the new well is tested and during normal operations prior to and after the new well is in operation;

(10) A description of the surface waters, water staff gauges, and production wells shown in (3)(B);

(11) A description of how the well discharge will be managed to ensure the discharge doesn't interfere with the test;

(12) A description of how the initial volume of water in the well's casing, or bore hole if there is no casing at the time, will be addressed to ensure it has no impact on the test results; and

(13) A written description of the aquifer's annual recharge.

(f) To determine the capacity of a well drilled in alluvial soils when there is no existing data to determine the capacity, a water system shall complete a constant discharge (pumping rate) well capacity test and determine the capacity as follows:

(1) Take an initial water level measurement (static water level) and then pump the well continuously for a minimum of eight hours, maintaining the pump discharge rate proposed in subsection (e)(2);

(2) While pumping the well, take measurements of the water level drawdown and pump discharge rates for a minimum of eight hours at a frequency no less than every hour;

(3) Plot the drawdown data versus the time data on semi-logarithmic graph paper, with the time intervals on the horizontal logarithm axis and the drawdown data on the vertical axis;

(4) Steady-state is indicated if the last four hours of drawdown measurements and the elapsed time yield a straight line in the plot developed pursuant to subsection (3). If steady-state is not achieved, the pump discharge rate shall be continued for a longer period of time or adjusted, with paragraphs (2) and (3) above repeated, until steady-state is achieved.

(5) Discontinue pumping and take measurements of the water level drawdown no less frequently than every 15 minutes for the first two hours and every hour thereafter for at least six hours or until the test is complete; and

(6) To complete the test, the well shall demonstrate that, within a length of time not exceeding the duration of the pumping time of the well capacity test, the water level has recovered to within two feet of the static water level measured at the beginning of the test or to a minimum of ninety-five percent of the total drawdown measured during the test, whichever is more stringent.

(7) The capacity of the well shall be the pump discharge rate determined by a completed test.

(g) The capacity of a well whose primary production is from a bedrock formation, such that the water produced is yielded by secondary permeability features (e.g., fractures or cracks), shall be determined pursuant to either paragraph (1) or (2) below.

(1) The public water system shall submit a report, for State Board review and approval, proposing a well capacity based on well tests and the evaluation and management of the aquifer from which the well draws water. The report shall be prepared and signed by a California registered geologist with at least three years of experience with groundwater hydrology, a California licensed engineer with at least five years of experience with groundwater hydrology, or a California certified hydrogeologist. Acceptance of the proposed well capacity by the State Board shall, at a minimum, be based on the State Board's review and approval of the following information presented in the report in support of the proposed well capacity:

(A) The rationale for the selected well test method and the results;

(B) The geological environment of the well;

(C) The historical use of the aquifer;

(D) Data from monitoring of other local wells;

(E) A description of the health risks of contaminants identified in a Source Water Assessment, as defined in section 63000.84 of Title 22, and the likelihood of such contaminants being present in the well's discharge;

(F) Impacts on the quantity and quality of the groundwater;

(G) How adjustments were made to the estimated capacity based on drawdown, length of the well test, results of the wells test, discharge options, and seasonal variations and expected use of the well; and

(H) The well test(s) results and capacity analysis.

(2) During the months of August, September, or October, conduct either a 72-hour well capacity test or a 10-day well capacity test, and determine the well capacity using the following procedures:

(A) Procedures for a 72 hour well capacity test:

1. For the purpose of obtaining an accurate static water level value, at least twelve hours before initiating step 2., pump the well at the pump discharge rate proposed in subsection (e)(2) for no more than two hours, then discontinue pumping;

2. Measure and record the static water level and then pump the well continuously for a minimum of 72 hours starting at the pump discharge rate proposed in (e)(2);

3. Measure and record water drawdown levels and pump discharge rate:

a. Every thirty minutes during the first four hours of pumping,

b. Every hour for the next four hours, and

c. Every four hours thereafter until the water drawdown level is constant for at least the last four remaining measurements, and;

4. Plot the drawdown and pump discharge rate data versus time data on semi-logarithmic graph paper, with the time intervals on the horizontal logarithmic axis and the drawdown and pump discharge rate data on the vertical axis.

(B) Procedures for a 10 day well capacity test:

1. For the purpose of obtaining an accurate static water level value, at least twelve hours before initiating step 2., pump the well at the pump discharge rate proposed in subsection (e)(2) for no more than two hours, then discontinue pumping;

2. Measure and record the static water level and then pump the well continuously for a minimum of 10 days starting at the pump discharge rate proposed in (e)(2);

3. Measure and record water drawdown levels and pumping rate:

a. Every thirty minutes during the first four hours of pumping,

b. Every hour for the next four hours,

c. Every eight hours for the remainder of the first four days,

d. Every 24 hours for the next five days, and

e. Every four hours thereafter until the water drawdown level is constant for at least the last four remaining measurements, and;

4. Plot the drawdown and pump discharge rate data versus time data on semi-logarithmic graph paper, with the time intervals on the horizontal logarithmic axis and the drawdown and pump discharge rate data on the vertical axis.

(C) To complete either the 72-hour or 10-day well capacity test the well shall demonstrate that, within a length of time not exceeding the duration of the pumping time of the well capacity test, the water level has recovered to within two feet of the static water level measured at the beginning of the well capacity test or to a minimum of ninety-five percent of the total drawdown measured during the test, whichever is more stringent. If the well recovery does not meet these criteria, the well capacity cannot be determined pursuant to subsection (g)(2) using the proposed pump rate. To demonstrate meeting the recovery criteria, the following water level data in the well shall be measured, recorded, and compared with the criteria:

1. Every 30 minutes during the first four hours after pumping stops,

2. Hourly for the next eight hours, and

3. Every 12 hours until either the water level in the well recovers to within two feet of the static water level measured at the beginning of the well capacity test or to a at least ninety-five percent of the total drawdown measured during the test, which ever occurs first.

(D) Following completion of a 72-hour or 10-day well capacity test, the well shall be assigned a capacity no more than:

1. For a 72-hour test, 25 percent of the pumping rate at the end of a completed test's pumping.
2. For a 10-day test, 50 percent of the pumping rate at the end a completed test's pumping.

(h) The public water system shall submit a report to the State Board that includes all data and observations associated with a well capacity test conducted pursuant to subsection (f) or (g), as well as the estimated capacity determination methods and calculations. The data collected during pumping and recovery phases of the well capacity tests shall be submitted in an electronic spreadsheet format in both tabular and graphic files.

(i) An assigned well capacity may be revised by the State Board if pumping data collected during normal operations indicates that the assigned well capacity was not representative of the actual well capacity.

(j) If directed by the State Board to do so, based on adverse conditions that may lead or may have led to a regional aquifer's inability to meet a water system's demand on such an aquifer, the water system shall submit a report to the State Board that includes regional aquifer recharge estimates and a water balance analysis. The report shall be prepared and signed by a California registered geologist with at least three years of experience with groundwater hydrology, a California licensed engineer with at least five years of experience with groundwater hydrology, or a California certified hydrogeologist.

(k) The source capacity of a surface water supply or a spring shall be the lowest anticipated daily yield based on adequately supported and documented data.

(l) The source capacity of a purchased water connection between two public water systems shall be included in the total source capacity of the purchaser if the purchaser has sufficient storage or standby source capacity to meet user requirements during reasonable foreseeable shutdowns by the supplier.

Section 64575. Flushing, states:

(a) A flushing valve or blowoff shall be provided at the end of each newly installed dead-end water main. Fire hydrants meeting the criteria of this section may be considered flushing valves.

(b) Flushing valves and blowoffs shall not discharge to a sanitary sewer without an air gap separation between the sewer and the valve or blowoff.

(c) The flushing velocity in the main shall not be less than 2.5 ft/s unless it is determined that conditions do not permit the required flow to be discharged to waste.

(d) Newly installed flushing valves and blowoffs shall be designed to maintain the minimum continuous flushing flows as indicated below to produce a minimum velocity of 2.5ft/s in commonly used sizes of pipe.

Table 64575-A. Minimum Flushing Flows for Different Size Water Mains.

Nominal Main Size	*Minimum Flushing Flow*
Diameter (inches)	*(gallons per minute)*
2	25
3	50
4	100
6	225
8	400
10	600
12	900
14	1200
16	1600

Section 64602. Minimum Pressure, states:

(a) Each distribution system shall be operated in a manner to assure that the minimum operating pressure in the water main at the user service line connection throughout the distribution system is not less than 20 pounds per square inch at all times.

(b) Each new distribution system that expands the existing system service connections by more than 20 percent or that may otherwise adversely affect the distribution system pressure shall be designed to provide a minimum operating pressure throughout the new distribution system of not less than 40 pounds per square inch at all times excluding fire flow.

APPENDIX 2. SUMMARY OF CUSTOMER COMPLAINTS FROM MARCH 13, 2017 THROUGH APRIL 11, 2018

Brown Water Tracking							
#	ADDRESS	ISSUE	DATE	Reocurrence	Reocurrence	Reocurrence	Resolved
1	2020 Piru	Brown Water	3/13/2017				Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
2	726 139th St	Brown Water - Filled washer 4 times and water still light brown	3/28/2017				Water Operator visted and advised customer to run water till it cleared up
3	730 139th St	Slight hazy, yellow	4/20/2017				Water Operator visted and advised customer to run water till it cleared up
4	2058 Oris	Brown Water	4/24/2017				Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
5	2139 Oris	Brown Water	5/3/2017				Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
6	2028 Lucien	Brown Water	5/3/2017	7/5/17	10/16/17	12/6/18	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
7	2087 Oris	Brown Water	5/4/2017				Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
8	2084 Bliss	Brown Water	5/4/2017				Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
9	2252 Bliss	Brown Water	5/4/2017				Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
10	2104 Hatchway	Brown Water	5/4/2017				Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
11	2070 Stockwell	Brown Water	5/4/2017				Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
12	2153 Nord	Brown Water	5/4/2017				Water Operator visted and advised customer to run water till it cleared up
13	2158 Nord	Brown Water	5/4/2017				Water Operator visted and advised customer to run water till it cleared up
14	2104 Nord	Brown Water	5/4/2017				Water Operator visted and advised customer to run water till it cleared up
15	2112 Knopf	Brown Water	5/10/2017				Water Operator visted and advised customer to run water till it cleared up
16	2044 Shauer	Brown Water	5/11/17				Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
17	2031 Bliss	Brown Water	6/22/17				Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
18	13102 Penrose	Brown Water	6/30/17				Water Operator visted and advised customer to run water till it cleared up
19	2023 Oris	Brown Water	7/5/17				Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
20	2073 Lucien	Yellow Water	7/10/17				Water Operator visted and advised customer to run water till it cleared up
21	2422 Stockwell	Brown Water	7/11/2017				Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
22	1998 Oris	Brown Water	8/1/17				Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
23	2144 Nord	Brown Water	8/3/2017	12/19/17			Water Operator visted and advised customer to run water till it cleared up
24	2414 E Bliss	Brown Water	8/16/2017				Water Operator visted and advised customer to run water till it cleared up
25	2139 E Knopf	Brown Water	8/17/2017				Water Operator visted and advised customer to run water till it cleared up
26	2049 Knopf	Brown Water	9/21/2017				Water Operator visted and advised customer to run water till it cleared up
27	131st St	Brown Water	9/21/2017				Water Operator visted and advised customer to run water till it cleared up
28	13511 Willowbrook	Brown Water	9/21/2017				Water Operator visted and advised customer to run water till it cleared up
29	2008 Stockwell	Brown Water	9/22/2017				Water Operator visted and advised customer to run water till it cleared up
30	13106 Vesta	Brown Water	11/24				Water Operator visted and advised customer to run water till it cleared up
31	13107 Vesta	Brown Water	11/24				Water Operator visted and advised customer to run water till it cleared up
32	13110 Vesta	Brown Water	11/24				Water Operator visted and advised customer to run water till it cleared up

33	13031 Vesta	Brown Water	11/24				Water Operator visted and advised customer to run water till it cleared up
34	2158 Nord	Brown Water	11/24				Water Operator visted and advised customer to run water till it cleared up
35	2160 Nord	Brown Water	11/24	3/5/18			Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
36	2153 Knopf	Brown Water	11/24				Water Operator visted and advised customer to run water till it cleared up
37	2154 Knopf	Brown Water	11/24				Water Operator visted and advised customer to run water till it cleared up
38	2162 Knopf	Brown Water	11/24				Water Operator visted and advised customer to run water till it cleared up
39	2404 Bliss	Brown Water	12/4				Water Operator visted and advised customer to run water till it cleared up
40	2156 E. Nord	Brown Water	3/5/18				Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
41	2035 E. Nord	Brown Water	3/5/18				Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
42	745 139th St	Brown Water	3/8/18				Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
43	2069 E. Oris	Brown Water	3/12/18	3/26/18			Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
44	2116 Oris	Brown Water	4/3/18				Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
45	2228 Oris	Brown Water	4/3/18				Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
46	2129 E. Oris	Brown Water	4/3/18				Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
47	2113 E. Oris	Brown Water	4/3/18				Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
48	2050 Hatchway St	Brown Water	4/5/18				Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
49	13204 Oleander Ave	Brown Water	4/6/18				Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
50	716 138th St	Brown Water	4/9/18				Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
51	2310 E. Stockwell	Brown Water	4/11/18				Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
52	2062 Wayside	Brown Water	4/11/18				Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until it cleared up

APPENDIX 3. APRIL 2018 FLUSHING ACTIVITY SUMMARY

April 5,2018

HYDRANT FLUSHING

ADDRESS	FLOW GPM	PITOT TUBE PRESSURE	STATIC (PSI) PRESSURE	RESIDUAL(PSI) PRESSURE	WATER COLOR	SEDIMENTS YES	SEDIMENTS NO	TIME START	TIME END
2080 STOCKWELL ST	560	12	58	45	BROWN	X		1:00 PM	1:35 PM
2090 PIRU ST / ARANBE	840	25	61	42	BROWN	X		2:00 PM	2:10 PM
2097 HATCHWAY / ARANBE	530	10	61	41	BROWN	X		2:18 PM	2:44 PM
2098 BLISS ST / ARANBE	650	15	62	37	BROWN	X		2:50 PM	3:10 PM
2098 ORIST ST / ARANBE	650	15	62	36	BROWN	X		3:18 PM	3:28 PM
740 139TH ST	?	?	62	50	BROWN	X		3:40 PM	4:00 PM
748 138TH ST	?	0	1	0	BROWN	X		4:00 PM	4:30 PM

OPERATOR _____ DATE _____

April 6,2018		HYDRANT FLUSHING							
ADDRESS	FLOW	PITOT TUBE	STATIC (PSI)	RESIDUAL(PSI)	WATER	SEDIMENTS		TIME	
	GPM	PRESSURE	PRESSURE	PRESSURE	COLOR	YES	NO	START	END
2040 BLISS ST	450	7	56	42	LIGHT BROWN	MINIMAL		9:47 AM	9:54 AM
2034 BLISS ST	?	2	65	41	LIGHT BROWN	MINIMAL		10:05 AM	10:09 AM
2074 SHAUER / ARANBE	1000	35	64	36	BROWN	X		11:02 AM	11:19 AM
2070 LUCIEN ST / ARANBE	895	27	59	37	BROWN	X		11:28 AM	11:53 AM
2066 NORD ST / ARANBE	920	30	61	36	BROWN	X		12:51 PM	1:06 PM
13205 ARANBE / KNOPF	840	25	61	36	BROWN	X		1:13 PM	1:20 PM
2064 WAYSIDE ST / ARANBE	750	20	58	28	BROWN	X		1:51 PM	2:03 PM
2060 131ST ST / ARANBE	750	20	52	30	BROWN	X		2:10 PM	2:25 PM
13341 OLEANDER / STOCKWELL	840	25	55	41	BROWN	X		2:50 PM	3:01 PM
2140 SHAUER	840	25	64	35	BROWN	X		3:10 PM	3:21 PM
2160 NORD ST / OLEANDER	750	20	62	42	BROWN	X		3:30 PM	3:39 PM
13100 OLEANDER	?	7	55	33	BROWN	X		3:45 PM	3:59 PM
2245 STOCKWELL / VESTA	380	5	64	51	BROWN	X		4:08 PM	4:16 PM
13201 VESTA / LUCIEN	380	5	59	42	BROWN	X		4:20 PM	4:28 PM
OPERATOR		DATE							

April 7,2018

HYDRANT FLUSHING

ADDRESS	FLOW	PITOT TUBE	STATIC (PSI)	RESIDUAL(PSI)	WATER	SEDIMENTS		TIME	
	GPM	PRESSURE	PRESSURE	PRESSURE	COLOR	YES	NO	START	END
SW CORNER OLEANDER / PIRU	840	25	59	39	BROWN	X		9:10 AM	9:20 AM
SW CORNER OLEANDER / HATCHWAY	750	20	61	39	BROWN	X		9:31 AM	9:41 AM
SW CORNER BLISS / OLEANDER	750	20	60	39	BROWN	X		9:46 AM	9:57 AM
SW CORNER OLEANDER / ORIS	750	20	61	37	BROWN	X		10:05 AM	10:16 AM
SW CORNER VESTA / PIRU	750	20	53	38	BROWN	X		10:47 AM	10:53 AM
SW CORNER VESTA / HATCHWAY	650	15	59	38	BROWN	X		10:59 AM	11:10 AM
SW CORNER VESTA / BLISS	750	20	57	34	BROWN	X		11:16 AM	11:26 AM
SW CORNER VESTA / ORIS	750	20	58	34	BROWN	X		11:32 AM	11:42 AM
SW CORNER WILLOWBROOK / PIRU	795	22	61	41	BROWN	X		11:53 AM	11:58 AM
SW CORNER WILLOWBROOK / HATCHWAY	650	15	58	42	BROWN	X		12:05 PM	12:09 PM
SW CORNER WILLOWBROOK / BLISS	790	22	60	36	BROWN	X		12:15 PM	12:21 PM
SW CORNER WILLOWBROOK / ORIS	750	20	60	35	BROWN	X		12:25 PM	12:30 PM
OPERATOR	DATE								

April 12,2018

HYDRANT FLUSHING

ADDRESS	FLOW	PITOT TUBE	STATIC (PSI)	RESIDUAL(PSI)	WATER	SEDIMENTS		TIME		CHLORINE
	GPM	PRESSURE	PRESSURE	PRESSURE	COLOR	YES	NO	START	END	RESIDUAL
N/E Lucien & Willowbrook	380	5	57	41	Brown	X		11:37	11:53	1.23
E Willowbrook &Wayside BlowOff	?	?	51	52	Brown	X		12:26	1:00	0.79
Stockwell/ Largo N/E	750	20	56	43	Brown	X		1:10	1:30	1.07
13131 Largo	380	5	55	15	Brown	X		1:37	1:41	0.77
13101 Largo	530	10	61	21	Brown	X		1:48	2:00	0.78
N/W Penrose & Stockwell	750	20	53	36	Brown	X		3:24	3:28	0.87
N/W Penrose & Lucien	No Reading	?	61	5	Brown	X		3:34	3:41	1.12
Deadend Penrose	No Reading	?	66	15	Brown	X		4:01	4:12	0.59
13023 Mona	No Reading	?	64	5	Brown	X		4:24	4:30	0.72
13013 Mona	Blow Out	?	55	33	Brown	X		4:36	4:42	0.75

OPERATOR DATE

April 13,2018		HYDRANT FLUSHING								
ADDRESS	FLOW	PITOT TUBE	STATIC (PSI)	RESIDUAL(PSI)	WATER	SEDIMENTS		TIME		CHLORINE
	GPM	PRESSURE	PRESSURE	PRESSURE	COLOR	YES	NO	START	END	RESIDUAL
13115 Mona BlowOff	?	?	55	33	Brown	X		9:45	9:51	0.75
Stockwell/ Willowbrooks	380	5	58	31	Brown	X		10:02	10:07	0.92
2300 Piru	530	10	64	31	Brown	X		10:14	10:19	0.94
2308 Piru BlowOff	?	?	58	33	Brown	X		11:02	11:07	0.91
2113 Hatchway	540	13	61	31	Brown	X		11:17	11:22	1.04
2311 Bilss	540	13	61	31	Brown	X		11:28	11:35	1.13
S/W Largo/Oris	700	17	54	31	Brown	X		11:45	11:51	1.07
2400 Piru	750	20	61	36	Brown	X		11:54	12:01	1.25
OPERATOR		DATE								

APPENDIX 4. EXAMPLE FLUSHING NOTIFICATIONS

SATIVA LOS ANGELES COUNTY WATER DISTRICT

2015 E. Hatchway Street • Compton, California 90222-3519
Tel. (310) 631-8176 • Fax (310) 632-5492 • www.sativawd.com

Office Hours: 8:00 a.m. to 5:00 p.m. Monday thru Thursday • Closed Fridays, Weekends & Holidays
After hours Emergencies Only: (310) 631-3818

Important Notice

District-Wide Unidirectional Water Main Flushing Program

Dear customer,

Please be advised that the Sativa Water District will be conducting a district-wide unidirectional water main flushing program to improve water quality, increase water flow and pressure, and ensure the delivery of water that meets state and federal drinking water standards. During the water main flushing you might experience periods of low water pressure and discolored water. Water main flushing has long been considered an effective method to remove unwanted odors or discolorations from the water, and to improve chlorine residual. Flushing will take place every week, starting on April 5, 2018, including, but not limited to, Thursdays and Fridays until July of 2018, or whenever the entire district has been properly flushed.

What do customers need to do? Residents and businesses do not need to take any action to prepare for this work. Customers will be able to use their water as usual. When crews are flushing nearby, you may notice a temporary drop in water pressure or discolored water. If your water is discolored, open the cold and hot water faucets inside and outside your home and let the water flow until it is clear. If water does not clear, please contact the Sativa Water District at (310) 631-3818. Please note that flushing will not eliminate discolored water completely, but it will help decrease it. We will be calling all customers in our district when we reach your area. If you would like to be notified via telephone or update your contact information, please call or visit our office.

Why does discolored water occur? Discolored water can happen when crews operate a fire hydrant, when there is a water main break or leak, or when the water in the pipes is forced to travel in a different direction or velocity than normal. When one of these events happens, naturally occurring sediment in the water and rust in the pipes get stirred up, causing the water to look discolored.

Is the water safe? Rust in water is not a sign of harmful bacteria or lead. In fact, the limits set by the Environmental Protection Agency (EPA) for iron in drinking water are based on aesthetics (taste, odor, color), not safety concerns. For questions or concerns, please contact Sativa Water District at (310) 631-8176 or visit our office.

NOTICE HYDRANT FLUSHING

Please be advised that Sativa Water will be flushing fire hydrants in your area to cleanse the system requiring that your water be shut off for a period of time.

Date: 4/6 4/7

Time: 9-5

Duration: _____

You may notice a temporary drop in water pressure or discolored water. This discoloration is harmless and does not affect the safety of water consumption. If your water is discolored, run all water faucets inside your home for approximately 15 minutes, or until the water clears. If water does not clear, please contact Sativa Water at (310)631-3818.

SATIVA LOS ANGELES COUNTY WATER DISTRICT
2015 E. Hatchway Street
Compton, California 90222-3519
Tel. (310) 631-8176 · www.sativawd.com

SATIVA LOS ANGELES
COUNTY WATER DISTRICT
2015 East Hatchway Street
Compton, California 90222

Sativa Water System
Deep Mains Flushing Update

Why is deep water mains flushing necessary?

Flushing our water mains improves water quality by removing sediment that has slowly built up at the bottom of the water main over time. The sediment comes from internal corrosion of our 80 year-old pipes.

Sativa's flushing program started April 5, 2018 and will continue until July of 2018, or whenever the entire district has been properly flushed.

What should I do if my water is discolored after Sativa Water has flushed the water mains?

Water is sometimes discolored after water main cleaning, but this should not last long. In the event customers draw discolored water into the home, flush a cold tap for about 15 minutes or until it clears.

As a precaution, prior to using hot water run the cold water tap for a few minutes to ensure discolored water is not drawn into the hot water tank.

How will I know when Sativa is cleaning the water mains in my neighborhood?

Sativa Water will inform residents before starting the flushing work in your area with a door hanger notice and or by telephone messaging.

Sativa's progress to replace our 80-year-old pipes

Under Proposition 1 Water Bond, Sativa has started the application process for a planning and construction grant funding from the State Water Resources Control Board. Earlier this year, Sativa successfully signed a planning grant to begin the process of designing a better water system. Sativa's goal is to complete the planning and design of major infrastructure over the next year and begin replacing water mains as early as 2019. This process will continue over the next several years. Until then, Sativa will implement regular water main flushing to continue improving water quality for our residents.

Tips for Saving Water During This Continued Drought

Wash your car with a shut-off nozzle fitted hose and bucket

Wash only full loads of laundry and dishes

Replace your showerhead with a high efficiency showerhead

Outside water use is permitted only on Saturdays and Sundays

SATIVA LOS ANGELES COUNTY WATER DISTRICT
2015 E. Hatchway Street • Compton, California 90222-3519
Tel. (310) 631-8176 • www.sativawd.com

APPENDIX 5. CDPH RICHMOND LABORATORY REPORTS FOR TOTAL COLIFORM SAMPLES COLLECTED ON APRIL 23, 2018

State of California - Health and Human Services Agency
California Department of Public Health
Drinking Water and Radiation Laboratory Branch
850 Marina Bay Parkway, Richmond, CA 94804
Phone: (510) 620-2911 Fax: (510) 620-2940

Analytical Report

Task No. 18-4004

Investigator: Ofelia Oracion SWRCB
Site/Project Name: SATIVA-L.A. CWD
System No: 1910147 Samples Received by Lab: 4/24/2018

ANALYSIS ANALYTE	REFERENCE METHOD	ANALYSIS RESULT	REPORTING LIMIT (RL)	UNITS
Lab No: 18-4004-01 Sample ID: Site 1 - D Sample Type: Drinking Water	Time Collected: 4/23/2018 14:02	Sampling Point: Site 1		
Coliforn, Total				
Colilert Tc, Ec P/A				
Coliform, Total	Colilert	Absent		
E. coli	Colilert	Absent		
Lab No: 18-4004-02 Sample ID: Site 2 - D Sample Type: Drinking Water	Time Collected: 4/23/2018 14:35	Sampling Point: Site 2		
Colilert Tc, Ec P/A				
Coliform, Total	Colilert	Absent		
E. coli	Colilert	Absent		
Lab No: 18-4004-03 Sample ID: Site 3 - D Sample Type: Drinking Water	Time Collected: 4/23/2018 14:58	Sampling Point: Site 3		
Colilert Tc, Ec P/A				
Coliform, Total	Colilert	Absent		
E. coli	Colilert	Absent		
Lab No: 18-4004-04 Sample ID: Site 4 - D Sample Type: Drinking Water	Time Collected: 4/23/2018 15:20	Sampling Point: Site 4		

ANALYSIS ANALYTE	REFERENCE METHOD	ANALYSIS RESULT	REPORTING LIMIT (RL)	UNITS
Colilert Tc, Ec P/A				
Coliform, Total	Colilert	Absent		
E. coli	Colilert	Absent		

Lab No: 18-4004-05	Sample ID: Site 5 - D Sample Type: Drinking Water	Time Collected: 4/23/2018 15:39	Sampling Point: Site 5	
Colilert Tc, Ec P/A				
Coliform, Total	Colilert	Absent		
E. coli	Colilert	Absent		
Lab No: 18-4004-06	Sample ID: Site 6 - D Sample Type: Drinking Water	Time Collected: 4/23/2018 15:56	Sampling Point: Site 6	
Colilert Tc, Ec P/A				
Coliform, Total	Colilert	Absent		
E. coli	Colilert	Absent		
Lab No: 18-4004-07	Sample ID: Site 7 - D Sample Type: Drinking Water	Time Collected: 4/23/2018 16:14	Sampling Point: Site 7	
Colilert Tc, Ec P/A				
Coliform, Total	Colilert	Absent		
E. coli	Colilert	Absent		
Lab No: 18-4004-08	Sample ID: Site 8 - D Sample Type: Drinking Water	Time Collected: 4/23/2018 16:34	Sampling Point: Site 8	
Colilert Tc, Ec P/A				
Coliform, Total	Colilert	Absent		
E. coli	Colilert	Absent		

APPENDIX 6. CDPH RICHMOND LABORATORY REPORTS FOR IRON, MANGANESE AND GENERAL PHYSICAL PARAMETER SAMPLES COLLECTED ON APRIL 23, 2018

State of California - Health and Human Services Agency
California Department of Public Health
Drinking Water and Radiation Laboratory Branch
850 Marina Bay Parkway, Richmond, CA 94804
Phone: (510) 620-2911 Fax: (510) 620-2940

Analytical Report

Task No. 18-2017

Investigator: Ofelia Oracion SWRCB
Site/Project Name: SATIVA-L.A. CWD
System No: 1910147 Samples Received by Lab: 4/24/2018

ANALYSIS ANALYTE	REFERENCE METHOD	ANALYSIS RESULT	REPORTING LIMIT (RL)	UNITS
Lab No: 18-2017-01 Sample ID: Site 1 - A Sample Type: Drinking Water	Time Collected: 4/23/2018 13:58		Sampling Point: Site 1	
Iron (Fe)	EPA200.7	15.0	5.0	ug/L (ppb)
Manganese (Mn)	EPA200.7	28.8	5.0	ug/L (ppb)
Lab No: 18-2017-02 Sample ID: Site 1 - B Sample Type: Drinking Water	Time Collected: 4/23/2018 13:59		Sampling Point: Site 1	
Turbidity	SM 2130 B 20t	0.460	0.1	NTU
Lab No: 18-2017-03 Sample ID: Site 1 - C Sample Type: Drinking Water	Time Collected: 4/23/2018 14:01		Sampling Point: Site 1	
Color	SM2120B	15		C.U.
Lab No: 18-2017-04 Sample ID: Site 2 - A Sample Type: Drinking Water	Time Collected: 4/23/2018 14:33		Sampling Point: Site 2	

ANALYSIS ANALYTE	REFERENCE METHOD	ANALYSIS RESULT	REPORTING LIMIT (RL)	UNITS
Iron (Fe)	EPA200.7	14.6	5.0	ug/L (ppb)
Manganese (Mn)	EPA200.7	28.2	5.0	ug/L (ppb)
Lab No: 18-2017-05	Sample ID: Site 2 - B Sample Type: Drinking Water	Time Collected: 4/23/2018 14:33	Sampling Point: Site 2	
Turbidity	SM 2130 B 20t	0.373	0.1	NTU
Lab No: 18-2017-06	Sample ID: Site 2 - C Sample Type: Drinking Water	Time Collected: 4/23/2018 14:34	Sampling Point: Site 2	
Color	SM2120B	5		C.U.
Lab No: 18-2017-07	Sample ID: Site 3 - A Sample Type: Drinking Water	Time Collected: 4/23/2018 14:55	Sampling Point: Site 3	
Iron (Fe)	EPA200.7	34.1	5.0	ug/L (ppb)
Manganese (Mn)	EPA200.7	81.5	5.0	ug/L (ppb)
Lab No: 18-2017-08	Sample ID: Site 3 - B Sample Type: Drinking Water	Time Collected: 4/23/2018 14:55	Sampling Point: Site 3	
Turbidity	SM 2130 B 20t	1.21	0.1	NTU
Lab No: 18-2017-09	Sample ID: Site 3 - C Sample Type: Drinking Water	Time Collected: 4/23/2018 14:57	Sampling Point: Site 3	

ANALYSIS ANALYTE	REFERENCE METHOD	ANALYSIS RESULT	REPORTING LIMIT (RL)	UNITS
Color	SM2120B	20		C.U.
Lab No: 18-2017-10	Sample ID: Site 4 - A Sample Type: Drinking Water	Time Collected: 4/23/2018 15:18	Sampling Point: Site 4	
Iron (Fe)	EPA200.7	13.8	5.0	ug/L (ppb)
Manganese (Mn)	EPA200.7	33.4	5.0	ug/L (ppb)
Lab No: 18-2017-11	Sample ID: Site 4 - B Sample Type: Drinking Water	Time Collected: 4/23/2018 15:18	Sampling Point: Site 4	
Turbidity	SM 2130 B 20t	0.474	0.1	NTU
Lab No: 18-2017-12	Sample ID: Site 4 - C Sample Type: Drinking Water	Time Collected: 4/23/2018 15:19	Sampling Point: Site 4	
Color	SM2120B	5		C.U.
Lab No: 18-2017-13	Sample ID: Site 5 - A Sample Type: Drinking Water	Time Collected: 4/23/2018 15:37	Sampling Point: Site 5	
Iron (Fe)	EPA200.7	13.1	5.0	ug/L (ppb)
Manganese (Mn)	EPA200.7	27.1	5.0	ug/L (ppb)
Lab No: 18-2017-14	Sample ID: Site 5 - B Sample Type: Drinking Water	Time Collected: 4/23/2018 15:37	Sampling Point: Site 5	

ANALYSIS ANALYTE	REFERENCE METHOD	ANALYSIS RESULT	REPORTING LIMIT (RL)	UNITS
Turbidity	SM 2130 B 20t	0.383	0.1	NTU
Lab No: 18-2017-15	Sample ID: Site 5 - C Sample Type: Drinking Water	Time Collected: 4/23/2018 15:38	Sampling Point: Site 5	
Color	SM2120B	10		C.U.
Lab No: 18-2017-16	Sample ID: Site 6 - A Sample Type: Drinking Water	Time Collected: 4/23/2018 15:55	Sampling Point: Site 6	
Iron (Fe)	EPA200.7	18.4	5.0	ug/L (ppb)
Manganese (Mn)	EPA200.7	53.5	5.0	ug/L (ppb)
Lab No: 18-2017-17	Sample ID: Site 6 - B Sample Type: Drinking Water	Time Collected: 4/23/2018 15:55	Sampling Point: Site 6	
Turbidity	SM 2130 B 20t	0.615	0.1	NTU
Lab No: 18-2017-18	Sample ID: Site 6 - C Sample Type: Drinking Water	Time Collected: 4/23/2018 15:56	Sampling Point: Site 6	
Color	SM2120B	15		C.U.
Lab No: 18-2017-19	Sample ID: Site 7 - A Sample Type: Drinking Water	Time Collected: 4/23/2018 16:13	Sampling Point: Site 7	

ANALYSIS ANALYTE	REFERENCE METHOD	ANALYSIS RESULT	REPORTING LIMIT (RL)	UNITS
Iron (Fe)	EPA200.7	19.4	5.0	ug/L (ppb)
Manganese (Mn)	EPA200.7	59.6	5.0	ug/L (ppb)
Lab No: 18-2017-20	Sample ID: Site 7 - B Sample Type: Drinking Water	Time Collected: 4/23/2018 16:13	Sampling Point: Site 7	
Turbidity	SM 2130 B 20t	0.855	0.1	NTU
Lab No: 18-2017-21	Sample ID: Site 7 - C Sample Type: Drinking Water	Time Collected: 4/23/2017 16:14	Sampling Point: Site 7	
Color	SM2120B	10		C.U.
Lab No: 18-2017-22	Sample ID: Site 8 - A Sample Type: Drinking Water	Time Collected: 4/23/2018 16:32	Sampling Point: Site 8	
Iron (Fe)	EPA200.7	100	5.0	ug/L (ppb)
Manganese (Mn)	EPA200.7	185	5.0	ug/L (ppb)
Lab No: 18-2017-23	Sample ID: Site 8 - B Sample Type: Drinking Water	Time Collected: 4/23/2018 16:32	Sampling Point: Site 8	
Turbidity	SM 2130 B 20t	2.21	0.1	NTU
Lab No: 18-2017-24	Sample ID: Site 8 - C Sample Type: Drinking Water	Time Collected: 4/23/2018 16:33	Sampling Point: Site 8	

ANALYSIS ANALYTE	REFERENCE METHOD	ANALYSIS RESULT	REPORTING LIMIT (RL)	UNITS
Color	SM2120B	17.5		C.U.

APPENDIX 7. DISTRIBUTION SYSTEM GENERAL PHYSICAL MONITORING SUMMARY (JANUARY 2010 TO MAY 2018)

SATIVA LACWD - General Physical Results

2018	730 139th STREET			2016 LUCIEN STREET			13122 LARGO STREET			2315 BLISS STREET			5th week sample		
	Color	Odor	Turbidity	Color	Odor	Turbidity	Color	Odor	Turbidity	Color	Odor	Turbidity			
JANUARY	5*	1	0.3	5	1	0.5	<3	1	0.1	<3	1	0.2	7.5	2	0.4
FEBRUARY	5	1	0.3	**15**	2	0.5	<3	1	0.4	<3	1	0.3			
MARCH	5	1	0.4	<3	1	<0.1	<3	1	0.4	5	1	0.3			
APRIL	5	2	0.6	10	1	0.6	<3	2	0.4	7.5	1	0.8			
MAY															

2017	730 139th STREET			2016 LUCIEN STREET			13122 LARGO STREET			2315 BLISS STREET			5th week sample		
	Color	Odor	Turbidity	Color	Odor	Turbidity	Color	Odor	Turbidity	Color	Odor	Turbidity			
JANUARY	<3*	1	0.9	<3	1	0.2	<3	1	<0.1	<3	1	<0.1	<3	1	0.2
FEBRUARY	<3	1	0.1	<3	1	0.3	<3	1	0.2	<3	1	0.1			
MARCH	**50**	1	**17**	5	1	0.3	<3	1	0.3	<3	1	0.2			
APRIL	5	1	0.4	7.5	1	0.3	<3	1	<0.1	<3	1	0.3			
MAY	<3	1	0.2	<3*	1	0.3	<3	1	<0.1	<3	1	0.1	<3	1	0.2
JUNE	5	2	0.3	5*	1	0.3	<3	1	0.1	<3	1	<0.1	<3	1	0.2
JULY	<3	1	0.1	<3	1	0.3	<3	1	0.3	<3	1	0.3			
AUGUST	**15**	1	2.5	10	2	0.3	5*	2	0.3	5	2	0.2	<3	1	0.3
SEPTEMBER	5	**3**	0.4	<3	1	<0.1	5	1	0.4	<3	1	1.0			
OCTOBER	<3	1	0.3	<3	1	0.3	<3	2	0.2	5*	1	0.3	<3	1	<0.1
NOVEMBER	7.5	2	1.6	<3	1	<0.1	<3	1	0.2	**50**	1	**4.7**			

DECEMBER	5	1	0.5	75	1	0.4	5	2	0.1	<3	1	0.2		

2016	730 139th STREET			2016 LUCIEN STREET			13122 LARGO STREET			2315 BLISS STREET			5th week sample		
	Color	Odor	Turbidity	Color	Odor	Turbidity	Color	Odor	Turbidity	Color	Odor	Turbidity			
JANUARY	<3	1	0.3	<3	1	0.4	<3	1	0.2	75	1	1.1			
FEBRUARY	<3	1	<0.1	<3	1	<0.1	<3	1	<0.1	<3	1	<0.1			
MARCH	<3 *	1	<0.1	<3	1	<0.1	<3	1	<0.1	<3	1	0.5	<3	1	0.2
APRIL	<3	1	<0.1	<3	1	<0.1	<3	1	<0.1	<3	1	<0.1			
MAY	<3	1	<0.1	<3	1	<0.1	<3	1	0.2	<3	1	0.4			
JUNE	<3	1	<0.1	<3	1	0.2	<3	1	0.3	<3	1	0.3			
JULY	<3	1	<0.1	<3	1	0.4	<3	1	0.3	<3	1	0.6			
AUGUST	<3	1	0.3	<3	1	<0.1	<3*	1	<0.1	<3	3	0.2	<3	1	<0.1
SEPTEMBER	<3	1	<0.1	<3	1	<0.1	<3	1	<0.1	<3	1	<0.1			
OCTOBER	<3	1	0.2	<3	1	<0.1	<3	1	<0.1	<3	1	<0.1			
NOVEMBER	<3	1	**2.4**	<3	1	0.2	<3	1	0.2	<3*	1	0.2	<3	1	<0.1
DECEMBER	<3	1	0.9	<3	1	<0.1	<3	1	<0.1	<3	1	<0.1			

2015	730 139th STREET			2016 LUCIEN STREET			13122 LARGO STREET			2315 BLISS STREET			5th week sample
	Color	Odor	Turbidity	Color	Odor	Turbidity	Color	Odor	Turbidity	Color	Odor	Turbidity	
JANUARY	<3	1	<0.1	<3	1	<0.1	<3	1	<0.1	<3	1	<0.1	
FEBRUARY	<3	1	<0.1	<3	1	<0.1	<3	1	0.3	<3	1	<0.1	
MARCH	<3	1	0.2	<3	1	<0.1	<3	1	0.2	<3	1	0.1	

APRIL	<3	1	<0.1	<3 *	1	<0.1	<3	1	0.3	<3	1	0.1	<3	1	0.7
MAY	<3	1	<0.1	<3	1	<0.1	<3	1	0.3	<3	1	0.3			
JUNE	<3	1	<0.1	5	1	0.4	<3	1	0.3	<3	1	2.9			
JULY	<3	1	0.2	<3	1	0.7	<3	1	0.2	<3	1	0.1			
AUGUST	not sampled			<3	1	<0.1	<3	1	<0.1	<3	1	<0.1			
SEPTEMBER	<3 *	1	0.3	<3	1	0.7	not sampled			<3	1	0.2	<3	1	0.6
OCTOBER	not sampled			<3	1	0.2	<3	1	0.2	<3	1	0.2			
NOVEMBER	<3 *	1	<0.1	<3	1	0.8	<3	1	0.2	not sampled			<3	1	<0.1
DECEMBER	<3	1	0.3	<3	1	0.2	<3	1	<0.1	<3 *	1	<0.1	<3	1	<0.1

2014	730 139th STREET			2016 LUCIEN STREET			13122 LARGO STREET			2315 BLISS STREET					
	Color	Odor	Turbidity	Color	Odor	Turbidity	Color	Odor	Turbidity	Color	Odor	Turbidity	5th week sample		
JANUARY	<3	1	0.3	<3	1	<0.1	<3	1	<0.1	<3	1	0.2			
FEBRUARY	not sampled			<3	1	<0.1	<3 *	1	<0.1	<3	1	1.5	<3	1	<0.1
MARCH	not sampled			<3	1	<0.1	<3	1	<0.1	<3 *	1	<0.1	<3	1	0.3
APRIL	<3 *	1	0.1	<3	1	<0.1	<3	1	0.2	<3	1	<0.1	<3	1	<0.1
MAY	not sampled			<3	1	<0.1	<3	1	<0.1	<3	1	<0.1			
JUNE	<3	1	<0.1	<3	1	<0.1	<3	1	0.1	<3	1	0.1			
JULY	<3 *	1	<0.1	<3	1	0.2	<3	1	0.2	<3	1	<0.1	<3	1	0.2
AUGUST	<3	1	<0.1	<3	1	<0.1	<3	1	0.1	<3	1	<0.1			
SEPTEMBER	not sampled			<3 *	1	0.2	<3	1	0.3	<3	1	0.2	<3	1	0.2
OCTOBER	<3 *	1	0.1	<3	1	<0.1	<3	1	<0.1	<3	1	<0.1	<3	1	<0.1
NOVEMBER	<3	1	<0.1	<3	1	<0.1	<3	1	<0.1	<3	1	<0.1			

DECEMBER	<3	1	0.2	<3 *	1	<0.1	<3	1	<0.1	<3	1	<0.1	<3	1	<0.1

Summary by range:

	2013			2012			2011			2010		
	Color	Odor	Turbidity	Color	Odor	Turbidity	Color	Odor	Turbidity	Color	Odor	Turbidity
JANUARY	<3	1	0.1	<3	1	<0.1-0.3	<3	1	0.1	<3	1	0.2-0.3
FEBRUARY	<3	1	<0.1	<3	1	<0.1-0.3	<3	1	<0.1	<3	1	0.3
MARCH	<3	1	0.1	<3	1	<0.1-0.4	<3	1	0.1	15	1	3.4
APRIL	<3	1	0.3	<3	1	<0.1	<3	1	<0.1	<3	1	0.5
MAY	<3	1	0.1-0.2	<3	1	<0.1	<3	1	0.1	<3	1	0.9
JUNE	<3	1	0.1-0.2	<3	1	<0.1-0.2	<3	1	<0.1	<3	1	0.2
JULY	<3	1	0.1-0.2	<3	1	<0.1-0.2	<3	1	0.3	<3	1	<0.1
AUGUST	<3	1	<0.1-0.4	<3	1	<0.1-0.2	<3	1	0.2	<3	1	0.1
SEPTEMBER	<3	1	0.1-0.6	<3	1	<0.1	<3	1	0.1	<3	1	0.1
OCTOBER	<3	1	<0.1-0.7	<3	1	<0.1-0.4	<3	1	0.1			
NOVEMBER	<3	1	0.1-0.4	<3	1	<0.1-0.2	<3	1	<0.1	<3	1	0.1
DECEMBER	<3	1	<0.1-0.4	<3	1	<0.1-0.2	<3	1	0.1	<3	1	<0.1

APPENDIX 8. SUMMARY OF CUSTOMER COMPLAINTS FROM APRIL 11, 2018 TO MAY 2, 2018

Brown Water Tracking

2310 E Stockwell St	Brown Water	4/11/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
2144 E Oris St	Brown Water	4/19/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
2152 Oris St	Brown Water	4/19/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
13702 S Willowbrook Ave	Brown Water	4/19/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
2128 E Stockwell	Brown Water	4/19/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
2104 E Wayside	Brown Water	4/24/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
2010 E Bliss	Brown Water	4/25/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator Inspected hose bib and advised customer to run water inside home until it cleared up
2410 E Bliss	Brown Water	4/27/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
2143 E Lucien St	Brown Water	5/1/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until it cleared up
2083 E Hatchway St	Brown Water	5/2/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until it cleared up

APPENDIX 9. REVISED CUSTOMER COMPLAINT SUMMARY FOR MAY 2 TO MAY 23, 2018

SATIVA LOS ANGELES COUNTY WATER DISTRICT

Brown Water Calls Reported from May 11, 2018 - May 23, 2018

1	2083 E Hatchway St	Brown Water	5/2/18	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Scheduled to receive (2) free cases of bottled water
2	2128 E Stockwell	Brown Water	5/2/18	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Scheduled to receive (2) free cases of bottled water
3	2301 E Stockwell St	Brown Water	5/9/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Scheduled to receive (2) free cases of bottled water
4	2143 E Nord St	Brown Water	5/9/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Scheduled to receive (2) free cases of bottled water
5	2108 E Knopf St	Brown Water	5/9/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Scheduled to receive (2) free cases of bottled water
6	13211 S Largo	Brown Water	5/9/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Scheduled to receive (2) free cases of bottled water
7	2143 E Piru St	Brown Water	5/9/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Scheduled to receive (2) free cases of bottled water
8	13416 S Willowbrook Ave	Brown Water	5/10/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Scheduled to receive (2) free cases of bottled water
9	13211 S Largo	Brown Water	5/10/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Scheduled to receive (2) free cases of bottled water
10	2152 E Shauer St	Brown Water	5/10/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Scheduled to receive (2) free cases of bottled water
11	2033 E Hatchway St	Brown Water	5/15/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Scheduled to receive (2) free cases of bottled water

12	13206 S Largo	Brown Water	5/15/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Scheduled to receive (2) free cases of bottled water
13	2060 E Lucien St	Brown Water	5/17/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Customer received 2 free cases of water as a courtesy.
14	710 W 138th St	Brown Water	5/17/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Customer received 2 free cases of water as a courtesy.
15	709 W 138th St	Brown Water	5/17/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Customer received 2 free cases of water as a courtesy.
16	13511 S Willowbrook Ave	Brown Water	5/17/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Customer received 2 free cases of water as a courtesy.
17	2208 E Oris St	Brown Water	5/17/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Customer received 2 free cases of water as a courtesy.
18	728 W 138th St	Brown Water	5/17/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Customer received 2 free cases of water as a courtesy.
19	711 W 138th St	Brown Water	5/17/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Customer received 2 free cases of water as a courtesy.
20	2104 E Oris St	Brown Water	5/17/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Scheduled to receive (2) free cases of bottled water
21	2019 E Stockwell St	Brown Water	5/17/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Scheduled to receive (2) free cases of bottled water
22	2258 E Stockwell St	Brown Water	5/17/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Scheduled to receive (2) free cases of bottled water
23	2060 E Piru St	Brown Water	5/17/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Customer received 2 free cases of water as a courtesy.
24	2153 E Nord St	Brown Water	5/17/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Customer received 2 free cases of water as a courtesy.
25	2114 E Oris St	Brown Water	5/17/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Customer received 2 free cases of water as a courtesy.

26	742 W 138th St	Brown Water	5/17/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Customer received 2 free cases of water as a courtesy.
27	2028 E Hatchway St	Brown Water	5/17/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Customer received 2 free cases of water as a courtesy.
28	724 W 138th St	Brown Water	5/18/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Customer received 2 free cases of water as a courtesy.
29	2056 E Piru St.	Brown Water	5/18/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Customer received 2 free cases of water as a courtesy.
30	2152 E Oris St	Brown Water	5/21/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Customer received 2 free cases of water as a courtesy.
31	2221 E Stockwell St	Brown Water	5/21/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Customer received 2 free cases of water as a courtesy.
32	2228 E Oris St	Brown Water	5/22/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Customer received 2 free cases of water as a courtesy.
33	2070 E Oris St	Brown Water	5/22/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Customer received 2 free cases of water as a courtesy.
34	2244 E Stockwell	Brown Water	5/23/2018	Samples taken and collected from home, hose bib, and nearest sample station. Water Operator inspected hose bib and advised customer to run water inside home until water clears.	Customer received 2 free cases of water as a courtesy.

APPENDIX 10: QUARTERLY PROGRESS REPORT FORM

Water System: Sativa Los Angeles County Water District	Water System No: 1910147
Compliance Order No: 04_22_18R_002	Violations: (1) Distribution System Physical Water Quality and (2) California Waterworks Standards
Calendar Quarter:	Date:

This form should be prepared and signed by Sativa Los Angeles County Water District personnel with appropriate authority to implement the directives of the Compliance Order and the Corrective Action Plan. Please attach additional sheets as necessary. The quarterly progress report must be submitted by the 10th day of each subsequent quarter, to the Division of Drinking Water, Angeles District Office to the following email address: DDWRegion4@waterboards.ca.gov titled appropriately.

Summary of Compliance Plan:

Tasks completed in the reporting quarter:

Tasks remaining to complete:

Anticipated compliance date:

Printed Name **Signature**

Title **Date**

APPENDIX 11 – NOTIFICATION OF RECEIPT FORM

Compliance Order Number: 04_22_18R_002

Name of Water System: Sativa Los Angeles County Water District

System Number: 1910147

Certification

I certify that I am an authorized representative of the Sativa Los Angeles County Water District and that Compliance Order No. 04_22_18R_002 was received on _____. Further I certify that the Order has been reviewed by the appropriate management staff of the Sativa Los Angeles County Water District and it is clearly understood that Compliance Order No. 04_22_18R_002 contains legally enforceable directives with specific due dates.

_____ _____

Signature of Water System Representative Date

THIS FORM MUST BE COMPLETED AND RETURNED TO THE STATE WATER BOARD, DIVISION OF DRINKING WATER, NO LATER THAN June 15, 2018

Disclosure: Be advised that the California Health and Safety Code, Sections 116725 and 116730 state that any person who knowingly makes any false statement on any report or document submitted for the purpose of compliance with the Safe Drinking Water Act may be liable for, respectively, a civil penalty not to exceed five thousand dollars ($5,000) for each separate violation or, for continuing violations, for each day that violation continues, or be punished by a fine of not more than $25,000 for each day of violation, or by imprisonment in the county jail not to exceed one year, or by both the fine and imprisonment.

Engineering Report

For Consideration of Full Permit Revision for the
Los Angeles County Public Works
Sativa Water System

Serving Portions of the City of Compton and
Willowbrook, an Unincorporated Area of Los Angeles County

December 23, 2020

Prepared By:

[redacted]
Ofelia Oracion
Sanitary Engineer, Angeles District

Approved By:

Shu-Fang Orr, P.E.,
District Engineer, Angeles District

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1. NTRODUCTION

1.1. Purpose of Report

The Division of Drinking Water (hereinafter, Division) of the State Water Resources Control Board (hereinafter, State Water Board) has initiated the investigation for issuing a new domestic water supply permit to the Los Angeles County (hereinafter, LA County) Public Works (hereinafter, PW) - Sativa Water System, System No. 1910147. The LA County PW - Sativa Water System was formerly the Sativa Los Angeles County Water District (hereinafter, SLACWD). On February 13, 2019, the Local Agency Formation Commission for the County of Los Angeles (hereinafter, LAFCO) approved dissolution of the SLACWD and appointed the LA County as the successor agency for the water district. LAFCO recorded the dissolution on March 19, 2019 and the LA County has since become the legal owner of the SLACWD (Appendix A). LA County PW now manages and operates the water system. A complete evaluation of the technical, managerial, and financial (TMF) capacities of the LA County PW – Sativa Water System was performed by the Division based on information provided by LA County PW and available data on file with the Division. Attached to this report is the completed TMF Assessment Review Form (Appendix B).

On August 24, 2020, LA County PW submitted to the Division a permit amendment application to change the gas chlorination systems at Wells 3 and 5 of the Sativa Water System to the 12.5 percent sodium hypochlorite chlorination systems (Appendix C). This proposal is incorporated into this full permit investigation for the change of ownership. All changes made to the water system facilities since the last issuance of full permit in August 2012, including the improvements made by the LA County PW, are reviewed during this permit investigation.

This report will document the change of ownership of the water system from SLACWD to LA County PW, the engineering review and evaluation of the water supply system facilities as they currently exist, outline the existing deficiencies and the needed improvements, including the water system's compliance status with the directives of Compliance Order No. 04_22_18R_002 issued by the Division to SLACWD on June 1, 2018, the reviews of the specifications and facilities layouts of the new sodium hypochlorite chlorination systems at Wells 3 and 5 and to make recommendations regarding the issuance of a domestic water supply permit to the LA County PW – Sativa Water System.

1.2. Background Information

The LA County PW - Sativa Water System is being operated under the revised full domestic water supply permit (Water Supply Permit No. 04-22-12P-009) issued to SLACWD on August 30, 2012 and the permit amendment issued to the LA County PW – Sativa Water System for the 8-inch one-way metered connection with the Liberty Utilities – Compton/Willowbrook Water System (hereinafter, Liberty Utilities) on July 11, 2019.

From November 1, 2018 to March 19, 2019, the LA County served as the Administrator appointed by the State Water Board for the SLACWD water system. On March 19, 2019, LAFCO appointed the LA County as the successor agency for SLACWD – now the LA County PW - Sativa Water System.

The dissolution of SLACWD was initiated after a brown water incident occurred in April 2018. Many complaints were received by SLACWD not only because of issues related to the water quality but also issues on how the water system was managed. These issues were brought to the LA County Department of Public Health (DPH), then the State Water Board and LAFCO's attentions, and eventually to the media. Staff from the three agencies conducted investigations.

On June 1, 2018, the Division issued Compliance Order No. 04_22_18R_002 to SLACWD for the failure to provide its customers with a reliable and adequate supply of pure, wholesome, healthful, and potable water, and the failure to comply with the source capacity, minimum flushing velocity, and minimum pressure requirements of the California Waterworks Standards. Directive 3 of the compliance order directed SLACWD to prepare a Corrective Action Plan (CAP) identifying improvements to the water system to address source capacity deficiencies, the general physical water quality issues in the distribution system, fire flow deficiencies, and the infrastructure deficiencies hampering effective maintenance of the system, such as flushing activities. The SLACWD failed to provide an adequate CAP to address the deficiencies.

On July 11, 2018, LAFCO voted unanimously to begin the process of dissolving the SLACWD. LAFCO adopted Resolution No. 2018-00RMD that approved the proposed Commission-Initiated Resolution of Application for Dissolution of the SLACWD.

On October 31, 2018, the State Water Board issued Administrator Order No. 04_22_18R_003 to SLACWD pursuant to Assembly Bill 1577. In addition to the issues documented in Compliance Order No. 04_22_18R_002, this Order documented the serious technical and managerial capacity problems. The Order appointed LA County as the State Administrator for SLACWD and terminated SLACWD's Board of Directors. On November 1, 2018, the LA County PW representative assumed full administrative, managerial, and financial control of SLACWD.

On February 13, 2019, LAFCO approved Resolution No. 2019-02RMD, ordering dissolution of SLACWD. On March 19, 2019, LAFCO appointed the LA County as the successor agency for SLACWD. The LA County PW becomes the legal owner of the SLACWD and named the water system the Sativa Water System.

Since March 2019, the LA County PW has made many capital improvements to the water system's facilities. The following are the improvements that have been completed or undergoing:

1. On July 11, 2019, Permit Amendment No. 1910147PA-001 was issued by the Division to the LA County PW for the Sativa Water System. To address the source capacity deficiency, an 8-inch one-way metered connection with Liberty

Utilities-Compton/Willowbrook water system was added as an active source. The connection can supply up to 1,500 gallons per minute (gpm) of water.

2. In September 2019, the Paulsen Avenue Pipeline Improvement was completed. An 8-inch pipeline was constructed along Paulsen Avenue from Hatchway to 139th Street. The new pipeline delivers water from the Liberty Utilities Interconnection to the southern part of the Sativa Water System's service area.

3. In June 2020, the LA County PW completed the installation of a new Supervisory Control and Data Acquisition System (SCADA).

4. In July 2020, the LA County PW completed major rehabilitation works on Well 5. The well had been removed from service in August 2019. This well is currently the main source of supply for the Sativa Water System.

5. In July 2020, the Lucien Waterline Project was completed. An 8-inch pipeline was constructed along Lucien Street from South Oleander Avenue to South Largo Avenue. The new pipeline delivers water to the east side of the Sativa Water System's service area and addresses the fire flow deficiencies in that area.

6. In August 2020, the LA County PW submitted a permit amendment application to the Division to replace the existing gas chlorination systems for Wells 3 and 5 with the 12.5 percent sodium hypochlorite chlorination systems. This project will be incorporated into this permit investigation.

Other urgent infrastructure improvement projects identified by LA County PW, but still awaiting funding, are the following:

1. Pipeline Interconnects. This project will eliminate some critical dead-ends in the distribution system.

2. Manganese Wellhead Treatment. The project will equip Well 5 with manganese treatment. The well withdraws water from aquifers with elevated manganese levels. Manganese concentration in the water produced by the well, even after the rehabilitation works, is still near the secondary MCL and causing water quality complaints.

1.3. Brief Description of Sativa Water System

The Sativa Water System is located approximately 11 miles south of the downtown Los Angeles. The system's service area lies within the boundary of the Central Water Basin and encompasses about 0.25 square mile area. It serves a portion of the City of Compton and portion of Willowbrook, an unincorporated area of the Los Angeles County.

The water system has two active groundwater wells (Wells 3 and 5), one active one-way connection with Liberty Utilities and one emergency connection with the City of Compton. The system has one inactive well (Well 2). The system also has four hydro-pneumatic tanks. The 10,000-gallon capacity hydro-pneumatic tank at the Well 2 site has been disconnected from the distribution system. The Well 3 site has two 10,000-gallon capacity hydro-pneumatic tanks, operating simultaneously. The Well 5 site has one 10,000-gallon capacity hydro-pneumatic tank. Water produced by the wells is pumped to the hydro-pneumatic tanks first before being distributed to the system. Wells 3 and 5 are each equipped with a gas chlorination system. The water served by the Liberty Utilities contains free chlorine most of the time.

The distribution system has only one pressure-zone, with eight miles of transmission and distribution pipelines consisting of asbestos-cement, steel, ductile iron, cast iron and polyvinylchloride pipes. The distribution system has no booster station and no storage tank. All service connections are not metered.

The LA County PW has proposed to remove the gas chlorination systems at Well 3 and Well 5 sites and replaced them with the sodium hypochlorite chlorination systems. The evaluation of the proposed sodium hypochlorite chlorination systems for both wells will be documented in this report.

1.4. Enforcement History

Since November 1, 2018, when the operation and management of the water system was turned over to LA County, there has been no enforcement actions issued against the water system.

On June 1, 2018, the Division issued Compliance Order No. 04-22-18R-002 to SLACWD for the failure to provide its customers with a reliable and adequate supply of pure, wholesome, healthful, and potable water. Specifically, the water system violated the California Waterworks Standards for the failure to comply with the source capacity, minimum flushing velocity, and minimum pressure requirements.

On July 23, 2018, the Division issued a warning letter to SLACWD, after discovering the SLACWD had posted on its website a file entitled “Sativa Los Angeles County Water District System Improvements, June 2018”, a Notice Inviting Bids for the “Paulsen Avenue Water Main Phase 2- Project No. 106-WTR”, and a meeting agenda showing the interconnection and another Paulsen Avenue Water Main Project (Phase 1). SLACWD was warned that they must comply with Directives 3, 4 and 5 of the Compliance Order and not to proceed with projects without first demonstrating to the Division that the projects would help solve the problems listed in Directive 3 and comply with the California Waterworks Standards. As documented in the Administrative Order issued to SLACWD on October 31, 2019, the plans and specifications for both Paulsen Avenue Water Main projects and the Corrective Action Plan submitted by SLACWD were incomplete, contained various errors, and inadequate to demonstrate compliance with the California Waterworks Standards.

The LA County PW has been in communications with the Division and identified corrective actions to bring the Sativa Water System back to compliance. The LA County PW's current and future improvement projects for the Sativa Water System are discussed in this report.

1.5. Service Area

The Sativa Water System's service area is bounded by Wayside Street and 131st Street on the north, Oris Street and 139th Street on the south, Mona Boulevard on the east and Paulsen Street and Wilmington Avenue on the west. The boundaries of the service area have not changed since the original formation in 1938. The service area is a residential community composed of single-family houses. The terrain is basically flat. The service area map is appended in Appendix D. The schematic of the water supply system is appended in Appendix E.

1.6. Consumer and Production Data

The Sativa Water System serves a permanent residential population of 6,837 through 1,643 active service connections. Except for one commercial connection, all service connections are classified as residential connections and none of the connections is metered. There are about 57 fire hydrants and four blow-off assemblies strategically located in the distribution system. Table 1 summarizes the population served and service connections records for the last 10 years.

Table 1: Historical Water Production Profile (2010-2019)

Year	Served Population		Water Production (MG)			MDD		Maximum Month	
	Resident	Service Conn.	Produced	Purchased	Total	MG	Date (M/D)	Flow (MG)	Month
2010	6813	1488	214.08	0	214.08	1.5	NR	20.83	July
2011	6813	1631	209.00	0	209.00	1.3	NR	20.06	July
2012	6813	1631	207.22	0	207.22	0.52	10/23	19.41	October
2013	6813	1631	189.52	0	189.52	0.94	7/5	17.98	July
2014	6837	1637	165.58	0	165.58	NR	NR	16.81	July
2015	6837	1640	152.21	0	152.51	0.88	6/13	15.02	March
2016	6837	1643	153.99	0	153.99	0.98	6/20	18.13	June
2017	6837	1643	156.52	0	156.52	0.65	10/24	14.91	July
2018	6837	1643	167.10	0	167.10	0.65	9/15	17.23	July
2019	6837	1643	93.77	55.72[1]	147.49	0.65	7/12	14.90	August

Source: 2012 – 2019 Electronic Annual Report to the Drinking Water Program (EAR); MG – Million Gallons
MDD – Maximum Day Demand; M/D – Month/Day; NR – No Record
[1] Through Liberty Utilities Interconnection

1.7. Sources of Information

All information gathered for this report was obtained from the Division's files, discussions with and documents provided by the LA County PW staff, the review of the

water system's files and records, and during the on-site field inspection conducted by Ofelia Oracion, Sanitary Engineer with the Angeles District on December 3, 2019. The investigation, analysis and preparation of this report were undertaken by Ms. Oracion under the supervision of Shu-Fang Orr, P.E., Angeles District Engineer.

2. INVESTIGATION AND FINDING

2.1. SOURCES OF SUPPLY

Sources of supply for the Sativa Water System's domestic water distribution system include groundwater from two active wells, Wells 3 and 5, an active interconnection with the Liberty Utilities – Compton/Willowbrook water system, and one emergency interconnection with the City of Compton.

The LA County WP utilizes Well 5 as the primary source and the Liberty Utilities Interconnection as the secondary source. Well 5 is running continuously to maintain 52 to 65 psi pressures in the distribution system. The Liberty Utilities Interconnection will be activated when the pressure in the distribution system falls below 52 psi. Well 3 serves as the backup source, in case Well 5 is out of service for regular maintenance or is in need of repairs. The City of Compton Interconnection will be used only during emergencies. Table 2 summarizes the Sativa Water System's water supply sources.

Table 2: Water Supply Sources

Source	Status	Primary Station (PS) Code	Treatment	Capacity (gpm[1])	Comments
Well 3	Active	1910147-002	Gas chlorination for disinfection; The gas chlorination system will be replaced with a sodium hypochlorite chlorination system.[2]	424[3]	The well is 76 years old and has no annular seal. It has history of sand pumping. PCE is detected in the water. 1,4-dioxane is above the notification level of 1 µg/L, but lower than the response level of 35 µg/L.
Well 5[4]	Active	1910147-005	Gas chlorination for disinfection; The gas chlorination system will be replaced with a sodium hypochlorite chlorination system.[2]	650[5]	Newly rehabilitated. Water produced from the well contains PCE, 1,4-dioxane, and elevated level of manganese.
Total Capacity of Active Wells				**1,074**	

Source	Status	Primary Station (PS) Code	Treatment	Capacity (gpm[1])	Comments
Interconnection with the Liberty Utilities – one way	Active	1910147-010	Groundwater sources by hypochlorination or surface water purchased from the Metropolitan Water District of Southern California, which is treated by conventional filtration, chloramination and fluoridation. Fluoridation is also provided to one of the Liberty Utilities wells. Liberty Utilities will rely on chlorinated well water majority of the time, but plan to switch to 100 percent MWDSC water if groundwater sources are not adequate to meet system demand.	1,500	This inter-connection facility was permitted in July 2019.
Total Active Interconnection Capacity				**1,500**	
Interconnection with the City of Compton – one way	Emergency	1910147-009	Groundwater sources by hypochlorination; purchased surface water from the Metropolitan Water District of Southern California, which is treated by conventional filtration, chloramination and fluoridation. However, the City of Compton rarely utilizes the MWDSC interconnection.	900	Good condition
Total Emergency Interconnection Capacity				**900**	

[1] Gallon per minute
[2] Discussed in this report
[3] Maximum pump operating capacity based on the result of efficiency test conducted by Edison Company on September 10, 2020. The LA County PW has set this rate as Wells 3's maximum flow rate.
[4] The main source for the Sativa Water System.
[5] The maximum production rate set by LA County PW for Well 5. The maximum pumping rate tested on the pump by Edison Company on September 10, 2020 was 699 gpm with overall plant efficiency of 64.5 percent

2.1.1. Active Groundwater Wells

The Sativa Water System's groundwater sources extract water from the Central Groundwater Basin. The aquifers consist of Gage Aquifer (200 to 300 feet below ground surface (bgs), Hollydale Aquifer (450 to 500 feet bgs), Lynwood Aquifer (590 to 670 bgs), Silverado Aquifer (680 to 780 feet bgs), and Sunnyside Aquifer (820 to 1,000

feet bgs). The Water Replenishment District of Southern California (WRD) is responsible for management, monitoring, replenishment, and protection of groundwater in the Central Groundwater Basin. Based on WRD's water quality monitoring data, there are trichloroethylene (TCE) and tetrachloroethylene (PCE) plumes in the basin. Table 3 lists the water system's active groundwater sources and the construction information.

Table 3: Active Groundwater Source Construction Information

Source Name	Depth (feet)	Perforation Depths (feet)	Casing Diameter (inches)	Annular Seal
Well 3	316	236 to 247; 264 to 281	14	None
Well 5	510[1]	200 to 240; 380 to 500[2]	Original -16 With 12 inches Stainless Steel Liner to 510 feet now	The annular seal between the original casing and the borehole extended to 180 feet bgs. The annular space between the original 16-inch casing and the new 12-inch liner was filled with glass beads from 180 to 510 feet bgs and with bentonite cement from the ground surface to 180 feet bgs.

[1] Depth of the well after rehabilitation. It was 910 feet when drilled in 1993.
[2] This well has four perforations originally: the first perforation from the top was from 200 to 240 bgs, the second perforation was from 380 to 510 bgs, the third perforation was from 550 to 670 feet bgs, and the fourth perforation was from 750 to 890 feet bgs. The third and the fourth perforations were abandoned after the 2020 well rehabilitation.

The Southern California Edison Company conducted the pump efficiency tests for Wells 3 and 5 on September 10, 2020. The results of the tests indicate the efficiencies of these pumps are acceptable. The results of the tests are appended in Appendix F.

Well 3: PS Code 1910147-002

Well 3 is housed in a concrete block building located on a 50 by 100 feet lot. The lot is securely fenced with wrought iron fence and with barb wire on the top of the fence and locked gate. The building is lighted and ventilated. The well site is properly maintained and equipped with a burglar monitoring system.

The well is 76 years old. It was drilled in 1944 and has history of sand pumping. In 2016, the well was removed from service because of excessive sands in the well water. According to the former SLACWD staff, soil materials around the deeper portion of the well had collapsed and entered the casings. To address the issue, the pumping equipment was replaced with a lower horsepower pump and the length of the suction pipe was shorten. No sand pumping issue has been reported since. The LA County PW operates this well once a week, on Mondays, for one hour to make sure the well is operable when needed. The well serves as a backup source. Due to other higher priority projects, the LA County PW has no plan to rehabilitate Well 3 at this time.

Well 3 has a 14-inch diameter 10-gage steel casing, with the highest perforation at 236 feet bgs. As observed during well drilling, there are three impervious clay layers above the first perforation. The thicknesses of impervious layers are 21 feet, 15 feet and 152 feet at depths from 36 to 57 feet bgs, 60 to 75 feet bgs and 84 to 236 feet bgs, respectively. The casing is perforated from 236 to 247 feet bgs and from 264 to 281 feet bgs. The well has no annular seal. A copy of the well log is on file with the Division

The well is equipped with a 50 Hp Vertical Turbine (VT) pump and motor. The pump is oil lubricated, electrically powered, and may be set to control automatically by a pressure switch. The well is set to be run manually at this time. The operator can switch it back to automatic control mode when needed. The well is capable of pumping up to 424 gpm.

An air-relief vacuum breaker valve, flow meter, check valve and sampling tap are provided on the well's discharge line. The vent opening of the air-release vacuum breaker valve is screened. The sampling tap with a vacuum breaker is located between the wellhead and the check valve. The pump is adequately surface sealed at the base. The concrete flooring is raised up to the motor base. The flooring is gradually sloping away from the motor base. The well is equipped with a pump-to-waste line with a screen at the discharge pipe opening and an airgap. Water from Well 3 is chlorinated and pumped into a hydro-pneumatic tank. The well has no back-up power. The Well Data Sheet for Well 3 is appended in Appendix G.

In January 2001, a source water assessment was conducted for Well 3 by the Division staff using TurboSWAP. According to the source water assessment report, the PCA within Well 3's protection zones include water supply wells. Well 3 is approximately 1,950 feet west from Well 5 and approximately 2,600 feet northeast from the inactive well, Well 2. Well 3's PBE was considered moderate. The well is over 75 feet from the nearest sewer.

Well 5: PS Code 1910147-005

Well 5 is the newest well and the primary source for the Sativa Water System. The well was drilled in 1993 to a depth of 910 feet. Two impervious clay layers were observed during the drilling of this well. The impervious layers are located at depths from 60 to 80 feet bgs and from 120 to 200 feet bgs. The well has a 30-inch diameter conductor casing from ground surface to 50 feet bgs, and 16-inch diameter mild steel casings and screens. Prior to the recent well rehabilitation, the well had louvered screens from 200 to 240 feet and 380 to 510 feet bgs and wire-wrapped screen from 550 to 670 feet and 750 to 890 feet bgs. A copy of the well log is on file with the Division.

The well was initially producing about 3,000 gpm. However, the well's capacity has reduced substantially through the years. By 2019, the well's production rate decreased to about 500 gpm. The well is also producing water with elevated levels of manganese, exceeding the secondary MCL of 0.05 mg/L frequently. Compliance with manganese

MCL is based on the running annual average (RAA). The manganese RAAs had been at or near the MCL, but not exceeding the MCL.

In August 2019, LA County PW removed Well 5 from service for rehabilitation. The rehabilitation was completed in June 2020. During the period of rehabilitation, the Liberty Utilities Interconnection was utilized as the main source for the water system.

In September 2019, the LA County PW hired Pacific Surveys to conduct the video survey for Well 5. The video survey result shows that the screen casings from 200 to 510 feet bgs are slightly plugged up; and from 550 to 845 feet bgs, the screen casings are completely plugged up. The well casing is filled with hard soil materials at 845 feet bgs. The video camera was not able to reach the bottom of the well.

In November 2019, the Spinner Log and Mass Balance Analyses were performed to determine the quantities and qualities of water produce by the aquifers. The Spinner Log Analysis indicates higher production and higher velocity are observed from aquifers between 200 and 450 feet bgs. The Mass Balance Analysis indicates that manganese concentrations in the water from aquifers between 250 and 520 feet bgs are lower than the water from aquifers between 520 and 845 feet bgs. Manganese concentrations between 250 and 520 feet bgs and between 520 and 845 feet bgs ranged from 0.047 to 0.078 mg/L and from 0.36 to 0.38 mg/L, respectively.

In January 2020, the General Pump, Inc. started the construction to rehabilitate the well. The construction was completed in March 2020. The following modifications were made to the well:

- Abandoned approximately 390 feet of casings and screens in the lower section of the well from 520 feet to 910 feet bgs. The well was backfilled with pea gravel from 530 to 845 feet bgs, and the pea gravel was capped with bentonite pellets from 520 to 530 bgs.

- Provided the well with 12-inch stainless steel liner casings from ground surface to 510 feet bgs. The liner is composed of blank and screen casings. The wire-wrapped screen casings are located from 200 to 240 feet bgs and from 380 to 500 feet bgs. The bottom of the liner at 510 feet bgs is capped with stainless steel bull nose.

  The annular space between the original 16-inch casing and the new 12-inch liner was filled with glass beads from 180 to 510 feet bgs and with bentonite cement from the ground surface to 180 feet bgs. The space at the bottom of the well from 510 to 520 feet bgs was also filled with glass beads.

The Video Survey Reports, Spinner Log and Mass Balance Analyses, and As Built Well Liner Diagram are appended in Appendix H.

The LA County PW also installed a SCADA system and equipped the modified Well 5 with the following:

- Installed the new 100 horsepower variable frequency drive (VFD) pump and motor. The pumping equipment is water lubricated and electrically powered, and remotely controlled by the new SCADA system.

- Installed the new column, tubes, shaft, and suction pipe.

- Installed a water level transducer to monitor the static and pumping water levels via the new SCADA system.

- Replaced the dilapidated section of the discharge piping from the wellhead to the hydro-pneumatic tank with a new pipe.

The LA County PW currently operates Well 5 continuously for 24 hours a day, 7 days a week. The well is set to produce at the maximum flow rate of 650 gpm. Water from Well 5 is chlorinated and pumped through a 10,000-gallon hydropneumatic tank into the distribution system. The well has a manual switch that can accommodate a portable power generator. The Well 5 site is equipped with an 800 Hp diesel engine for the backup power.

An air-release vacuum breaker valve, flow meter, check valve and sampling tap are provided on the well's discharge line. The vent opening of the air-release vacuum breaker valve is screened. The sampling tap is located between the wellhead and check valve and equipped with a vacuum breaker. An adequate surface seal is provided at the base. The well has a pump-to-waste line and the end of the line is screened and provided with an airgap. The Well Data Sheet for the rehabilitated Well 5 along with the specifications for the new pumping unit and water level transducer are appended in Appendix I.

Well 5 is housed in a concrete block building located on a 50 by 100 feet lot. The lot is securely fenced with wrought iron fence and locked gate. The building is lighted and ventilated. The well site is properly maintained and equipped with a burglar monitoring system.

In January 2001, a source water assessment for Well 5 was conducted by the Division. According to the source water assessment report, the PCAs within Well 5's protection zones include water supply wells. Well 5 is approximately 1,350 feet south from Well 3 and approximately 800 feet northeast from inactive Well 2. Well 3, an active well, is located within 3,947 feet radius, Zone B5, from Well 5. Well 5's PBE was considered moderate. The well is approximately 75 feet from the nearest sewer. With the reduction in the production rate, the sizes of the well protection zones will be smaller than those calculated during the January 2001 assessment.

2.1.2. Inactive Groundwater Source

Well 2: PS Code 1910147-001 (Inactive)

Well 2 has been inactive since July 2017 and **cannot be utilized as a water supply source**. The well was removed from service in December 2015 due to the detection of *E. Coli*. The well is over 78 years old. It has elevated level of bacteriological growth and protozoa. The casing is corroded and has multiple holes in it. The portion of casing from 226 to 228 feet bgs appears to be collapsed. In addition, water from the well also contains elevated level of manganese and 1,4-dioxane exceeding the MCL of 0.05 mg/L and NL of 0.001 mg/L, respectively. In July 2017, the well was physically disconnected from the distribution system. The electrical power source was disconnected and the gate valve along the discharge line to the hydropneumatic tank was removed. A blind flange was installed on the discharge line.

The LA County PW must plan to destroy the well to prevent the well from becoming a conduit of groundwater contamination.

2.1.3. Active Interconnection

Liberty Utilities Interconnection (PS Code 1910147-010)

The Liberty Utilities Interconnection is situated at the southwestern side of the Sativa Water System in the corner of N. Paulsen Avenue and W. 137th Street. The one-way 8-inch metered interconnection is capable of delivering up to 1,500 gpm of water from Liberty Utilities at minimum pressure of around 52 psi. It is connected to Liberty Utilities' 12-inch water mains along W. 137th Street.

The interconnection consists of an 8-inch octave ultrasonic water meter and an 8-inch one-way pressure reducing/pressure sustaining Cla-Val valve. The Cla-Val has a check valve built-in feature to prevent backflow. It is housed inside a polymer concrete vault with torsion assist polymer concrete cover and padlock. The vault is installed below ground surface and located within the street right of way. Liberty Utilities maintains the interconnection. Liberty Utilities will conduct periodic testing of water meter to ensure water meter is measuring and recording within 5 percent error. The interconnection drawing and layout is attached with this report (Appendix J).

This interconnection serves as a temporary active water supply source for the Sativa Water System. Liberty Utilities will provide a reliable and uninterruptible source of water to the Sativa Water System, contingent upon meeting the conditions set forth in the Agreement. According to the Agreement, Liberty Utilities' obligation to supply water to the Sativa Water System is subject to the following conditions: (1) the availability of such water to Liberty Utilities; (2) the ability of both water systems' distribution facilities to deliver such water through the interconnection; and (3) Liberty Utilities' determination, at its sole discretion, that the supply of such water will not have an adverse economic

impact on, or result in the impairment of, or jeopardize Liberty Utilities' water system, its customers, or its commitments to third parties.

2.1.4. Emergency Interconnection

The Sativa Water System has a 6-inch one-way metered emergency connection with the City of Compton, with rated capacity of 900 gpm. This emergency connection is manually operated.

2.1.5. Adequacy of Supply

Section 64554, Title 22 of the CCR, California Waterworks Standards mandates a public water system to have the capacity to meet the system's maximum day demand (MDD) at all times. After well rehabilitation, Well 5 production has increased. The Sativa Water System has an instantaneous combined yield of approximately 1,074 gpm (1.55 MGD) from Wells 5 and 3, and 1,500 gpm (2.16 MGD) from Liberty Utilities interconnection. The highest daily usage recorded during the period from 2010 to 2019 was 1.5 MGD (in 2010, 1,041.66 gpm). Although on the paper, the combined production from Wells 5 and 3 is adequate to meet the MDD, Well 3 is in poor condition.

Section 64554 (a) (1) of the *California Waterworks Standards* states that "For systems with 1,000 or more service connections, the system shall be able to meet four hours of peak hourly demand (PHD) with source capacity, storage capacity, and/or emergency source connections". Using the peaking factor of 1.5, times the average hourly consumption during the maximum demand day (0.06 MG per hour), the estimated PHD is 0.09 MG. The amount of water needed to meet four hours of PHD is 0.36 MG. The combined capacities of the current active sources (Well 5, Well 3 and Liberty Utilities interconnection) can produce up to 0.62 MG in four hours. The capacities of the Sativa Water System's active sources are sufficient to meet the four hours of PHD.

It should be noted that the interconnection with Liberty Utilities is only a temporary active water supply source for the Sativa Water System. One of the conditions in the agreement with Liberty Utilities specifies that Liberty Utilities, at its sole discretion, can terminate the agreement if it determines that supplying water to the Sativa Water System will have an adverse economic impact on, or result in the impairment of, or jeopardize Liberty Utilities' water system, its customers, or its commitments to third parties. Liberty Utilities has recently requested to renegotiate the water rate with the LA County PW. In addition, the 12-inch pipeline along the Paulsen Avenue where the Sativa Water System connected to is part of the Liberty Utilities Water Main Improvement Project. Liberty Utilities agrees to let the Sativa Water System use this pipeline on a temporary basis. Liberty Utilities has indicated from the beginning that they will need to take this pipeline back when they have completed their system-wide improvement project.

In the event Liberty Utilities decides to terminate the agreement and cease supplying the Sativa Water System through the interconnection, the combined

capacity of Wells 5 and 3 is not adequate to meet the PHD. The Sativa Water System has no storage facility to provide reserve for emergency conditions. The emergency interconnection with the City of Compton can provide up to 0.22 MG in four hours. Without the Liberty Utilities Interconnection, the Sativa Water System has to rely upon this emergency interconnection to comply with the requirements of Section 64554 (a) (1), Title 22, CCR.

2.1.6. Recycled Water

There are no recycled water use sites within the Sativa Water System's service area

2.2. TREATMENT FACILITY

2.2.1. Chlorination Systems at Wells 3 and 5

For precautionary purposes, water produced by the groundwater wells is disinfected before entering the distribution system. The LA County PW has proposed to change the chlorination facilities at Wells 3 and 5 from gas chlorination systems to the sodium hypochlorite chlorination systems.

The Proposed Sodium Hypochlorite Chlorination Systems

Wells 3 and 5 will be equipped with identical sodium hypochlorination system. The LA County PW has proposed to utilize 12.5 percent sodium hypochlorite solution. These units will replace the existing gas chlorination systems for Wells 3 and 5.

The liquid chlorine will be fed by a Stenner SVP Series Digital Peristatic Metering Pump with a capacity of 17 gallons per day (0.71 gallons per hour) at maximum working pressure of 100 psi (6.9 bar). The pump tubes and valves are made of Santoprene materials. Santoprene is a registered trademark of Exxon Mobil Chemical Company and is NSF/ANSI Standard 61 certified. The specifications of Stenner SVP Series Digital Peristatic Metering Pump and NSF/ANSI Standard 61 certification for Santoprene are provided in Appendix K.

The chemical injection pumps are operated by a time relay that receives a signal from the well pump. When the well turns on, the injection pump relay switch closes to supply electrical power to the injection pump to start the flow of sodium hypochlorite solution. The injection point is at the wellhead discharge line prior to entering the hydro-pneumatic tank. When the well is turned off, the relay switch opens and disconnects the power supply, thus turning off the injection pump.

The sodium hypochlorite solution will be stored in a 50-gallon LMI Chemical Solution Tank with a spill containment scale. The tank is made of medium-density linear polyethylene with UV inhibitors and is an NSF/ANSI Standard 61 compliant product. The spill containment scale provides containment of chemical spill up to 66 gallons and weighs the amount of chemical leftover in the chemical solution tank. A digital display

equipment is connected to the scale and shows the weight of chemical solution in the tank. The data is then transmitted to the SCADA. A stock of 50-gallon chemical solution will be available on hand in each site. The specifications and NSF/ANSI Standard 61 certification for of LMI Chemical Solution Tank is appended in Appendix L.

Each site will be equipped with a HACH 17 chlorine analyzer. The analyzer measures free chlorine residual from the hydro-pneumatic tank effluent and transmits the information to the SCADA.

The chlorination system facilities will be installed inside the well house. The building is equipped with a burglar monitoring system. The well sites are properly secured with fences and locked gates.

The configuration of Disinfection Facility Layout, including the Chlorination Data Sheets for the proposed 12.5 sodium hypochlorite chlorination systems at Wells 3 and 5 are appended in Appendix M.

Operation of the Hypochlorination Systems

- Well 3

The hypochlorite injection rate at Well 3 will be manually adjusted. The goal is to have a minimum of 1.5 mg/L free chlorine residual at the hydro-pneumatic tank effluent, the entry point to the distribution system. The chlorine residual concentration at the hydro-pneumatic tank effluent will be measured continuously via the on-line chlorine analyzer. The analyzer is connected to the SCADA system. When chlorine residual is out of the targeted range, the operator will adjust the hypochlorite injection rate to meet the target.

- Well 5

The hypochlorite injection rate at Well 5 is automatically adjusted via the PLC for the well's VFD. The controls for the well's VFD are all local with Failsafe SCADA Off Commands for both the well and the chlorine injection pump. Similar with Well 3, the goal is to have a minimum of 1.5 mg/L free chlorine residual at the hydro-pneumatic tank effluent. The chlorine residual concentration at the hydro-pneumatic tank effluent will be measured continuously via the on-line chlorine analyzer. The data from the analyzer is then transmitted to the SCADA system. The chlorine residual is adjusted through the VFD speed loop. The speed of the motor is used to control the injection rate of the chlorine residual pump. The chlorine dosing is adjusted through the VFD speed analog loop settings. All analog data, system pressures, chlorine weight, chlorine residual, motor speed, and flow are reported back into the SCADA system and recorded.

Metering Pumps Capacity Evaluation

In addition to be able to meet the water system's minimum residual goal at the entry point to the distribution system, the metering pump should be sized to have the capacity to provide a minimum chlorine residual of 1.0 mg/L in the distribution system during an emergency, such as a significant rise in bacteriological count. The dosing capacity of at least 2 mg/L is recommended. As shown in the calculations below, the chlorine metering pumps for Wells 3 and 5 are adequately sized.

- Well 3 – 424 gpm (well's maximum production rate)

Maximum Chlorine Dose = (125,000 ppm x 17 gal/day) ÷ (424 gpm x1,440 min/day) = 3.48 mg/L

- Well 5 – 650 gpm (well's average production flow rate)

Maximum Chlorine Dose = (125,000 ppm x 17 gal/day) ÷ (650 gpm x1,440 min/day) = 2.27 mg/L

- Well 5 – 699 gpm (pump maximum operating capacity)

Maximum Chlorine Dose = (125,000 ppm x 17 gal/day) ÷ (699 gpm x1,440 min/day) = 2.11 mg/L

Direct Additives

As shown in Table 4, the sodium hypochlorite solution will be utilized by the water system is an NSF/ANSI Stand 60 compliant product. The NSF/ANSI Standard 60 certification information for the sodium hypochlorite solution is provided in Appendix N.

Table 4: Chemical Additives

Chemical	Manufacturer	Purpose	NSF/ANSI Standard 60 Certified?
12.5 % Sodium Hypochlorite Solution	Hasa, Inc.	Disinfection	Yes

2.2.2. Treated Water from Liberty Utilities Interconnection

This Interconnection receives system water from the Liberty Utilities – Compton/Willowbrook System. The Liberty Utilities-Compton/Willowbrook System has two active wells, Well 12C and Well 19C and two active connections (CB-9 and CB-50) with the Metropolitan Water District of Southern California (MWDSC). Well 12C can receive either chlorination or chloramination treatment. Well 19C can also receive either chlorination or chloramination treatment. In addition, Well 19C is equipped with the blended phosphate and fluoride addition facilities for manganese sequestration and

fluoridation treatment, respectively. Water from CB-9 and CB-50 is fluoridated and chloraminated.

The main source of supply for the interconnection will be coming from Liberty Utilities' Well 12C, located approximately 0.5 mile east from the interconnection. Well 12C was constructed in 2015 and became operational in July 2019. It was subsequently rehabilitated in July 2020 due to odor issue. The well was originally designed to produce 2,500 gpm. After rehabilitation, the production rate has reduced to a maximum of 1,000 gpm. The second closest source is CB-50, which is located approximately 0.8 mile north of Well 12C. CB-50 is capable of delivering up to 4,500 gpm of water.

Liberty Utilities - Compton/Willowbrook system is a groundwater only system most of the time. Chlorination treatment will be provided for both Well 12C and Well 19C under normal operation conditions. However, when the available groundwater source(s) is/ are not adequate to meet the water demand, Liberty Utilities has indicated to the Division recently that it would convert the system to a surface water only system, with chloraminated MWDSC water as the sole source. Currently, the Sativa Water System is able to meet the water demand with running Well 5 alone. However, since Well 5 alone is not sufficient to meet the maximum day demand, the use of Liberty Utilities Interconnection is highly anticipated.

The LA County PW must notify the public served by the Sativa Water System, including the dialyses centers, if any, the possibility of receiving chloraminated water. In addition, the LA County PW must have a notification plan in place to inform the public as soon as possible after learning from Liberty Utilities of the pending conversion to chloraminated water or the presence of chloramines in the water. The LA County PW must answer questions that the general public and dialyses centers may have. The LA County PW must ensure that they are informed in a timely manner by Liberty Utilities of the switching of disinfectant residual from chlorine to chloramines. The LA County PW must provide the Division with a copy of the notification. The LA County PW must also develop a plan to address the potential water quality issues during the transition period and during the time the system is served with chloraminated water.

2.2.3. Emergency Interconnection

Water from the City of Compton Interconnection receives chlorination treatment.

2.3. STORAGE FACILITY

The Sativa Water System does not have other storage facilities other than the three active 10,000 gallons-capacity hydropneumatic tanks installed at the well sites. Well 3 site has two hydropneumatic tanks operated simultaneously. Well 5 site has one hydropneumatic tank. The hydropneumatic tank at Well 2 site is offline. It has been disconnected from the distribution system when Well 2 was changed to inactive status.

The three hydropneumatic tanks are identical. The tanks are baffled. The maximum allowable working pressure is 75 psi. The outside diameter of the tank is 88 inches with 3/8-inch shell thickness. The Tank Data Sheet is appended in Appendix O.

Insulators are provided between concrete tank supports and tank surfaces to prevent corrosion due to stray currents. All tanks are equipped with 32-inch diameter steel manhole hatches for cleaning and maintenance. The pressure relief valves release excess air from the tanks. Sight tubes are provided for the tanks. A Mercoid switch at each site maintains the tank pressure between 52 and 65 psi.

The hydropneumatic tanks are 68 years old. They were constructed in 1952. Because the tanks are old, a thorough structural and coating inspection should be done by a specialist in steel tank structure and coating at least once every five years. The tanks were last inspected and cleaned in May 2011. The tanks at the Well 3 site were last coated in July 2011. **The tanks are due for professional inspection.**

Hydropneumatic tanks do not provide much of the storage capacity and cannot be counted on for firefighting. The *Recommended Standard for Water Works* (Ten States Standards, 2012) states "*Hydropneumatic (pressure) tanks, when provided as the only water storage are acceptable only in very small water systems. Systems serving more than 150 living units should have ground or elevated storage… Hydropneumatic tank storage is not to be permitted for fire protection purposes."* The Sativa Water System is currently serving 1,631 service connections.

The hydropneumatic tanks are pressure maintenance facilities**. Facilities without backup storage may lose system pressure in the event of power outage.** The Well 5 site has a portable generator. In the event of power outage, only Well 5 may continue to operate. Well 3 is not equipped with back-up power.

2.4. DISTRIBUTION SYSTEM

2.4.1. Pressure Zones

The Sativa Water System has a one pressure zone distribution system. According to the LA County PW, pressures in the distribution system range from 52 to 65 psi.

2.4.2. Booster Pump Station

The Sativa Water System does not have any booster pump station. The water system utilizes three operational hydropneumatic tanks to maintain pressure in the distribution system.

2.4.3. Transmission and Distribution Mains

The wells are connected to the distribution system through the hydropneumatic tanks. The water system does not have any transmission mains. There are no gravity lines in

the distribution system. The distribution system consists of approximately 8.5 miles of asbestos cement, cast iron, steel, polyvinylchloride (PVC) and ductile iron (DI) pipes with sizes range from 4-inch to 8-inch diameters. Table 5 summarizes the pipeline Inventory.

Table 5: Distribution System Pipeline Inventory

Material	Amount (%)	Size	Class/Gauge	Comments
Asbestos Cement	75	4 - 6”	Class 150	Good
Steel	3.6	4 - 6”	12 Gauge	Good
Cast Iron	10	4 - 6 “	Unknown	Good
PVC	7	4 - 6”	Class 900	Good
PVC	2.5	8”	PC 165	New
Ductile Iron	1.5	8”	Class 350	New
CML & CMC Steel	0.4	8”	Schedule 20	New

Note: The 12-inch pipeline owned by Liberty Utilities is not included in the table.

Liberty Utilities 12-Inch Pipeline along N. Paulsen Avenue (Utilized by the Sativa Water System per the Interconnection Agreement)

In July 2019, Liberty Utilities constructed 620 linear feet of 12-inch water main line along N. Paulsen Avenue. It connects to the 12-inch water main line along W. 137th Street and, subsequently, to the 8-inch Liberty Utilities Interconnection. As part of the Agreement, Liberty Utilities allows the Sativa Water System to use this pipeline solely to transmit water from the interconnection to the Sativa Water System’s distribution system. Except for fire hydrants, no service connections are connected to the 12-inch pipeline. The configuration of the 12-inch pipeline is shown in Appendix P. It is unclear for how long Liberty Utilities will allow the Sativa Water System to use this pipeline. Ductile iron (DI) Class 350 pipes were used in the construction. The DI Class 350 pipe has a pressure rating of more than 200 psi.

The Sativa Water System connects to the 12-inch pipeline through a 12-inch tee at the corner of W. 137th Street and three 12-inch by 8-inch tees located at the corners of Hatchway Street, Piru Street and Stockwell Street. The sizes of the pipeline along Hatchway Street, Piru Street, and Stockwell Street are 6-inch, 6-inch, and 4-inch, respectively. Along Paulsen Avenue from Hatchway Street to Stockwell Street, the Sativa Water System has an existing 4-inch pipeline.

Paulsen Avenue Waterline

In July 2019, the LA County PW constructed 650 linear feet of 8-inch pipeline along Paulsen Avenue from Hatchway Street to 139th Street. It connects to the 12-inch tee at the corner of W. 137th Street and to the 8-inch tee at the corner of Hatchway Street. The existing distribution pipelines along Bliss Street, Oris Street, 138th Street and 139th Street connect to this pipeline. Bliss Street, Oris Street, 138th Street and 139th Street have 4-inch pipes. The LA County PW utilized DI Class 350 pipes with pressure rating of 200 psi. The configuration of the 8-inch pipeline is shown in Appendix Q.

Lucien Waterline

In July 2020, the LA County PW constructed 1,181 linear feet of 8-inch pipeline along Lucien Street from South Oleander Avenue to South Largo Avenue. The new pipeline aims to bring enough pressures to the east side of the service area and address the fire flow deficiencies in the surrounding area. In crossing the railroads along South Willowbrook Avenue, 170 linear feet of Cement Mortar Lined and Cement Mortar Coated (CML & CMC) welded steel pipe was used and installed inside a 16-inch steel casing. The rest of the 1,011 linear feet pipeline is made up of C900 PVC pipe, PC 165, DR 25. The configuration of the 8-inch pipeline is shown in Appendix R.

Water Main Separation Requirements

The new pipelines were constructed in accordance with the California Waterworks Standards. LA County PW maintained a minimum 10 feet horizontal separation and one foot vertically above non-potable pipelines. When crossing non-potable pipelines, the new water mains were constructed with eight-foot no joint from either side of the crossings.

Water Lines Hydrostatic Testing and Disinfection

The new pipelines were tested under hydrostatic pressure in accordance with American Water Works Association (AWWA) Standard C600 Section 5.2 using potable water. The test pressure was 150 psi measured at the low point of the pipeline for a duration of two hours. All detectable leaks were fixed, and pipeline re-tested until the pipe was found satisfactory and met the allowable leakage rate.

After pressure testing, the entire pipelines, including all valves, fittings, hydrants, and other accessories were disinfected in accordance with AWWA C651. The chlorination method was to give an initial chlorine dose of 40 to 50 mg/L and a residual of not less than 5 mg/L after 24 hours. Bacteriological samples were collected after disinfection and samples were analyzed by a certified laboratory. The pipelines were placed in service after results of analysis indicated no presence of bacteriological contamination.

2.4.4. Pipeline Improvements/Fire Flow Requirements

The distribution system contains undersized pipes and not able to meet the 1,250 gpm fire flow requirements for single family houses. In March 2019, the LA County PW contracted Civiltec Engineering Inc. (Civiltec) to run scenarios for four different potential interconnections at each side of the Sativa Water System service area. Civiltec modeled the available fire flow at each hydrant under MDD conditions for each of the individual scenarios. For areas that did not meet the fire flow requirement of 1,250 gpm, pipe improvements were iterated until the fire flow requirement was met at each fire hydrant throughout the system. Appendix S shows the interconnect scenario at west side of the service area (Liberty Utilities – Compton/Willowbrook side). The highlighted

pipes are recommended to be upgraded to 8-inch pipe, approximately 11,500 linear feet, to meet the fire flow at each hydrant. **However, the modeled scenario is not the same as the current interconnection set-up for the Liberty Utilities Interconnection**.

The LA County PW had made some pipeline improvements in the Sativa Water System's distribution system and reported significant improvements in system pressure. **The LA County PW must continue to evaluate if the current sources, storage and pipeline capacities are adequate to meet the fire flow requirements and the minimum system pressure requirement of 20 psi at the same time; if not, more improvements should be planned**.

2.4.5. Dead Ends

The distribution system has ten dead-ends. Six out of the ten dead ends are equipped with hydrants and the other four are equipped with blow-off valves. The operator flushes the dead-end blow-off valves and hydrants once a month. The LA County PW plans to eliminate these dead ends in the future.

2.4.6. Service Connections

The Sativa Water System service connections are categorized as residential connections, except for one commercial connection. The commercial connection is a mini-grocery store. There are no industrial, institutional, and agricultural connections in the service area. According to 2019 ARDWP, 1,550 service connections are made of copper, 87 are made of galvanized steel and the rest are made of PVC. There is no lead service line or fittings. **The service connections are not metered and some of the shutoff valves are located within the property lines of the customers.**

The Division encourages all public water systems to take steps now to conserve the water. All public water systems should keep records of water system production and delivery activities through metering at the source and customer connections. All public water supply systems that do not have customer meters and effective metered rates are encouraged to take the steps needed to obtain the necessary funds to install meters and adopt metered rates. The LA County PW has included the metering of all service connections in their future improvements for the Sativa Water System.

2.5. WATER QUALITY ASSESSMENT

2.5.1. Raw Water (Active Sources)

Wells 3 and 5 pump water from the confined aquifers in the Central Basin.

2.5.1.1. Bacteriological

Wells 3 and 5 are sampled monthly for bacteriological analysis. The Clinical Laboratory of San Bernardino, Inc. analyzes the samples using Colisure Quanti-Tray 200 Method (MPN method). The analytical results are submitted to the Division by the 10th day of the month following the month the wells are sampled. The Division has reviewed the monitoring data available on file. Table 6 summarizes the bacteriological quality of the groundwater wells.

Table 6. Bacteriological Quality Source Monitoring Summary (August 2012 – November 2020)

Year	Record of Total Coliform-Positive	*E. Coli* Positive
2012 - 2014	None	None
2015	Well 3[1]: September 15, October 21 & 23	None
2016	Well 3[1]: September 20 & 22	None
2017	None	None
2018	Well 3[1]: October 9	None
2019	Well 5[2]: January 15	None
2020	None[3]	None

[1] The well is 75 years old and no annular seal. It has history of sand pumping.
[2] The well is 27 years old. The well was removed from service in August 2019 for rehabilitation and was placed back in service in July 2020.
[3] Data is from January through November 2020.

The total coliform-positive samples recorded in 2015, 2016, and 2018 from Well 3 and in 2019 from Well 5 were not as a result of triggered source monitoring under the federal Groundwater Rule. The wells are sampled monthly for total coliform and *E. Coli* analyses. The water system pumped the well with total coliform-positive result to waste and re-sampled the well. So far, the results of the repeat samples were total coliform-negatives.

2.5.1.2. Title 22 Constituents / Vulnerability Assessment

The Division has developed a monitoring matrix for routine monitoring of Title 22 constituents based on the outcomes of vulnerability assessment. The monitoring matrix is valid for three years. The vulnerability assessment and monitoring frequency guidelines for Sativa Water System's wells for the first period of the fourth compliance cycle (January 1, 2020 through December 31, 2022) was sent to the LA County PW on December 31, 2019. A copy of the monitoring matrix is enclosed in Appendix T. All Title 22 monitoring results must be submitted electronically via electronic data transfer (EDT) process to the Division. Detailed summary of water quality monitoring data for Wells 3 and 5 from the Division's Water Quality Database between January 1, 1994 and November 30, 2020 is enclosed in Appendix U. Table 7 summarizes the monitoring schedules.

Table 7: Summary of Monitoring Schedules

Constituents	Well 3 (1910147-002)			Well 5 (1910147-005)		
	Monitoring Frequency	Date of Monitoring		Monitoring Frequency	Date of Monitoring	
		Last	Next by		Last	Next by
General Mineral	Once every 3 years	10/2019	10/2022	Once every 3 years	7/2020	7/2023
Secondary Standards[1]	Once every 3 years	10/2019	10/2022	Once every 3 years	7/2020	7/2023
Manganese	Once every 3 years	10/2020	10/2023	Quarterly	11/2020	1st quarter 2021
Inorganic[2]	Once every 3 years	10/2019	10/2022	Once every 3 years	7/2020	7/2023
Asbestos	Waived[3]	10/2016	TBD[3]	Waived[3]	6/2020	TBD[3]
Nitrate (as N)[4]	Annually	7/2020	7/2021	Annually	7/2020	7/2021
Nitrite[4]	Once every 3 years	10/2019	10/2022	Once every 3 years	7/2020	7/2023
Perchlorate[5]	Annually	7/2020	7/2021	Annually	7/2020	7/2021
Radionuclides[6]	6 years for GA & U. 9 years for Rad-226 &-228	1/2015	1/2021 (GA & U). 1/2024 (Rad-226 &-228)	6 years for GA & U 9 years for Rad-226 &-228	6/2020	6/2026 (GA & U). 6/2029 (Rad-226 &-228)
VOC[7]	Annually	7/2020	7/2021	Annually	7/2020	7/2021
PCE & TCE	Quarterly	10/2020	1st quarter 2021	Quarterly	10/2020	1st quarter 2021
SOC[8]	2 quarters in one year every 3 years for DEHP[9]; Others are waived.	DEHP[9] - 7/2018 & 10/2018. Others - 7/2011	DEHP[9] – 7/2021 & 10/2021. Others – waived	2 quarters in one year every 3 years for DEHP. Others are waived.	DEHP[9] - 4/2018, 7/2018 & 6/2020. Others - 6/2020	DEHP[9] – 4/2021 & 7/2021. Others – waived
1,2,3-TCP	2 quarters in one year every 3 years	2/2019 4/2019 7/2019	2022	2 quarters in one year every 3 years	1/2019 4/2019 7/2019 6/2020	2022

1 Except manganese for Well 5
2 Except asbestos, nitrate, nitrite, and perchlorate.
3 Monitoring is waived during the first period (2020-2022) of the fourth compliance cycle (2020-2028).
4 Increase to quarterly monitoring if ≥ ½ MCL.
5 Increase to quarterly monitoring if ≥ DLR.
6 GA – Gross Alpha; U – Uranium; Rad-226 – Radium 227; Rad-228 – Radium 228
7 Except tetrachloroethylene (PCE) and trichloroethylene (TCE).
8 Except 1,2,3-Trichloropropane (1,2,3-TCP)
9 DEHP - Di-(2-ethylhexyl) phthalate

General Mineral and Secondary Standards

Wells 3 and 5 produce hard water with total hardness levels ranged from 230 mg/L to 291 mg/L and 210 mg/L to 261 mg/L, respectively. Manganese concentration in the water produced by Well 5 fluctuated from non-detect to 0.130 mg/l. The secondary MCL for manganese is 0.05 mg/L. The first Well 5 sample with manganese concentration exceeding the MCL was collected in August 2000. The revised California

Secondary Drinking Water Standards became effective on September 27, 2006. The revised regulations specify that the compliance with the manganese MCL is based on the running annual average (RAA). Prior to the revision, the compliance determination procedures were not specified in the regulations. Although the RAA for manganese in Well 5 had exceeded the MCL for in several quarters from 2000 through 2005, the RAAs have been right at or below the MCL after the adoption of the revised Secondary Drinking Standards in 2006. The RAAs from 2006 through the third quarter of 2018 were below the MCL. The RAA for the fourth quarter of 2018 was 0.0506 mg/L. In 2019, the first and second quarters RAAs were below the MCL.

In August 2019, Well 5 was removed from service for rehabilitation. The well was placed back in service in July 2020. Manganese concentration from the sample collected in July 2020 was 0.039 mg/L. A sample collected in October 2020 from the well had manganese concentration of 0.34 mg/L, exceeding the MCL. The LA County PW collected another sample on November 30, 2020, and the result was 0.0023 mg/L.

The results of Spinner Log and Mass Balance Analyses and Testing conducted in November 2019 reveal that the water from the aquifers tapped by the rehabilitated Well 5 contains elevated levels of manganese, and the chance of manganese concentration of Well 5 water exceeding the MCL remains high. The LA County PW has indicated the intention to work with WRD to provide manganese treatment for Well 5.

Inorganic Chemicals

Arsenic, barium, and fluoride have been detected in Wells 3 and 5, but the concentrations are below their respective MCLs. Aluminum and total chromium have also been detected in Well 3, but the concentrations are below their respective MCLs.

Wells 3 and 5 are not considered vulnerable to asbestos contamination, based on available data published by USGS. All asbestos samples collected from the wells have the results of non-detects. Wells 3 and 5 were last sampled for asbestos in October 2016 and June 2020, respectively.

The initial monitoring requirements for perchlorate had been completed for both wells. Analytical results of the initial and subsequent monitoring were all non-detects. The wells were last sampled for perchlorate in July 2020, with results of non-detects. Therefore, perchlorate monitoring frequency is annually for the wells.

Nitrate/Nitrite

Nitrate has been detected in the water produced by Well 3, but the concentrations have remained below half of the Nitrate MCL of 10 mg/L, as nitrogen. The last nitrate sample collected from Well 3 was on July 13, 2020, with the result of 0.45 mg/L, as N. Nitrate has not been detected in Well 5. The last nitrate sample collected from Well 5 was on July 13, 2020, after well rehabilitation. The result was non-detect. Therefore, nitrate monitoring frequency is annually for both wells. Nitrite has not been detected in both

wells. Therefore, nitrite monitoring frequency for Wells 3 and 5 is once every three years.

Radionuclides

The Initial monitoring for radionuclides had been completed for both wells. Gross alpha and uranium were detected in the wells, but the concentrations were below their respective MCLs. Radium-226 (Rad-226) and radium-228 (Rad-228) have not been detected. Monitoring frequency for a radionuclide with concentration less than the DLR is every nine years. Monitoring frequencies for a radionuclide with concentration above the DLR but equal to or below half the MCL is every six years and concentration above half the MCL to MCL is every three years. The gross alpha and uranium concentrations for Well 3 and 5 are above the DLR, but below half their respective MCLs. Therefore, the LA County PW must monitor both wells for gross alpha and uranium once every six years and once every nine years for Rad-226 and Rad-228. After completion of the well rehabilitation, the LA County PW sampled Well 5 for radionuclides on June 23, 2020. Gross alpha and uranium concentrations in the well were still lower than half their respective MCLs. Rad-226 and Rad-228 concentrations in the well remained non-detects.

Volatile Organic Chemicals (VOC)

Except for tetrachloroethylene (PCE), no other regulated VOCs has been detected in Wells 3 and 5. The wells are sampled for PCE quarterly. Thus far, the sampling results for both wells remained below the MCL. Well 3 was last sampled for VOCs on July 23, 2020, with results of non-detects except for PCE. PCE concentration in the July 2020 sample was 0.00083 mg/L. The well was last sampled for PCE and TCE on October 2, 2020 with concentrations of 0.0008 mg/L and non-detect, respectively. The LA County PW also sampled Well 5 for VOCs on July 23, 2020, after rehabilitation. Analytical results indicate all VOCs, including PCE, were non-detects. The well was last sampled for PCE and TCE on October 2, 2020. The results were again non-detects. Because the wells are located in the Central Basin with known PCE and TCE plume, LA County PW must continue to sample the wells quarterly for these constituents.

Synthetic Organic Chemical

According to 2020 – 2022 Vulnerability Assessment and Monitoring Frequency Guidelines, the wells are not considered vulnerable to contamination by SOCs other than di (2-ethylhexyl) phthalate (DEHP) and 1,2,3-TCP. The Division has waived the monitoring requirements for all other SOCs for the 2020-2022 compliance monitoring period. The monitoring frequency for DEHP is two quarterly samples in one year within the current compliance monitoring period. The wells were last sampled for DEHP in 2018. The results were all non-detects. No DEHP samples have been collected from both wells for the current monitoring period (January 1, 2020 – December 31, 2022).

In December 2017, the MCL for 1,2,3-TCP was established. The initial 1,2,3-TCP monitoring for 1,2,3-TCP were completed for both wells in 2018. The results were all non-detects. Subsequent monitoring collected from Wells 3 and 5 were also non-detects. Therefore, 1,2,3-TCP monitoring frequency is two quarterly samples in one year within the current compliance monitoring period for both wells.

Unregulated Chemicals

Monitoring requirements for unregulated chemicals have been completed for the wells. The monitoring consisted of two consecutive samples five to seven months apart in a single year were successfully completed in October 2011 for boron, hexavalent chromium, vanadium, and dichlorodifluoromethane (freon 12).

In November 2010, the notification level (NL) for 1,4-dioxane was established at 0.001 mg/L. The wells have 1,4-dioxane concentrations above the NL. Quarterly samples are collected from the wells. The LA County PW continues to notify annually the governing body of the 1,4-dioxane NL exceedance.

2.5.2. Distribution System Water Quality Monitoring

2.5.2.1. Bacteriological

Total Coliform Rule (TCR)

The Division has on file an approved Bacteriological Sample Siting Plan (BSSP) dated June 2016. Pursuant to Section 64423, Table 44423-A, Title 22 of the CCR, the Sativa Water System is required to collect a minimum of two routine total coliform samples per week from the distribution system. The revised BSSP has identified four routine sampling sites, along with their respective downstream and upstream repeat sample locations. The sites are sampled every Tuesdays. Table 8 lists the locations of the routine and repeat sample sites.

Table 8: Routine and Repeat Sample Sites

Routine	Repeat Sample Sites	
	Upstream	Downstream
Site 1 - 730 139th Street	719 139th Street	738 139th Street
Site 2 - 2016 Lucien Street	2036 Lucien Street	2012 Lucien Street
Site 3 - 13122 Largo Street	13126 Largo Avenue	13103 Largo Avenue
Site 4 - 2315 Bliss Street	2311 Bliss Street	2325 Bliss Street

Per Section 64426.1 of the CCR, a public water system collecting less than 40 samples per month is in violation of total coliform MCL when more than one sample collected during any month is total coliform-positive; or any repeat samples is fecal coliform-positive or *E. Coli*-positive; or any repeat sample following a fecal coliform-positive or *E. Coli*-positive routine sample is total coliform-positive. The Sativa Water System has been in compliance with the Total Coliform MCL since 2012. In 2017, a total of four

total coliform-positive and *E. Coli*-negative samples were recorded. These samples were collected in the months of February, July, August, and September. All repeat samples were total coliform-negatives and *E. Coli*-negatives. The rest of the samples collected from 2012 through November 2020 were absent of coliform bacteria.

Groundwater Rule (GWR) Amendment to Coliform Sample Siting Plan

The monitoring requirements under GWR has been incorporated into the revised approved BSSP dated June 2016. The Sativa Water System is required to conduct triggered source water monitoring within 24 hours upon being notified by their laboratory that a sample collected for the TCR is total coliform positive. All wells that are in operation during the time the total coliform positive TCR sample was collected will need to be sampled. The Sativa Water System did collect samples from Wells 3 and 5, when a routine sample tested total coliform-positives in February, July, August, and September 2017. The results were total coliform-negatives.

The water system's GWR Amendment needs to be updated to reflect the Liberty Utilities Interconnection as an additional source.

Federal Revised TCR

On April 1, 2016, the Federal Revised TCR (federal rTCR) became effective. The revisions include the new Coliform Treatment Technique requirement replacing the Total Coliform MCL, and a new *E. Coli* MCL regulatory limit. *E. Coli* MCL is exceeded when (1) *E. Coli*-positive repeat sample following TC-positive routine sample; (2) TC-positive repeat sample following an *E. Coli* positive routine sample; (3) failure to collect all required repeat samples following a *E. Coli*-positive routine sample; (4) failure to test for *E. Coli* when any repeat sample is TC-positive. The State Water Board is implementing the federal rTCR. The Sativa Water System has neither exceeded the total coliform MCL nor *E. Coli* MCL.

2.5.2.2. Lead and Copper Tap Sampling

The Sativa Water System is on reduced triennial monitoring for lead and copper. Data from the first and second rounds of standard 6-month monitoring in 1993 though the last annual monitoring round in 2009 have 90th percentile ranks below the action levels (ALs) for lead and copper. The first triennial monitoring was conducted in 2012. Table 9 summarizes the triennial monitoring from 2012 through 2018.

Table 9: Distribution System Lead and Copper Monitoring (2012, 2015 and 2018)

Category	Date Conducted	Number of Samples Required	Number of Samples Collected	90th Percentile Lead (mg/L)	90th Percentile Copper (mg/L)
1st Triennial	June 2012	20	24	<0.005	0.160
2nd Triennial	August 2015	20	23	<0.005	0.260
3rd Triennial	September 2018	20	23	<0.005	0.410

Lead Action Level = 0.015 mg/L; Copper Action Level = 1.30 mg/L

The 90th percentile lead and copper levels did not exceed the ALs in 2012, 2015 and 2018. The next round of sampling event is due in 2021. The sampling event should take place during the warm months of June, July, August, or September.

If the Sativa Water System must utilize the Liberty Utilities Interconnection while Liberty Utilities relies 100 percent on treated MWDSC water, it will be a major change in water quality. Special water quality parameters sampling and lead and copper tap sampling must be conducted to ensure the switch does not cause adverse impact on lead and copper leaching in the area receiving chloraminated water from the interconnection.

2.5.2.3. Disinfectant Residuals and Disinfection By-Products (DBP)

Chlorine Residuals

Pursuant to Section 64534.4, Title 22 of the CCR, the Sativa Water System is required to measure the residual disinfectant levels at the same points in the distribution system and at the same time as total coliform are sampled. Table 10 summarizes the running annual average (RAA) chlorine residual levels from the January 2012 through November 2020. The RAAs are below the MRDL.

Table 10: Chlorine Residual Compliance (January 2012 – November 2020)

Year	Number of Samples Collected	Monthly Averages, Range (mg/L)	Quarterly RAAs, Range (mg/L)	Compliant w/ MRDL?
2012	208	1.22 – 1.34	1.25 – 1.27	Yes
2013	208	1.18 – 1.44	1.29 – 1.38	Yes
2014	212	1.12 – 1.27	1.20 – 1.33	Yes
2015	208	0.91 – 1.14	1.05 – 1.11	Yes
2016	204	0.97 – 1.19	1.09 – 1.12	Yes
2017	223	0.97 – 1.11	1.03 – 1.08	Yes
2018	208	0.83 – 1.45	1.05 – 1.07	Yes
2019	212	0.78 – 1.98	1.07 – 1.21	Yes
2020[1]	188	0.93 – 1.37	1.22 – 1.27	Yes

[1] Samples collected from January through November 2020.

Stage 1 DBPR Disinfection Byproducts Monitoring

The water system has completed the Stage 1 Disinfectant and Disinfection Byproduct Rule (DBPR) monitoring in 2013 and moved onto compliance monitoring for Stage 2 DBPR beginning 2014. Under Stage 1 DBPR, and as a groundwater system serving fewer than 10,000 persons, the Sativa Water System is required to collect one pair of total trihalomethanes (TTHMs) and haloacetic acids (HAA5) samples once per year per treatment plant during the month of warmest water temperature and at a location representing maximum residence time. The Stage 1 MCLs for TTHMs and HAA5 are 80 µg/L and 60 µg/L, respectively and the compliance is based on system-wide

average. The water system collected TTHM and HAA5 samples from two approved sites. Neither MCL was exceeded during Stage 1 DBPR monitoring period.

Stage 2 DBPR Requirements

The Sativa Water System is classified as a Schedule 4 system under Stage 2 DBPR. The water system conducted the Initial Distribution System Evaluation (IDSE) standard monitoring in 2008. TTHM and HAA5 samples were collected from two monitoring locations at a frequency of every 90 days. The IDSE monitoring requirement was completed on April 1, 2010. On June 22, 2010, SLACWD submitted the IDSE report to the Division. The report was subsequently revised on July 13, 15 and 21, 2010. The revised IDSE report along with the proposed Stage 2 Compliance Monitoring Plan (CMP) dated July 21, 2010 was submitted and approved by the Division on July 22, 2010. The water system has chosen the two sites utilized during the Stage 1 DBPR monitoring as the Stage 2 DBPR Compliance Monitoring Sites. In accordance with the approved IDSE report and Stage 2 CMP, the Sativa Water System is required to collect one pair of TTHMs and HAA5 once per year from the two approved sites beginning on July 7, 2014 and every year thereafter. Table 11 summarizes the results of monitoring.

Table 11: Stage 2 DBPR Compliance (2014 – 2020)

Sample Sites	PS Codes	Frequency	Monitoring Results, µg/L		Meets Standard?
			TTHM	HAA5	
Site1–2423 East Bliss Street	1910147-800	Yearly	ND - 15.6	ND - 6.0	Yes
Site2–2045 East 131st Street	1910147-801	Yearly	1.4 - 15.4	ND - 5.3	Yes

2.5.2.4. General Physical Parameters

Pursuant to Section 64449.5 (b) (2), *Distribution System Physical Water Quality*, Title 22 of the CCR, community water systems with greater than 1,000 service connections must collect one sample for every four bacteriological samples required per month. Because four routine total coliform samples per week are collected from the Sativa Water System's distribution system, one sample per week for physical water quality analyses (color, odor, turbidity) must be collected. Starting 2012, one general physical quality sample per week rotating among the four routine sample sites, were consistently collected until April 2018.

In April 2018, a "brown water incident" occurred after flushing activities were conducted by the SLACWD's operators. Residents complained about receiving dirty water from their taps. On April 19, 2018, the Division conducted a field inspection and interviewed some residents. Majority of the residents indicated that brown and yellowish water had been an issue since January 2018. The Division collected samples from the four bacteriological sampling sites and a few houses to check chlorine residuals. The chlorine residuals were adequate, with results ranging from 0.72 mg/L to 0.91 mg/L.

On April 23, 2018, another round of sampling was conducted by the Division, along with representatives from the LA County Department of Public Health (DPH). Samples were

collected strategically from various houses and analyzed for manganese, iron, color, turbidity, chlorine residuals and total coliforms. Table 12 summarizes the results.

Table 12: Bacteriological, Free Chlorine, Iron and Manganese, and General Physical Sampling Event of April 23, 2018

Constituents	Sample Results, Ranges	
	Division	LA County DPH
Total Coliforms	Absent	Absent
Free Chlorine Residual, mg/L	0.23 – 0.88	Not analyzed
Iron, µg/L	13.1 - 100	11 – 59
Manganese, µg/L	27.1 - 185[1,2]	28 – 75[1]
Color, Unit	5 - 20[3]	Not analyzed
Turbidity, NTU	0.37 – 2.21	Not analyzed

1 Above the MCL of 50 µg/L for manganese.
2 Four out of the eight sites are above the MCL.
3 Above the MCL of 15 Units for color. Two out of the eight sites are above the MCL.

The Division, therefore, instructed SLACWD to sample the four bacteriological sample sites for general physical water quality parameters weekly beginning in May 2018 and cease the flushing activity until appropriate flushing procedures have been developed. The LA County PW, the new owner of the water system, continued to collect four general physical samples weekly. In July 2019, the LA County PW resumed with the flushing activities using the NO-DES methodology. Also, dead-end flushing has been regularly performed. Table 13 summarizes the monitoring results from May 2018 through November 2020.

Table 13: General Physical Compliance from May 2018 through November 2020

Year	Month	Total Samples	Color			Odor Range, Unit	Turbidity Range, NTU
			Range, Unit	No. ≥3.0 Units	No. ≥MCL		
2018	May	20	5.0 – 10.0	20	0	1 - 2	0.4 – 1.2
	June	16	5.0 – 10.0	16	0	1 - 2	<0.1 – 0.6
	July	20	<3.0 – **20.0**[1]	19	1	1 - 2	0.2 – 0.6
	August	16	<3.0 – 10.0	9	0	1 - 2	<0.1 – 0.6
	September	16	<3.0 – 7.5	4	0	1	<0.1 – 0.3
	October	20	<3.0 – 5.0	3	0	1	<0.1 – 0.4
	November	16	<3.0 – 10.0	10	0	1 - 2	<0.1 – 0.5
	December	16	<3.0 – 15.0	3	1	1	<0.1 – 3.0
2019	January	20	<3.0	0	0	1	<0.1 – 0.3
	February	16	<3.0 – 15.0	7	1	1 - 2	<0.1 – 1.9
	March	16	<3.0 – 10.0	8	0	1 - 2	<0.1 – 0.8
	April	20	<3.0 – **20.0**[1]	8	1	1 - 2	<0.1 – 1.7
	May	16	<3.0 – **25.0**[1]	4	1	1	<0.1 – 1.6
	June	16	<3.0 - 10	4	0	1 - 2	<0.1 – 1.1
	July	20	<3.0 – 10.0	6	0	1	<0.1 – 1.2
	August	16	<3.0 – **30.0**[1]	7	1	1	<0.1 – **5.2**[2]
	September	16	<3.0 – 5.0	1	0	1 - 2	<0.1 – 0.3
	October	20	<3.0 – 5.0	3	0	1 - 2	<0.1 – 0.3
	November	16	<3.0 – 5.0	2	0	1 - 2	<0.1 – 0.4
	December	20	<3.0	0	0	1 - 2	<0.1 – 0.4

Year	Month	Total Samples	Color			Odor Range, Unit	Turbidity Range, NTU
			Range, Unit	No. ≥3.0 Units	No. ≥MCL		
2020	January	16	<3.0 – 5.0	1	0	1 - 2	<0.1 – 4.3
	February	16	<3.0	0	0	1 - 2	<0.1 – 0.4
	March	20	<3.0	0	0	1	<0.1 – 0.4
	April	16	<3.0	0	0	1	<0.1 – 0.6
	May	16	<3.0 – 5.0	1	0	1 - 2	<0.1 – 0.3
	June	20	<3.0	0	0	1	<0.1 – 0.5
	July	16	<3.0	0	0	1	<0.1 – 0.3
	August	16	<3.0 - **25**[1]	8	1	1	<0.1 – 3.2
	September	20	<3.0 - 10	11	0	1	<0.1 – 1.0
	October	16	<3.0 – 7.5	9	0	1 - 2	0.1 – 0.7
	November	16	<3.0 – 7.5	10	0	1 - 2	<0.1 – 1.3

[1] Above color MCL of 15 Units.
[2] Above turbidity MCL of 5 NTU.

The above table shows discoloration of water was system-wide between May and July 2018. Beginning in August 2018, discoloration of water gradually decreased. In July 2019, the NO-DES flushing method was utilized by the LA County PW to flush the distribution system. The general physical quality of water had improved until August 2020.

In August 2020, the number of samples with elevated levels for color increased. Color was detected in 8 out of 16 samples, with levels ranged from 5 to 25 units. One of the samples exceeded the secondary MCL for color. During this month, the newly rehabilitated Well 5 and the newly constructed 8-inch pipeline along Lucien Street were placed in service. The sample with elevated color exceeding the secondary MCL was from Sample Site 13122 Largo Avenue, which is located downstream of the new 8-inch pipeline. In addition, all samples collected from Sample Site 2016 Lucien Street were detected for color. This site is a block away from Well 5. The increase of the flow and the changes in flow direction may have disturbed the legacy deposits in the pipeline. In November 2020, color was detected in 9 out of 16 samples, but none has exceeded the secondary MCL. The highest color concentration was 10 units. The LA County PW plans to conduct other rounds of NO-DES flushing by December 2020 and March 2021. In addition, the LA County PW has planned to replace the old and undersized pipes. Due to the cost, however, this project may take longer for the LA County PW to implement.

2.5.2.5. Asbestos Monitoring

About 80 percent of the water system's distribution pipelines are asbestos cement pipes. The LA County PW is required to collect one sample at a tap served by asbestos cement pipe, under conditions where asbestos contamination is most likely to occur (i.e. low aggressive index), during the first compliance period of the nine-year compliance cycle from the distribution system and analyze the sample for asbestos. In the 2011 – 2019 compliance cycle, asbestos sample was collected in June 2011. The result was

non-detect. The next round of asbestos monitoring must be completed by December 31, 2022.

2.5.3. Consumer Confidence Report

Section 64480(a), Chapter 15, Title 22 of the CCR requires that water suppliers to distribute an annual report on the water quality of the water served to each of their customers by July 1st of every year. The Consumer Confidence Report has been distributed via mail to the water system's consumers by July 1st every year. The reports for 2018 and 2019 are also posted in the LA County PW – Sativa website. The reports have been submitted and uploaded to the Division via the Electronic Annual Reporting System since 2013.

2.6. OPERATION AND MAINTENANCE

2.6.1. Personnel and Operator Certification

Pursuant to Section 64413.3 of the Operator Certification Regulations, the Division classified the water system as a D2 system (Appendix V). The Chief Operator must possess a D2 or higher certification and the Shift Operator must possess a D1 or higher certification. For the disinfection facilities for which no *Giardia* or Virus reduction is required, the LA County PW is required to utilize either certified distribution operators or certified treatment operators that have been trained to operate these facilities. The LA County PW has sufficient number of certified operators with proper certifications.

2.6.2. SCADA

The LA County PW has installed a SCADA system for the Sativa Water System. It controls or monitors the operation of wells and associated chlorination facilities (Appendix W).

2.6.3. Facility Inspection and Maintenance Program

All well sites, including the office site, are properly secured with fences and locked gates to prevent unauthorized access. All sites are equipped with the burglar monitoring systems.

The operators check the well sites daily. The routine check includes the visual inspection of (1) well sites for any signs of vandalism; (2) wells for wellhead, sampling tap, flowmeters, pumping equipment and lubrication conditions; (3) chlorination facilities for chemical pump and injection point conditions, and chlorine supply tanks for solution levels, any signs of leaks or spills, and (4) hydropneumatic tanks conditions, among others. The well sites are provided with log sheets for the well, disinfection facility, and hydropneumatics tank. The operator that performs the inspection fills out the respective log sheets with the findings including the water meter reading, electric meter reading, chlorination feed rate reading, chlorine tank solution level and chlorine usage, on-line

analyzer reading, lubricator condition, unusual test results and any mechanical problems, among others.

The operator performs daily chlorine residual test with a Hack pocket colorimeter using the DPD method at downstream of the chlorine injection points to check if proper chlorine dose rate is applied.

Hydropneumatic Tanks

The water system has a hydropneumatic tank inspection and maintenance program. On a daily basis, the operators check and record (1) leaks around water piping, the tank, and fittings; (2) leaking air from the tank; (3) air-to-water ratio (water level in the tank) by visually checking the sight tube; (4) presence of sediments in the tank by visually checking the sight tube; and (5) control systems and alarms to ensure that they are operating properly and protected from moisture and corrosion.

On a weekly basis, the sanitary and structural condition of the basic tank components will be checked in more detail that includes (1) pressure fluctuation during a cycle (actual cut-in and cut-out pressures); (2) number of pump cycles per hour; (3) condition of paint on the exterior of the tanks and signs of corrosion; and (4) condition of tank supports to insure that the tanks are adequately secured to the floor.

The hydropneumatic tanks will be disinfected and sampled for bacteriological quality in accordance with AWWA procedures and standards, when placed back to service after repairs and routine maintenance.

2.6.4. Cross-Connection Control Program

SLACWD adopted a cross-connection control ordinance on January 1, 1987. The ordinance was approved by the Division on May 17, 1988. The ordinance explains in detail the purpose and type of protection required for different types of hazards, prevention device installation, and the testing and maintenance. The LA County PW has designated a certified cross-connection specialist for the Sativa Water System. The specialist obtained his certification from the University of Southern California (USC) in August 2019.

In October 2012, the Cross Connection and Water Pollution Control Program staff from the Los Angeles County Department of Public Health (LACDPH), Bureau of Environmental Protection conducted a cross-connection survey. The results of the survey indicated that 20 homes have active irrigation sprinklers systems with no backflow protection and 21 homes have pressure type vacuum breakers (PVB). The 20 homes were notified to correct and abate the backflow hazard. The 21 homes with PVBs were given the options to either convert their PVBs to a non-testable atmospheric type vacuum breaker or have their PVBs tested on annual basis. According to the former SLACWD, all the 41 homes have installed the non-testable devices.

The airgaps at the end of the pump-to-waste lines for Wells 3 and 5 are maintained properly.

2.6.5. Customer Complaint Program

The LA County PW took over the water system after the brown water incident in 2018. The staff are fully aware of the water system customers' concerns over the water quality issues. The staff have worked hard to respond to the customers' concerns in a timely manner. Complaints are received at the administration office and the customer's information such as name, address, and telephone number, etc. are recorded. Work orders are generated for those requiring the follow-up investigation.

Majority of complaints received in 2018 and 2019 are related to taste and color. All complaints received were investigated and handled accordingly. The LA County PW also conducted several community outreaches to keep the customers well informed of the status of projects designed to address deficiencies listed in the Division's compliance order and to gain the trust of the customers.

2.6.6. Emergency Response Program

The Division has on file the water system's Emergency Response Terrorism/Security Vulnerability Assessment Plan dated June 28, 2012. **The LA County PW needs to update the plan to reflect the changes in the management, operation, and facilities.**

2.6.7. Emergency Chlorination Plan

The Division has on file the water system's Emergency Chlorination Plan dated November 16, 2011. The LA County PW needs to update the plan to reflect the change in chlorination facilities.

2.6.8. Water Quality Emergency Notification Plan

The Water Quality Emergency Notification Plan (WQENP) for the Sativa Water System is up-to-date and on file with the Division.

2.6.9. Valve Maintenance Program

The water system has a valve maintenance program that was established in 2015. There are currently approximately 194 valves ranging from 4-inch to 8-inch in size in the distribution system. The pressure zone is divided into quadrants. The locations of the valves including valve number, address and quadrant location, size, type, number of turns and date of inspection are recorded, and their locations are indexed. In the event of an emergency, the operator can isolate portions of the distribution system.

The LA County PW has continued the program and been replacing the dilapidated and malfunctioning valves. Any valve that does not completely close or open is replaced. Each time a valve is replaced, the operator records the valve information including the valve number, location, manufacturer, type, size, valve depth, valve box type, direction of operation, date operated/exercised, number of turns to close or open the valve, position in the distribution system (open or closed), the date the valve was installed and the employee who did the installation.

The LA County PW's goal is to exercise all valves each year. In 2018, only 12 valves were exercised due to the brown water issue. In 2019, all valves were exercised.

2.6.10. Flushing Program

Due to the brown water incident in 2018, the LA County PW has evaluated the appropriate flushing method applicable for the Sativa Water System. In July 2019, after securing the supply from the Liberty Utilities Interconnection, flushing activities were resumed. The LA County PW utilized an unconventional flushing method, the Neutral Output Discharge Elimination System (NO-DES) flushing technology and conducted the required water quality monitoring during flushing. The LA County PW's NO-DES Flushing Operation and Monitoring Plan for the Sativa Water System is provided in Appendix X.

NO-DES flushing activities are done on weeknights from 10 o'clock in the evening to 5 o'clock in the morning of the following day to minimize the impact to customers. The LA County WP personnel oversee the NO-DES flushing operation and the operators are on standby to conduct localized flushing if a brown water spike occurs. Prior to conduct of flushing activities, customers are properly notified. If brown water occurs, customers are advised to flush their faucets and garden hose and call the Sativa Water System operators for assistance. If necessary, bottled water are provided. So far, there has been no brown water complaints during the NO-DES flushing. The LA County PW plans to conduct the NO-DES flushing at least once a year. The next round is scheduled for December 2020. Aside from NO-DES flushing, flushing of dead-ends is performed at least once a month.

Since the implementation of the NO-DES flushing system and regular flushing of dead-ends, the number of customer complaints for discoloration has reduced. In 2019, there were 13 locations with brown water complaints. Staff checked the locations and found the discolorations were due to customers' old and deteriorated internal plumbing systems. Staff checked water quality at water system side pipeline and found the water was clear.

2.6.11. Main Disinfection Program

The LA County PW performs the main disinfection in accordance with AWWA Standards using the AWWA C651. Chlorine residuals and bacteriological tests are

conducted after water main installation and repairs. The water main is placed into service after acceptable water quality is obtained.

2.6.12. Electronic Annual Report

The LA County PW has submitted electronically the Annual Reports to the Drinking Water Program for 2018 and 2019 on a timely manner.

2.6.13. California Environmental Water Quality Act

The LA County is the lead agency and the Division is the responsible agency pursuant to California Environmental Quality Act (CEQA) for the change of disinfection systems at Wells 3 and 5. The LA County PW has determined that the project is categorically exempt from the CEQA. The project was adopted and approved by the LA County Board of Supervisors. A Notice of Exemption (NOE) has been filed with the Los Angeles County Clerk's Office on October 15, 2020 for this project and posted until November 16, 2020. No objection or notice of legal action against the project was received.

The Division has reviewed the CEQA Exemption Worksheets submitted by LA County PW (Appendix Y) on November 2, 2020. The Division concurred that this project does not require further environmental review. Pursuant to Title 14, Section 15302 and Title 22, Section 60101 (b), CCR, the change of disinfection facilities from gas chlorination systems at Wells 3 and 5 to 12.5 sodium hypochlorite chlorination systems falls under CEQA Class 2, Replacement or Reconstruction, exemption. The Division will file a NOE through the Governor's Office of Planning and Research State Clearinghouse upon issuance of this permit amendment. The California Division of Fish and Game filing fees do not apply to exempted projects.

3. APPRAISAL OF SANITARY HAZARDS AND PUBLIC HEALTH SAFEGUARDS

The LA County PW is the designated successor by LA LAFCO of the water system previously owned and operated by SLACWD. Since taking over the operation of the water systems, the LA County PW has made many improvements to the water system. However, it will take time and more resources to fully address all the issues listed in Compliance Order No. 04-22-18R-002, such as the source capacity and minimum pressure requirements.

The Liberty Utilities Interconnection is a temporary active source for the Sativa Water System. Without the Liberty Utilities Interconnection, Wells 3 and 5 cannot meet the PHD. In addition, the Sativa Water System has to rely upon the emergency interconnection to comply with the requirements of Section 64554 (a) (1), Title 22, CCR.

The 620 linear feet of 12-inch water main line along N. Paulsen Avenue connecting to the 12-inch water main line along W. 137th Street and, subsequently, to the 8-inch Liberty Utilities Interconnection is owned and constructed by Liberty Utilities as part of

the Watermain Improvement Project for their Compton/Willowbrook water system. As part of the Agreement with the Sativa Water system, Liberty Utilities allows the Sativa Water System to temporarily use this pipeline solely to transmit water from the interconnection to the Sativa Water System's distribution system while they are constructing the rest of the Watermain Improvement Project pipelines. It is unclear for how long Liberty Utilities will allow the Sativa Water System to use this 12-inch pipeline. Therefore, the LA County WP should secure a permanent reliable source for the Sativa Water System.

The Sativa Water System has no storage facility other than the three hydropneumatics tanks. The hydropneumatic tanks do not provide much of the storage capacity and cannot be counted on for firefighting. The LA County PW should consider construct a storage facility in the future.

The Sativa Water System's distribution system contains old and undersized pipes. Due to the lack of proper flushing in the past, there are legacy sediment buildup in the pipeline. When triggered, these sediments may release and cause discoloration in the water distributed to customers. LA County PW must continue the pipeline replacement project. The LA County PW also need to continue to evaluate if the current source, storage and pipeline capacities are adequate to meet the fire flow requirement and the minimum system pressure requirement (20 psi) at the same time; if not, more improvement should be planned.

Since Liberty Utilities has indicated the intention to switch to 100 percent imported surface water from MWDSC, which contains chloramines, when groundwater alone cannot meet the system demand. The LA County PW must notify the public served by the Sativa Water System, including the dialyses centers, if any, the possibility of receiving chloraminated water as soon as possible. The LA County PW should also have a notification plan in place to inform the public as soon as possible after learning from Liberty Utilities of the pending conversion to chloraminated water or the presence of chloramines in the water. The LA County PW must answer questions that the general public and dialyses centers may have.

If the Sativa Water System must utilize the Liberty Utilities Interconnection while Liberty Utilities relies 100 percent on treated MWDSC water, it will be a major change in water quality. Special water quality parameters sampling and lead and copper tap sampling must be conducted to ensure the switch does not cause adverse impact on lead and copper leaching in the area receiving chloraminated water from the interconnection. LA County PW must also develop a transition plan to address the potential water quality issues during the transition period, including the potential lost of disinfectant residuals due to the mixing of chloraminated surface water and chlorinated well water in the system, which may cause bacteriological quality problem. Also, the Sativa Water System will be required to meet the minimum residual requirements of the Surface Water Treatment Rule during the time it receives treated surface water. The Sativa Water System's GWR Amendment needs to be updated to reflect the Liberty Utilities Interconnection as an additional source.

The LA County PW has adequate number of operators with the proper grade level to meet the operator certification requirements. The Sativa Water System is in compliance with the direct additives regulations and has adequate valve exercise and flushing programs.

4. CONCLUSIONS AND RECOMMENDATIONS

Issuance of a domestic water supply permit by the Division to the Los Angeles County Public Works (hereinafter, LA County PW) as owner of the Sativa Water System is recommended subject to the following conditions:

General

1. The LA County PW shall comply with all the requirements set forth in the California Safe Drinking Water Act, California Health and Safety Code and any regulations, standards, or orders adopted thereunder.

2. The only sources approved for domestic water supply for the Sativa Water System are listed in Table 1 and Table 2:

Table 1. Groundwater Sources

Source	Primary Station (PS) Code	Status	Capacity (gpm)
Well 3	1910147-002	Active	424
Well 5	1910147-005	Active	650

Table 2. Interconnection

Source	PS Code	Location	Status	Capacity (gpm)
Liberty Utilities – Compton/Willowbrook	1910147-010	137th Street & Paulsen Avenue 8" One Way Connection	Active	1,500
City of Compton	1910147-009	Oris Street & Willowbrook Avenue 6" One Way Connection	Emergency	900

3. The only approved treatment facilities for Sativa Water System are those listed in Table 3:

Table 3. Treatment Facilities

Treatment Plant	Treatment Processes
Wells 3 and 5 Chlorination Facilities	Chlorination for precautionary purposes with 12.5 percent sodium hypochlorite solution.

4. No additions, changes, or modifications to the sources of water supply or water treatment facilities outlined in Conditions 3 and 4 shall be made without prior receipt of an amended domestic water supply permit from the Division.

Inactive Source

5. Well 2 has been inactive for more than one year. The well is no longer viable to use for domestic purposes due to contamination with *E. coli* bacteria. LA County PW shall plan to destroy the well. The destruction permit and report shall be submitted to the Division.

Water Quality

6. All water supplied by the Sativa Water System for domestic purposes shall meet all Maximum Contaminant levels (MCLs) established by the Division. If the water quality does not comply with the California Drinking Water Standards, additional treatment shall be provided to meet standards. The plans and specifications for the proposed treatment facilities shall be submitted to the Division for review and approval prior to construction.

7. The LA County PW shall monitor all groundwater sources listed in Table 1 in accordance with Title 22, Chapter 15, CCR and the Division's most recent Vulnerability Assessment and Monitoring Frequency Guidelines.

8. Except for bacteriological analyses and constituents without chemical storet numbers, all water quality monitoring results obtained at a certified laboratory shall be submitted to the Division by Electronic Data Transfer using the appropriate Primary Station (PS) Codes. Analytical results of all sample analyses completed in a calendar month shall be reported to the Division no later than the tenth day of the following month.

9. The LA County PW shall notify the governing body of the local agency in which users of the drinking water reside (i.e. city council and county board of supervisors) when a notification level is exceeded in drinking water that is provided to consumers.

Operator Certifications

10. The distribution system and treatment facilities shall be operated by personnel who have been certified in accordance with Chapter 13, Title 22, CCR, *Operator Certification Regulations*. The chief and shift operator(s) for the Sativa Water System's distribution facilities shall have, at minimum, D2 and D1 certifications, respectively. The minimum certification requirements for all disinfection facilities for which no *Giardia* or Virus reduction is required shall either be certified distribution operators or certified treatment operators that have been trained to operate these facilities.

Cross-connection Control Program

11. The LA County PW shall comply with Title 17, CCR, to prevent the Sativa Water System and its facilities from being contaminated by possible cross-connections. The LA County PW shall maintain a program for the protection of the domestic water system against backflow from premises having dual or unsafe water systems in accordance with Title 17. All backflow prevention assemblies shall be tested annually.

Direct Additives

12. The LA County PW shall only use additives that have been tested and certified as meeting the specifications of NSF International/American National Standard Institute (NSF/ANSI) Standard 60. This requirement shall be met under testing conducted by a product certification organization accredited for this purpose by ANSI.

Indirect Additives

13. The LA County PW shall only use chemicals, materials, lubricants, or products that have been tested and certified as meeting the specifications of NSF/ANSI Standard 61 in the production, treatment or distribution of drinking water that will result in its contact with the drinking water, including process media, protection materials (i.e. coating, linings, liners), joining and sealing materials, pipe and related products, and mechanical devices used in treatment/transmission/ distribution system, unless conditions listed in Section 64593, Title 22, CCR are met. This requirement shall be met under testing conducted by a product certification organization accredited for this purpose by ANSI.

Active Wells

14. Well 3 does not have an annular seal. LA County PW shall keep the well site clean and secured at all times to prevent contamination from outside sources and elements. In addition, LA County PW shall monitor the well for coliform bacteria monthly.

Chloramines

15. The LA County PW shall inform the public served by Sativa Water System the possibility of receiving chloraminated water. The LA County WP shall reach out to kidney dialysis facilities, if any, and home patients to ensure their treatment units can remove chloramines. The LA County PW shall answer questions that the general public and dialyses centers may have.

16. Since Liberty Utilities has indicated the intention to switch to 100 percent imported surface water from MWDSC, which contains chloramines, when groundwater alone

cannot meet the system demand. The LA County PW shall develop and implement a transition plan to address the potential water quality issues, in case water imported from Liberty Utilities containing chloramines. If the Sativa Water System needs to rely on chloraminated water for an extended period, the LA County PW shall develop a nitrification monitoring and control plan. Special water quality parameters sampling and lead and copper tap sampling shall be conducted to ensure the switch does not cause adverse impact on lead and copper leaching in the area receiving chloraminated water from the interconnection.

17. The Sativa Water System shall comply with the minimum residual requirements of the Surface Water Treatment Rule during the time the water system receives treated surface water.

Chlorination Facilities

18. Within **90 days** of receiving this permit, the LA County PW shall submit to the Division the revised Emergency Chlorination Plan for review and approval. The revised plan shall reflect the current chlorination facilities at Wells 3 and 5.

19. The LA County PW shall maintain the following daily operation records of the chlorination facilities at Wells 3 and 5:

    - current dosage rate, in mg/L, and chlorine consumption in lbs./day,
    - amount of water treated in each well in gallons per day or MG/day
    - chlorine residuals test results
    - unusual conditions, mechanical problems, emergencies, or unusual test results

Hydropneumatic Tanks

20. The hydropneumatic tanks shall be disinfected and sampled for bacteriological quality in accordance with AWWA procedures and standards, when placed back to service after repairs and routine maintenance.

Minimum Pressure Requirement

21. The LA County PW shall continue to evaluate if the current source, storage and pipeline capacities are adequate to meet the fire flow requirement and the minimum system pressure requirement (20 psi) at the same time; if not, more improvement should be planned.

Water System Operation and Maintenance Plan

22. The LA County PW shall ensure that all water produced from each source is reliably measured to determine total production. The flow meters at each site shall be calibrated annually.

23. The LA County PW shall notify the Division by telephone immediately upon discovery of any condition judged to create a significant potential or existing health hazard to users. Such conditions include, but are not limited to actual or threatened sabotage, vandalism and/or water outages, which result from inadequate source, storage and/or pumping capacity or any other unplanned loss of system pressure.

Emergency Response Plan

24. The LA County PW shall update Sativa Water System's Emergency Response Plan. The updated plan shall be submitted to the Division within 120 days of receiving this permit.

Annual Reports

25. The LA County PW shall submit Annual Reports on the status and condition of the Sativa Water System, as directed by the Division

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APPENDIX A

SATIVA WATER SYSTEM CONSOLIDATION DOCUMENTS OF MARCH 19, 2019

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

MARK PESTRELLA, Director

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (626) 458-5100
http://dpw.lacounty.gov

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

June 19, 2019

IN REPLY PLEASE
REFER TO FILE: SWP-0

TO: Paul Novak, Executive Director
Local Agency Formation Commission

FROM: Mark Pestrella
Director of Public Works

SATIVA WATER SYSTEM
QUARTERLY REPORT ENDING JUNE 2019

In accordance with Resolution No. 2019-00RMD of the Local Agency Formation Commission for Los Angeles County, attached is the first quarterly report on the County of Los Angeles' temporary management of the Sativa Water System.

Please address any questions regarding this report or other matters concerning the Sativa Water System to Deputy Director, Daniel J. Lafferty. Mr. Lafferty can be reached at dlaff@pw.lacounty.gov or (626) 458-4012.

RB:me
P:\swppub\Secretarial\2019\SATIVA\June 2019 Quarterly Report to LAFCO 06.01.19.docx

Attach.

Sativa Water System
LAFCO Quarterly Report
March 19, 2019 to June 19, 2019

On March 19, 2019, the Sativa Water System (Sativa) was consolidated with Los Angeles County (County). This report summarizes notable actions taken by the County during the first quarter of its temporary management of Sativa.

PROVISIONS OF RETAIL WATER SERVICE

The County continues to provide water service to Sativa's 7,000 customers and to oversee day-to-day management of the water system.

Water Quality Testing

State-mandated water quality testing of Sativa's water continued during this reporting period. Certified tests continued to show that Sativa's water meets all Primary Drinking Water Standards and is safe to drink. However, those same tests continued to show that Sativa's water was near and occasionally slightly above Secondary Drinking Water Standards for manganese. Secondary standards are set on the basis of aesthetic concerns such as taste, odor, and color.

Brown Water Research

The County continued to conduct various diagnostic tests to determine the source of Sativa's brown water. Testing showed brown water conditions were intermittent and loosely correlated with sudden changes in circulation patterns, periods of high demand, and other disturbances to their distribution system. Over time, the source of the brown water was tracked back to Sativa's wells. It's believed that over many years, sediment and other material from the wells have built up in their distribution system and when disturbed, mix with the water created a brown tint.

Sativa's water system has little to no resiliency. The system has no storage tanks to store water when their wells are offline, and both of their wells must be in operation in order to meet peak water demand from customers. Because of this, the wells cannot be taken offline to continue diagnostic testing and confirm they are the source of the brown water. Additionally, because the wells are believed to be the source of the brown water, well water cannot be used to conduct flushing of Sativa's distribution system to remove the built up sediment.

Financial Audit

The County completed preparations for a financial audit of Sativa's Fiscal Year 2017-18 activities and hired a Certified Public Accountant (CPA) firm to conduct the independent financial audit. The CPA firm is expected to complete their work by the end of June 2019.

The final audit report, including all of the auditor's findings, will be published online, made available to Sativa's customers and the public, and a copy will be provided to LAFCO.

Staffing

As of the end of this reporting period, two of the original six Sativa employees remain employed by Sativa. The County is operating Sativa with temporary contract employees and support from the County workforce as necessary. The remaining Sativa employees and contract staff have gone through the County's standard process for background checks.

Lawsuits

Prior to the County becoming the Administrator of Sativa, a class action lawsuit Martha Barajas, et al v Sativa LA County Water District, et al. case no, BC713381 (Barajas v Sativa) was filed by a few ratepayers of Sativa regarding the water quality and other claims. On April 29, 2019, after the County became the successor agency, the County was named a defendant in the Barajas v Sativa matter. The County is having to defend itself in this action as the successor agency notwithstanding that Health and Safety Code section 116687 subsection (f) purports to provide immunity to the successor agency.

CAPITAL IMPROVEMENTS

An alternate source of water supply must be established before the cause of brown water conditions can be addressed. As soon as this became clear, the County immediately shifted its focus to establishing an interconnection with an adjacent water system to bring new water supply to Sativa.

Interconnection with City of Compton

Sativa has an existing interconnection for emergency water supply with the City of Compton. However, because of infrastructure issues, the City of Compton has not been able to provide water to Sativa for a considerable period of time. The County worked with the State Water Board to address the situation and as of May 7, 2019, the interconnection is back online. While this is good news for system resiliency, Sativa's agreement with the City of Compton requires Sativa to be billed for any water received at Compton's standard customer rates. It would be cost-prohibitive to use this interconnection for system flushing or other non-emergency purposes.

Interconnection with Liberty Utilities

Prior to the County's appointment as Administrator, Sativa was in negotiations with Liberty Utilities to construct an interconnection between Liberty Utilities' water system and Sativa's. However, the project stalled, and the interconnection was not constructed. After taking over operations, the County restarted negotiations and Liberty Utilities agreed to

temporarily provide continuous water supply to Sativa until conditions at Sativa stabilized. An acceptable billing arrangement was negotiated, and a formal agreement was executed. Construction began in early April 2019. It is estimated the interconnection will be online and Sativa will be able to begin serving customers with this new clean water source in mid-July 2019.

Once the interconnection with Liberty Utilities is online, the resiliency of Sativa's water system will be greatly increased. Diagnostic testing can resume and much needed system maintenance activities like flushing out the brown water causing sediment can begin.

Flushing Program

Sativa's distribution system has a number of operational challenges, which make traditional flushing techniques less effective. In April 2018, Sativa attempted to flush out the sediment in their pipes. Due to a number of factors, that work resulted in a massive system-wide brown water incident. Flushing was immediately stopped, an emergency was declared, and bottled water was temporarily provided to all Sativa customers.

Flushing work must be completed in order to improve the brown water situation at Sativa. However, the County is concerned that resuming flushing work may cause another system-wide brown water incident. County experts have consulted with experts from other water agencies and the State Water Board about the best way to carry out a flushing program at Sativa. In order to minimize the possibility of another system-wide brown water incident, the County has decided to partner with a vendor that uses cutting-edge technology and a patented process to carry out a new flushing method. Additionally, flushing work will be done between 10 p.m. and 5 a.m., the period of lowest water usage, to minimize impacts to customers. Customers will be notified before flushing activities begin.

Flushing of Sativa's distribution system is being scheduled for immediately after the interconnection with Liberty Utilities is online, likely in mid-July, and will be carried out over a period of 3 weeks.

Upcoming Work

Once the interconnection is online and flushing of the distribution system has been completed, the County can begin construction of infrastructure improvements.

- Well and Pipeline Repairs – The County has secured a grant from the State Water Board to rehabilitate Sativa's wells and to repair damage to a key segment of pipeline. Refer to the GRANTS section for additional information. This work is planned for fall 2019.

- Manganese Treatment System – Prior to the County's appointment as Administrator, the Water Replenishment District agreed to explore installation of a manganese treatment system at Sativa's well. A technical evaluation study of methods for manganese removal was completed, but additional work was put on hold due to Sativa's deteriorating administrative situation. After taking over operations, the County reached out to the Water Replenishment District and they agreed to restart their work. The Water Replenishment District has since completed the California Environmental Quality Act process for the project and is now designing the treatment system. Design is estimated to be completed by fall 2019. The County is currently pursuing grant funds for construction of the treatment system through the State Department Water Resources' Integrated Regional Water Management (IRWM) Program. Please see GRANTS Section of this report.

GRANTS

In June 2018, the State Water Board issued a compliance order to Sativa to develop a corrective action plan for known operational issues at Sativa. A draft plan was prepared and it was determined the estimated cost for Sativa to address the issues was approximately $14 million (note: Sativa's annual revenue is approximately $1.4 million). Immediately upon being appointed Administrator, the County carried out a rapid assessment of Sativa's infrastructure and determined the extent of operational issues at Sativa was far in excess of what was known by the State Water Board. That list continued to grow in length and severity over the following months.

State Water Board – Infrastructure Grant

The County has aggressively pursued grant funding from the State Water Board for Sativa's infrastructure issues. After a series of negotiations, the State Water Board recommended the County receive $1.77 million in grant funds to address the most serious infrastructure issues at Sativa. A grant agreement is now being prepared. Grant funding will be allocated as follows:

- Pipeline Repair: $600,000 – Repair damage to a critical segment of Sativa pipeline under the Blue Line railroad tracks.

- Well Rehabilitation: $350,000 – Disassemble, clean, and repair the major components of Sativa's two wells.

- Electrical/Mechanical Replacements at Well Sites: $175,000 – Completely replace all electrical systems and mechanical equipment used to pump water from Sativa's two wells.

- Chlorination System Conversion: $60,000 – Replace or rebuild Sativa's chlorination system to be safer and more secure.

- Supervisory Control and Data Acquisition (SCADA) System: $120,000 – Install technology at Sativa's wells to allow remote monitoring and remote control of operations.

- Associated Design and Administration: $465,000

Preparations for the above bulleted work is currently underway. Construction is planned for fall 2019.

State Water Board – Training for Sativa Staff

The County has also aggressively sought support from the State Water Board to provide training to Sativa's field staff on best practices for maintenance techniques, safety procedures, and other field issues. While not technically a grant, the State Water Board was able to identify an existing training program and assign trainers to Sativa. Training will occur over six, half-day sessions and is being conducted on-site at Sativa. The first two training sessions occurred in late May and early June 2019. The remaining four sessions are scheduled and will be completed by August 2019. The training is conducted at no cost to the County.

State Department of Water Resources – Manganese Removal Grant

The County has applied for grant funding from the State Department of Water Resources' IRWM Program for a manganese treatment system for Sativa. The application process has multiple stages. This project has been well received by reviewers and has passed the first stages of the application process. It is expected the State Department of Water Resources will make a final decision on grant awards in late 2019.

COMMUNITY ENGAGEMENT

Building trust with Sativa's customers is one of the County's highest priorities at Sativa. In addition to improving customer service, the County is working on building trust through sharing information with customers and improving transparency of its operations. The following notable community meetings and customer service improvements were carried out.

Community Meetings

During this reporting period the County met multiple times in small group settings with Community leaders. A large-scale community meeting and open house event was held on May 18, 2019. In order to improve attendance, the meeting was held on a Saturday and food and music were provided. English and Spanish invitation flyers were sent out with customer bills and a 4 foot by 12-foot banner was hung outside Sativa's office building. The County also arranged for the flushing vendor to attend and bring one of

their actual pumping and filtration trailers for customers to inspect. As always, Spanish translation of speakers and presentation materials was provided.

While updates were provided on the audit of Sativa's financial records and there was discussion regarding the identification of a permanent service provider to take over operation of Sativa, the main theme of this community meeting was preparing Sativa's customers for the impacts of upcoming work on Sativa's distribution system. Customers were walked through construction, flushing activities, and advised of possible service interruptions and brown water spikes. The County also shared that it was preparing an emergency response plan in the event of a system-wide brown water spike.

At the conclusion of the meeting, in an effort to further break down barriers and build trust, attendees were taken on a tour of Sativa's office and adjacent facilities.

Customer Service

Installation of a 24-hour payment box – A secure payment box was installed in the exterior wall of Sativa's office building. Customers can now pay their Sativa water bill in person with cash, money order, or check 24 hours a day, 365 days a year. Prior to installation of the 24-hour payment box, customers paying in person could only do so during business hours. Flyers in English and Spanish advising customers of the 24-hour payment box were included with customer bills.

Clarification of Billing Policies – In response to customer concerns that Sativa's former Board of Director had not been applying fees and charges uniformly, the County created a flyer notifying customers of Sativa's billing policies. The flyer included information on how and when late fees and shutoff fees are applied, how customers are notified of water service shutoff due to failure to pay their bill, and advised customers that Sativa's billing policies would be applied uniformly to all customers without exception. The flyer was written in English and Spanish and was posted on the Sativa website and included with customer bills.

Signage – Large informational signs in English and Spanish have been installed on the exterior of Sativa's office building. These signs advise Sativa customers of Sativa's business hours, the various methods customers can use to pay their Sativa water bills, and the telephone number for water emergencies.

Customer Newsletters

Beginning in April, the County started publishing a monthly newsletter that summarizes recent and upcoming activities at Sativa. Topics have included progress on brown water issues, upcoming construction, new methods for customers to pay their water bill, the financial audit, and others. The newsletter is included with customer bills and is written in both English and Spanish.

BOARD OF SUPERVISORS ACTIONS

At their May 14, 2019 meeting, the Board of Supervisors unanimously approved a Motion by Supervisors Mark Ridley-Thomas and Janice Hahn directing County staff to identify and provide funding for the County's temporary operation of Sativa.

The motion indicated that the cost to the County to serve as Interim Administrator and then Successor Agency is estimated to be $13.8 million through June 2021. However, Sativa's revenue and the grant funds secured by the County are projected to only be $5.7 million. The County will use $8 million of its general funds to close the gap.

IDENTIFICATION OF A PERMANENT WATER SERVICE PROVIDER (RFP PROCESS)

The County has identified and brought onboard a team of experts familiar with the processes required to identify a permanent water service provider for Sativa and then transfer operation of Sativa to that entity. The permanent service provider will be identified through a Request for Proposals (RFP) process.

Work has begun to prepare a water system evaluation report. The report will provide an inventory of Sativa's assets and debts including infrastructure facilities, water rights, real estate, contract obligations, and fixed assets; a summary of upcoming infrastructure improvements; and other relevant information. Once the report is completed, that information will be used to conduct an appraisal and valuation of Sativa.

Work is also underway to develop criteria that will be used to evaluate proposers' ownership and operating qualifications and as a basis for ranking of proposals.

The report, appraisal, evaluation criteria, and other information will be assembled into a bidder's notebook. The notebook will serve to provide sufficient information to proposers about Sativa, allowing for responsive and complete proposals. The bidder's notebook will be made available to governmental agencies and investor owned utilities.

A schedule is under development for the RFP bid solicitation process to become Sativa's permanent service provider. The following are tentative dates for milestone activities:

- RFP Issued: mid-fall 2019
- Proposals Due: late 2019
- Evaluation of Proposal Complete: early 2020
- Target Board of Supervisors Meeting Date: late winter 2020
- Transfer to permanent water service provider: late winter 2020 to mid- 2021.

CALIFORNIA PUBLIC UTILITIES COMMISSION APPROVAL OF A PERMANENT WATER SERVICE PROVIDER (IF APPLICABLE)

If an investor owned utility is selected as Sativa's permanent water service provider, that entity will be required to submit an application to the California Public Utilities Commission (CPUC) requesting approval to take over operation of Sativa. The CPUC approval process could last up to 18 months. The identification of a permanent water service provider has not been completed; therefore, CPUC has no role in Sativa at this time.

RESOLUTION NO. 2019-02RMD

A RESOLUTION OF THE LOCAL AGENCY FORMATION COMMISSION FOR THE COUNTY OF LOS ANGELES MAKING DETERMINATIONS APPROVING AND ORDERING DISSOLUTION NO. 2018-09 OF THE SATIVA COUNTY WATER DISTRICT

BE IT RESOLVED by the Local Agency Formation Commission for the County of Los Angeles (the "Commission"), that;

WHEREAS, the Sativa County Water District ("Sativa" or "District") was incorporated by the State of California Secretary of State on December 30, 1938, under the County Water District Law; and

WHEREAS, Sativa is a legally-established county water district pursuant to Division 12 of the State of California Water Code; and

WHEREAS, the affected territory includes all land within the boundaries of Sativa, the boundaries of which are found to be definite and certain, as depicted in the map attached as Exhibit "A" to the Executive Officer's staff report dated February 13, 2019 ("staff report"); and

WHEREAS, the affected territory within the boundaries of Sativa is inhabited as defined in Government Code § 56046; and

WHEREAS, the Commission initiated the proposed dissolution of Sativa by adopting a resolution of application pursuant to Government Code § 56375(a)(2)(B) at its meeting of July 11, 2018 for a change of organization to dissolve Sativa ("Proposal"); and

WHEREAS, the proposed dissolution is being considered because, for many years, if not decades, the District has suffered from financial, managerial, operational, and governance challenges; and

WHEREAS, at the July 11, 2018 Meeting, and in accordance with Government Code § 56375(a)(3), the Commission adopted the determinations specified in Government Code § 56881(b) that the public services costs are likely to be less than or substantially similar to the cost of alternative means of providing the service and that this action will promote public access and accountability for community service needs and financial resources; and

WHEREAS, the territory within the boundaries of the Sativa County Water District consists of approximately 180 acres with approximately 1,300 water service connections located within a residential area in the unincorporated community of Willowbrook and three small non-contiguous areas within the City of Compton; and

WHEREAS, the Commission is required, pursuant to Government Code § 56000 *et seq* (the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000), to determine and update, as necessary, the Sphere of Influence (SOI) of each local agency, as provided in Government Code §56425(a), and to review and update each SOI as necessary, every five years thereafter, as provided in Government Code § 56425(g); and

WHEREAS, the Commission adopted a Coterminous Sphere of Influence, wherein the boundaries of the District and its SOI are the same, for Sativa, on October 24, 1984; and

WHEREAS, the Final Municipal Services Review ("MSR") for Water Services for the Gateway Region (in which Sativa is located) in November of 2005 was prepared pursuant to Government Code §§ 56425 and 56430; and

WHEREAS, the Final MSR for Water Services for the Gateway Region in November of 2005 recommended that the Commission adopt a Zero Sphere of Influence for the District, but

based upon public testimony, the Commission approved the November 2005 MSR for Sativa and confirmed the District's Coterminous SOI on February 22, 2006; and

WHEREAS, the August 2012 Sativa County Water District MSR was prepared pursuant to Government Code §§ 56425 and 56430; and

WHEREAS, the August 2012 Sativa County Water District MSR recommended that the Commission adopt a Zero SOI and consolidate the District; and

WHEREAS, on May 14, 2014, the Commission adopted the Round 2 MSR and SOI Update and assigned a Zero Sphere of Influence for the District; and

WHEREAS, the proposed dissolution of the District is consistent with the Zero Sphere of Influence for the District, and, further, implements the Commission's original intent when the Zero SOI designation was adopted; and

WHEREAS, Government Code § 56035 defines dissolution as "the disincorporation, extinguishment, or termination of the existence of a district and the cessation of all its corporate powers, except as the Commission may otherwise provide pursuant to § 56886 or for the purpose of winding up the affairs of the district;" and

WHEREAS, on June 1, 2018, the State Water Resources Control Board (SWRCB) issued Compliance Order No. 04_22_18R_003 to the District, wherein the SWRCB determined that the District had violated the California Safe Drinking Water Act by providing water to customers that exceeded secondary drinking water standards for discoloration (turbidity) and by failing to maintain adequate water pressure at four fire hydrants during flushing procedures; and

WHEREAS, on October 31, 2018, the SWRCB appointed Los Angeles County ("County") as the State Administrator for the District, pursuant to § 116687 of the Health and Safety Code; and

WHEREAS, concurrent to the SWRCB appointment of the County as State Administrator, the Sativa County Water District Board of Directors ceased to exist; and

WHEREAS, on November 1, 2018, a representative of the County Department of Public Works staff assumed full administrative, managerial, and financial control of the District, and has been operating the District from that time to the present; and

WHEREAS, Revenue and Taxation Code § 99 requires an agreement for the exchange of property tax revenues in the event of a jurisdictional change of local agencies; and

WHEREAS, the County Board of Supervisors adopted the property tax transfer resolution, determining that there will be no exchange of property tax revenue from the proposed dissolution because the District does not currently receive any share of the ad valorem (1%) property taxes; and

WHEREAS, pursuant to Government Code § 56658(f), the Executive Officer issued the Certificate of Filing on December 18, 2018; and

WHEREAS, pursuant to Government Code § 56658(h), which requires that the public hearing be set within 90 days of issuance of the Certificate of Filing; the Executive Officer set the Proposal for hearing on Wednesday, February 13, 2019, at 9:00 a.m., at the County Board of Supervisors Hearing Room, Kenneth Hahn Hall of Administration Room 381-B, located at 500 West Temple Street, Los Angeles, California, 90012; and

WHEREAS, notice of the Commission's review of this Proposal was advertised (English language version) in the Daily Commerce on December 20, 2018; and advertised (English language version) in the Compton Bulletin on December 26, 2018; and advertised in La Opinión (Spanish language version) on December 25, 2018; all of which are newspapers of general circulation within Los Angeles County, pursuant to Government Code § 56153; and that said publication occurred at least twenty-one (21) days prior to the date of the February 13, 2019 public hearing, pursuant to the requirements of Government Code § 56154; and

WHEREAS, notice (English language version and Spanish language version) of the Commission's review of this Proposal was sent first class, and deposited, postage prepaid, in the United States Mail, pursuant to Government Code § 56155; to all landowners within the affected territory, to all landowners within 300 feet of the exterior boundary of the affected territory, to all registered voters within the affected territory, and to all registered voters within 300 feet of the exterior boundary of the affected territory, pursuant to Government Code § 56157 (d) and (f); and that said notice was mailed at least 21 days prior to the date of the February 13, 2019 public hearing, pursuant to the requirements of Government Code § 56156; and

WHEREAS, the Executive Officer has reviewed the Proposal and prepared a report, including recommendations thereon, the Proposal and report having been presented to and considered by the Commission; and

WHEREAS, the Commission called for and held a public hearing on February 13, 2019, the hearing having been held on the date and at the time and place noticed therefore, and,

after all parties wishing to testify before the Commission were sworn in, the Commission heard, received, and considered all oral and written comments and evidence which were made, presented, or filed, and all persons were given an opportunity to hear and be heard with respect to the Proposal and the Executive Officer's report; and

WHEREAS, the Commission has considered all factors pursuant to Government Code § 56668, the staff report, and the "Sativa County Water District Plan of Services (aka 'Sativa Los Angeles County Water District') Pursuant to Government Code § 56653" ("Plan of Services"), attached as Exhibit "I" to the staff report.

NOW, THEREFORE, IN CONSIDERATION OF THE FOREGOING, BE IT RESOLVED as follows:

1. This resolution making determinations is made pursuant to the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000, California Government Code § 56000 *et seq*;
2. The Proposal is assigned the following short-form designation: "Dissolution No. 2018-09 of the Sativa County Water District;"
3. The boundaries of the District are as they exist on February 13, 2019, and as depicted on the map in Exhibit "A" attached to the staff report;
4. The dissolution is consistent with the Zero Sphere of Influence adopted by the Commission on May 14, 2014;
5. The Commission finds that the proposed dissolution is exempt from the California Environmental Quality Act (CEQA) pursuant to State CEQA Guidelines § 15061, because

it can be seen with certainty that there is no possibility that the dissolution of the District will have a significant effect on the environment;

6. The Commission finds that the dissolution of the District is not a project for purposes of CEQA because it is an organizational activity of government with no direct nor indirect effects on the physical environment, pursuant to § 15378(b) of the State CEQA Guidelines;

7. Pursuant to Government Code Section 56881(b)(1), the Commission hereby determines that the public service costs of a proposal that the Commission is authorizing are likely to be less than or substantially similar to the costs of alternative means of providing the service, in that the successor agency has, and a future long-term service provider will have, the necessary extensive and documented financial, technical, and management capabilities relative to providing retail water service consistent with all federal, state, and local water quality standards, and that the successor agency and future service provider will bring significant resources to bear in order to address the infrastructure deficiencies, operational shortcomings, and accounting inconsistencies formerly perpetrated by Sativa's board of directors and staff;

8. Pursuant to Government Code Section 56881(b)(2), the Commission hereby determines that the proposed dissolution will promote public access and accountability for community service needs and financial resources, in that the Commission has designated a successor agency, the County, which has a documented history of being accessible to the public, and conducting its affairs in a transparent manner, and the

County as successor agency will require the future long-term service provider to conduct its affairs in a transparent manner, in contrast to the prior practices of Sativa's board of directors and staff;

9. The Commission hereby dissolves the Sativa County Water District, subject to the following terms and conditions:

   a. The dissolution of the District is not subject to majority protest nor election procedures, pursuant to Health and Safety Code § 116687 (c)(3), which provides that this dissolution "shall not be subject to the provisions of § 57113 of the Government Code, nor to any other requirement for a protest proceeding or election," and "[t]he commission shall not impose any condition on the successor agency that requires a protest proceeding or an election;"

   b. The dissolution is subject to completion of the 30-day reconsideration period provided under Government Code § 56895, and said reconsideration period ends at 5:00 p.m. on Monday, March 18, 2019;

   c. In accordance with Government Code §§ 56886(p) and 57202, the effective date of the dissolution of the District is the date of recordation of the Certificate of Completion with the Los Angeles County Registrar-Recorder/County Clerk;

   d. Upon the effective date, the District will be dissolved, disincorporated, and extinguished, and all of its corporate powers shall cease;

   e. Upon the effective date, the County shall be the successor agency for the District, for the purposes of succeeding to all of the rights, duties and obligations of the

District with respect to enforcement, performance, or payment of outstanding bonds or other contracts and obligations of the District and winding up the affairs of the District pursuant to Government Code §§ 56886(m) and 57451(c) and subject to Health and Safety Code §116687;

f. The County shall provide retail water service within the affected territory pursuant to the Plan of Services, until such time as an alternative service provider is identified and service responsibility is transferred to that provider;

g. All of the moneys or funds, including cash on hand and moneys due but uncollected, and all property, real or personal of the District is vested in the County as the successor agency for the purpose of winding up the affairs of the dissolved District pursuant to Government Code §57452;

h. As the successor agency, and upon the effective date, and for the sole and exclusive purpose of winding up the affairs of the dissolved District, the County shall have the power to exchange, sell, or otherwise dispose of all property, real and personal, of the District; to compromise and settle claims of every kind and nature; to sue or be sued in the same manner and to the same extent as the District and the officers and legislative body of the dissolved District, to the extent permitted by law pursuant to Government Code § 57453 and subject to Health and Safety Code § 116687(f);

i. All property tax revenues and voter-approved special tax or special assessment revenues (if any), received or receivable by the District as of the effective date shall

be collected or collectible by the County, to be used for the purposes for which said taxes or special assessments were imposed;

j. Subject to any authorizations provided in Health and Safety Code § 116687, until payment or provision for payment of amounts owing on account of outstanding bonds, contracts, or other obligations that are outstanding upon the effective date of the dissolution, which are payable in whole or in part from the revenues of a revenue-producing enterprise of the District, the County, prior to distribution, or any city or county, after distribution, shall not sell, encumber or otherwise dispose of all or any part of the revenue-producing enterprise or the revenues derived from that enterprise, except as expressly authorized by the ordinance, resolution, or indenture authorizing or providing for the issuance of any bonds, contracts, or other obligations. Prior to distribution, the County shall succeed to all rights and liabilities of the dissolved District under the ordinance, resolution or indentures authorizing such bonds, contracts or other obligations and may sue or be sued upon those rights and liabilities in the same manner and to the same extent as the dissolved District;

k. The ownership, possession, and control of all books, records, papers, offices, equipment, supplies, moneys, funds, appropriations, licenses, permits, entitlements, agreements, contracts, claims, judgments, land, infrastructure, and other assets, 474 acre feet of adjudicated water rights in the Central Basin, priorities of use, right of use of water, capacity rights of public improvements or facilities, and property, real or personal, owned or leased by, connected with the administration of, or held for

the benefit or use of, the District, shall be vested in the County as the successor agency, and shall be administered to wind up the affairs of the District;

l. Said books, records, papers, offices, equipment, supplies, moneys, funds, appropriations, licenses, permits, entitlements, agreements, contracts, claims, judgments, land, infrastructure, and other assets and property, real or personal, owned or leased by, connected with the administration of, or held for the benefit or use of, the District, includes, but is not limited to, the following:

Water Rights:

Four hundred seventy-four (474) acre feet of adjudicated Central Basin water rights;

Real Property:

1. Grant Deed recorded March 21, 1952 as Document No. 94 in Book 38524 Page 35 of Official Records, Lots 1 and 2 in Block D of Tract 4631, as per map recorded in Book 49 page 90 and 91 of Maps, AIN 6152-019-900;

2. Grant Deed recorded June 1, 2009 as Document No. 20090807841 of Official Records, Lots 46 and 47 in Block D of Tract 4631, as per map recorded in Book 49 page 90 and 91 of Maps, AIN 6152-019-901;

3. Grant Deed recorded December 23, 1943 as Document No. 1822 in Book 20440 Page 384 of Official Records, Lots 18 and 19 in Block 8 of the East Richland Tract, as per map recorded in Book 10 Page 1 of Maps, AIN 6154-010-900;

4. Grant Deed recorded July 1, 1992 as Document No. 92-1204743 of Official Records, Lots 58 and 58 in Block M of Tract 4631, as per map recorded in Book 49 page 90 and 91 of Maps, AIN 6155-005-900 and 6155-005-901;

Real Property (continued):

5. Grant Deed recorded October 26, 1940 as Document No. 189 in Book 17899 Page 280 of Official Records, Lots 35 and 36 in Block Q or Tract No. 4631, as per map recorded in Book 49 page 90 and 91 of Maps, AIN 6155-017-900;

Vehicles:

1. 2000 Ford F250 (VIN 1FTNF20L3YBC85558);
2. 2008 Nissan Frontier (VIN 1N6BD06T78C426127);
3. 2005 Chrysler Town & Country (VIN 2C4GP44R75R227368);

m. Consistent with Government Code § 57462, the funds "of a dissolved district which have been impressed with any public trust, use or purpose shall continue to be so impressed;"

n. Consistent with Government Code § 57463, any funds, money or property of the dissolved District may be used by the County for the purpose of winding up the affairs of the District, and after any distribution to any city, County or district, so far as practicable, the funds, money or property shall be used for the benefit of the lands, inhabitants, and taxpayers within the territory of the dissolved District.

o. The County shall comply with all existing obligations and commitments to existing employees, consistent with State law, any existing employment agreements or contracts, and any adopted personnel policies, however this condition is not to be construed as creating an employment relationship between the County as the successor agency and any employee(s) of the District;

p. The County shall "represent the interests of the public and the ratepayers within the former territory of the district," pursuant to Health and Safety Code § 116687(c)(4);

q. Within one hundred twenty (120) days of the effective date of the dissolution, and consistent with authority granted in Health and Safety Code § 116687(c)(4), the County as the successor agency shall issue a Request for Proposals ("RFP"), or equivalent, to solicit proposals to provide long-term water service for the customers of the dissolved District;

r. If additional time is required to comply with Condition 9.q., above, the County shall notify the Commission in advance, in writing, with an anticipated schedule for completion;

s. Consistent with language in Health and Safety Code § 116687(c)(4), which authorizes the successor agency to solicit proposals "in consultation with the commission," the County shall appoint a LAFCO representative (or representatives) to the evaluation committee (or equivalent) which reviews all RFP submittals and makes a recommendation to the Los Angeles County Board of Supervisors, unless said appointment is prohibited by law;

t. Consistent with its efforts to "represent the interests of the public and the ratepayers within the former territory of the district," and in making its recommendation to the Board of Supervisors, the County shall consider the proposed rate structures submitted in responses by bidders to the RFP, unless said consideration is prohibited by law;

u. Within the RFP, the County shall require all bidders to include:

   i. a projection of water rates following acquisition of the system;

   ii. anticipated schedule for design, funding, and construction of capital projects as described in the RFP;

   iii. a proposed schedule, identifying key milestones and anticipated completion dates, for submittal, consideration, and approval of the bidder's application to the California Public Utilities Commission (CPUC) to expand the bidder's existing, authorized service territory as currently approved by the CPUC, if applicable, as described in the RFP;

   iv. a community outreach program, defining how the successful bidder intends to communicate with Sativa ratepayers upon acquisition of the system and thereafter;

v. The County shall convene meetings with the community no less than four (4) times per year, until the County completes the RFP process, selects a long-term operator of the system, and/or the CPUC provides approval of the bidder's application to the CPUC to expand the bidder's existing, authorized service territory as currently approved by the CPUC, if applicable;

w. The County shall maintain, and regularly update, a website, which shall contain the following information and documents:

   i. Staff contact information, including telephone number, e-mail addresses, and hours of operation;

ii. Information about the District's location, service territory, and contact information for the County Department of Public Works staff overseeing the dissolved District;

iii. Information about establishing service and paying bills;

iv. Notice of all upcoming community meetings, with notice posted to the website at least ten (10) days before each community meeting;

v. Information, schedule (critical dates/milestones), and progress reports concerning the RFP;

x. Upon the effective date of this dissolution, and at the conclusion of each ensuing quarter year (every ninety (90) days) thereafter, the County shall provide the Commission with written reports that contain the following:

i. Documenting the County's provision of retail water service to customers of the former District;

ii. the status of capital improvements;

iii. information concerning any grant applications or awards;

iv. a summary of recent community meetings;

v. any actions taken by the Board of Supervisors concerning the former District;

vi. the status of the RFP process; and

vii. the status of the successful bidder's application and approval by the CPUC, if applicable;

The County shall provide said written reports until the completion of the RFP process and selection of a long-term operator of the system, and/or the effective date of the CPUC approval of the bidder's application to the CPUC to expand the bidder's existing, authorized service territory as currently approved by the CPUC, if applicable;

10. The Executive Officer is hereby authorized and directed to mail certified copies of this resolution as provided in Government Code § 56882; and
11. As allowed under Government Code § 56107, the Commission hereby authorizes the Executive Officer to make non-substantive corrections to this resolution to address any technical defect, error, irregularity, or omission.

PASSED AND ADOPTED this 13th Day of February 2019, by the Commission, by the following

MOTION:	Hahn SECOND: Mirisch APPROVED: 9-0-0
AYES:	Barger, Close, Dear, Hahn, McCallum, Mirisch, Mitchell (Alt. for Finlay), Smith, Gladbach
NOES:	None.
ABSTAIN:	None.
ABSENT:	Finlay

LOCAL AGENCY FORMATION COMMISSION FOR THE COUNTY OF LOS ANGELES

PAUL A. NOVAK, AICP, Executive Officer

APPENDIX B

COMPLETED STAFF TMF ASSESSMENT REVIEW FORM

TMF Assessment Review Form for Change of Ownership or New Water System

Water System Name: Los Angeles County Department of Public Works – Sativa Water System	**System Number**: CA1910147
Assessment Type: ☒ Change of Ownership ☐ New Water System	
District: Angeles District / District 22	**TMF Assessment Date**: October 22, 2020
Evaluation Performed By: Ofelia Oracion	**Staff Evaluation Date**: October 22, 2020

Has the water system demonstrated capacity in the following elements per the TMF Assessment Form?

Mandatory TMF Elements

1. **Consolidation Feasibility**:	☒ Yes	☐ No	comments:_____
2. **Ownership**:	☒ Yes	☐ No	comments:_____
3. **Water Rights**:	☒ Yes	☐ No	comments:_____
4. **Budget/CIP**	☒ Yes	☐ No	comments:_____
5. **Budget Control**:	☒ Yes	☐ No	comments:_____
6. **System Description**:	☒ Yes	☐ No	comments:_____
7. **Certified Operators**:	☒ Yes	☐ No	comments:_____
8. **Source Capacity**:	☒ Yes	☐ No	comments:_____
9. **Operations Plan**:	☒ Yes	☐ No	comments:_____
10. **Organization**:	☒ Yes	☐ No	comments:_____
11. **Emergency Response Plan**:	☐ Yes	☒ No	comments: The plan needs to update.

Necessary TMF Elements

12. **Training**:	☒ Yes	☐ No	comments:_____
13. **Policies**:	☒ Yes	☐ No	comments:_____

All "Necessary" TMF Elements that have not been satisfied:

☒ There will be a permit condition to be completed within one months of the TMF assessment date.

SWRCB or LPA Staff Name: Ofelia Oracion, Sanitary Engineer
District 22, Division of Drinking Water

Signature & Date: Oracion 10-22-2020

Rev. January 7, 2015

APPENDIX C

PERMIT AMENDMENT APPLICATION FOR THE 12.5 PERCENT SODIUM HYPOCHLORITE CHLORINATION SYSTEMS FOR WELLS 3 AND 5

STATE OF CALIFORNIA
APPLICATION
FOR
DOMESTIC WATER SUPPLY PERMIT AMENDMENT
FROM

Applicant Los Angeles County Waterworks Districts (LACWD)
(Enter the name of legal owner, person(s) or organization)

Address: 2015 East Hatchway Street, Compton, CA 90222

System Name: Sativa Water System

System Number: CA1910147

TO: Shu-Fang Orr, P.E.
Angeles District, Senior Sanitary Engineer
Division of Drinking Water
State Water Resources Control Board
500 North Central Avenue, Suite 500
Glendale, CA 91203

Pursuant and subject to the requirements of the California Health and Safety Code, Division 104, Part 12, Chapter 4 (California Safe Drinking Water Act), Article 7, Section 116550, relating to changes requiring an amended permit, application is hereby made to amend an existing water supply permit to change the disinfectant systems in both Sativa Well 3 and Well 5 sites from gas chlorine to liquid sodium hypochlorite.

FOR OFFICIAL USE

Date Received:

I (We) declare under penalty of perjury that the statements on this application and on the accompanying attachments are correct to my (our) knowledge and that I (we) are acting under authority and direction of the responsible legal entity under whose name this application is made.

Signed By: Bing Hua

Title: Associate Civil Engineer

Address: 900 S. Fremont Ave., Alhambra, CA 91803

Telephone: 626-300-3337

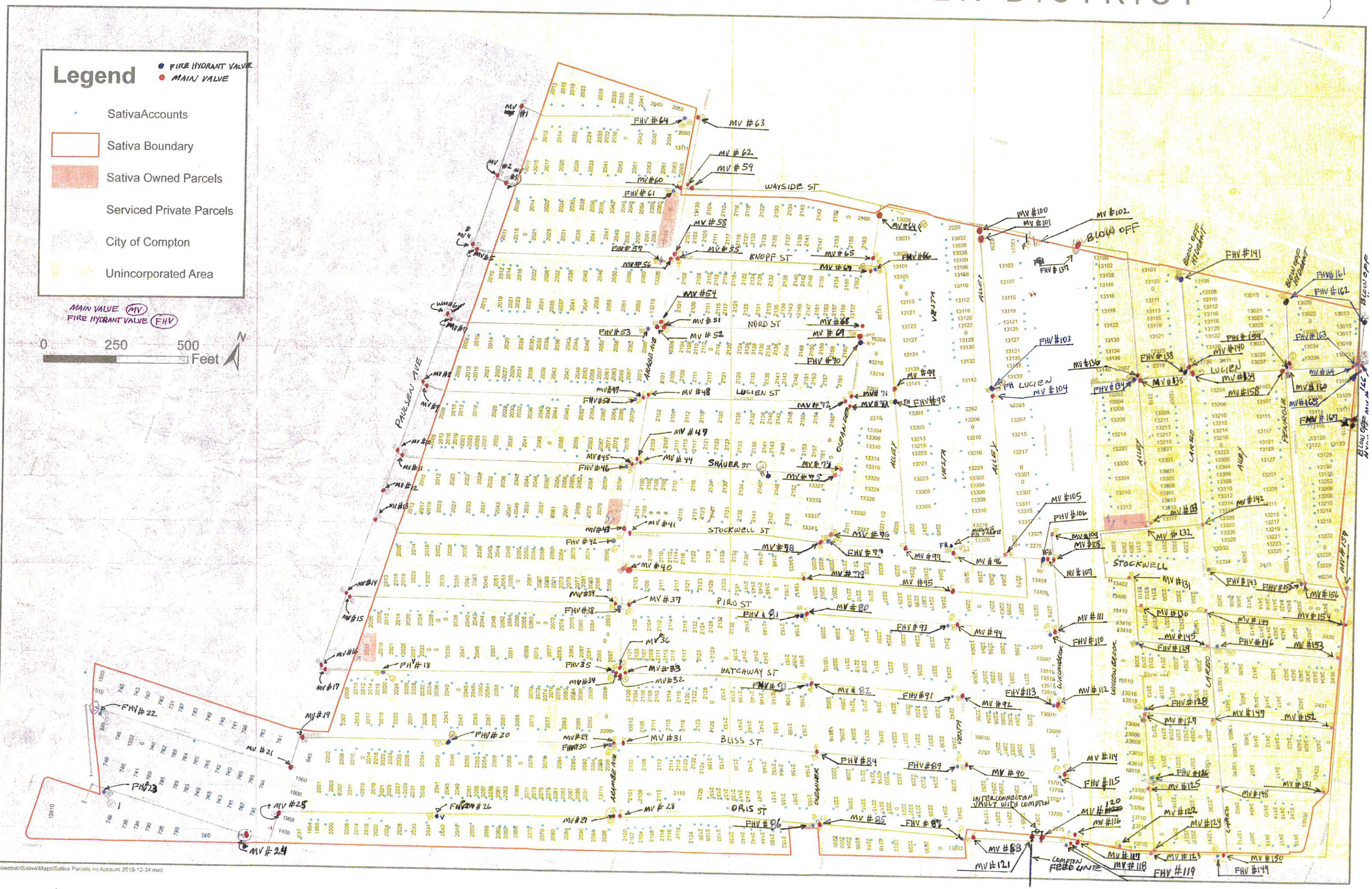
Dated: 8/24/2020

Revised : 07/2014

APPENDIX D

SATIVA WATER SYSTEM SERVICE AREA MAP

SATIVA LOS ANGELES COUNTY WATER DISTRICT



Date: 12/24/2018

P:\swppub\Sativa\Maps\Sativa Parcels no Account 2018-12-24.mxd


GOLDEN STATE WATER COMPANY
LIBERTY UTILITIES
LYNWOOD PARK MUTUAL WATER COMPANY
CITY OF COMPTON WATER DEPARTMENT
131TH
137TH
139TH
WAYSIDE
KNOPP
NORD
LUCIEN
SHAUER
STOCKWELL
PIRU
HATCHWAY
BLISS
ORIS
PEAR
PEACH
FIG
PAULSEN
ARANBE
OLEANDER
VESTA
ALLEY
COUNTY
P. E. RAILROAD & METRO BLUE LINE
WILLOWBROOK
LARGO
PENROSE
MONA
COMPTON
WINONA
131TH. ST
132ND. ST
133RD. ST
134TH. ST
135TH. ST
N
W
E
S
SATIVA LOS ANGELES COUNTY WATER DISTRICT
DISTRIBUTION SYSTEM SHUT-OFF VALVES
6" WATER MAINS
4" WATER MAINS
2" WATER MAINS
4"PVC PARKWAY CONNECTIONS BACK OF CURB INSTALLED IN 1973
CUT OFF VALVES
SATIVA LOS ANGELES COUNTY WATER DISTRICT
Scale 1/2=100 feet
Original Map Developed by Eddy Hamilton 1960
Digital updated by Johnny E. Johnson Sr. 2013
SERVICE AREA MAP

APPENDIX E

SCHEMATIC OF THE WATER SUPPLY SYSTEM

SATIVA SERVICE AREA

Public Works

- Emergency Connection
- Pump
- Meter
  - Domestic
- Well
  - Active
  - Abandoned
  - Sampling Point
  - Hydrant
  - Water Reducer
- ControlValve
  - Blowout
  - Backflow Device
  - Shutoff
- SystemValve
  - Liberty Utility Interconnection
  - 2" Main Line
  - 4" Main Line
  - 6" Main Line
  - 8" Main Line (Sativa Lucien Project Completed On 7/15/2020)
  - Main Line (Unknown Diameter)
- Lateral Line
  - Hydrant
  - Service
- Tank
- Sativa_Service_Boundary

0 100 200 400 Feet

W 130TH ST · E 130TH ST · W 131ST ST · E 131ST ST · E 131ST ST · E 132ND ST · E 133RD ST · E 135TH ST · W NORD ST · W 134TH ST · W 134TH PL · W STOCKWELL ST · W 136TH ST · W 137TH ST · W 138TH ST · W 139TH ST · W CRESSEY ST · E WAYSIDE ST · E KNOBE ST · E NORD ST · E LUCIEN ST · E SMAUER ST · E STOCKWELL ST · E ERIN ST · E HATCHWAY ST · E BLISS ST · E CRIS ST · E WINONA AVE · W FIG ST · W WINONA ST · E PIRU ST · E HATCHWAYS ST · N WILMINGTON AVE · N ANZAC AVE · N GRAPE AVE · N KEMP AVE · N MATTHEWS AVE · N PACIFIC AVE · N OLEANDER AVE · N COCOA AVE · N LARGO AVE · S WILLOWBROOK AVE · S VESTA AVE · S SEANDEE AVE · S EAGER AVE · S PRIMROSE AVE · S JAROD AVE · S MONA BLVD · PACIFIC ELECTRIC INN · TANK #1 · TANK #2

MV#	# OF TURNS	D (INCHES)
1		
2		
2A		
3	15	24
4		
4A		
5		
6		
6A		
6B		
6C		
7		
7A		
7B		
8		
8A		
9		
9A		
10	13	34
11	13	26

MV#	# OF TURNS	D (INCHES)
12	13	29
13	13	29
14	13	23
15	13	28
16	13	30
17	12	33
18	13	22
19	13	41
20	12	27
21	20	25
22	20	24
23	19	23
24	23	19
25	20	23
26	19	20
27	21	15
28	19	25
29	21	22
30	20	16
31	20	20

MV#	# OF TURNS	D (INCHES)
32	19	12
33	19	22
34	21	19
35	21	25
36	21	42
37	21	17
38	10	19
39	20	26
40	20	50
41	20	15
42	20	28
43	19	59
44	12	19
45	10	12
46	19	52
47	9	14
48	14	16
49	20	24
50	19	24
51	19	24

MV#	# OF TURNS	D (INCHES)
52	20	23
53		25
54	15	3
55	20	
56	10	19
57	19	18
58	19	23
59	19	25
60	18	22
61	21	23
62		
63	20	20
64	19	12
64A	16	4
65	15	16
66	20	11
67	9	13
68	10	13
69		
70		

MV#	# OF TURNS	D (INCHES)
71	15	9
72	14	12
73	9	24
74	20	24
75	20	24
76	20	21
77	20	25
78	21	28
79	14	37
80		11
81	20	26
82		31
83	21	25
84		
85	20	22
86	21	30
87	14	53
88	20	55
89	21	50
90		

MV#	# OF TURNS	D (INCHES)
91	15	15
92		
93	9	16
94	9	16
94A	14	20
95		9
96		11
97		
98	9	11
99	7	
100		
101		
101A	20	7
102	20	22
103	15	28
104	8	15
105	15	26
106		
107	19	25
108	20	26

MV#	# OF TURNS	D (INCHES)
109	21	27
110	7	32
111	14	28
112	14	23
113	21	
114	20&1/2	16
115	14	25
116		
117		
117A	12	14
118	20	17
119		
120	20&1/2	24
121	21	18
122		
123	21	26
124	18	26
125	19	20

This map is for planning purposes only.

APPENDIX F

PUMP EFFICIENCY TESTS CONDUCTED ON SEPTEMBER 10, 2020 BY SOUTHERN CALIFORNIA EDISON COMPANY FOR WELLS 3 AND 5

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Confidential/Proprietary Information

September 11, 2020

GARY HILLIARD
LOS ANGELES COUNTY SATIVA
260 E AVENUE K-8
LANCASTER, CA 93535

HYDRAULIC TEST RESULTS: SATIVA WELL #3
Location: 13320 S WILLOWBROOK AVE, COMPTON, CA 90222-3057
Cust #: 0-018-0287 Serv. Acct. #: 013-8239-66
Meter: 254000-011006 Pump Ref. #: 41804

In accordance with your request, an energy efficiency test was performed on your turbine well pump on September 10, 2020. If you have any questions regarding the results which follow, please contact Rick Koch at (805) 654-7312.

Equipment
HP: 50.0

Pump: N/A No: NO PLATE
Motor: US No: V0976011940055M0004

Results	Test 1	Test 2	Test 3
Discharge Pressure, PSI	**62.9**	**55.9**	**69.5**
Standing Water Level, Feet	**115.9**	**115.9**	**115.9**
Drawdown, Feet	**33.0**	**37.7**	**27.7**
Discharge Head, Feet	**145.3**	**129.1**	**160.5**
Pumping Water Level, Feet	**148.9**	**153.6**	**143.6**
Total Head, Feet	**294.2**	**282.7**	**304.1**
Capacity, GPM	**382**	**424**	**342**
GPM per Foot Drawdown	**11.6**	**11.2**	**12.3**
Acre Feet Pumped in 24 Hours	**1.688**	**1.874**	**1.512**
kW Input to Motor	**33.5**	**34.8**	**32.1**
HP Input to Motor	**44.9**	**46.7**	**43.0**
Motor Load (%)	**84.9**	**88.2**	**81.4**
Measured Speed of Pump, RPM	**1,783**		
Customer Meter, GPM		**382**	
kWh per Acre Foot	**476**	**446**	**510**
Overall Plant Efficiency (%)	**63.2**	**64.9**	**61.0**

The above test results indicate various operating conditions on this pump. The pump operates in the pressure range of 55 psi to 69 psi. Test #1 was performed at the midpoint of the operating range. Test #2 & #3 represent to low and high part of the range respectively. The cost per kWh was calculated using the charges from SCE and the CCA.

Russell Johnson
Manager
Hydraulic Services

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Confidential/Proprietary Information

September 11, 2020

GARY HILLIARD
LOS ANGELES COUNTY SATIVA
260 E AVENUE K-8
LANCASTER, CA 93535

PUMPING COST ANALYSIS: SATIVA WELL #3
Location: 13320 S WILLOWBROOK AVE, COMPTON, CA 90222-3057

CSS Cust #:	0-018-0287	CRM Cust #:	0059040788	Pump Ref. #:	41804
CSS Serv. Acct.:	013-8239-66	CRM Serv. Acct.:	0050707973	Meter:	254000-011006

The following energy efficiency analysis is presented as an aid to your cost accounting. This is an estimate based on the conditions present during the Edison pump test performed on September 10, 2020, billing history for the past 12 months, and your current rate of TOU-PA2D.

	Existing
Total kWh	**24,384**
kW Input	**33.5**
kWh per Acre Foot	**476**
Acre Feet per Year	**51.2**
Average Cost per kWh	**$0.29**
Average Cost per Acre Foot	**$140.32**
Overall Plant Efficiency (%)	**63.2**
Total Annual Cost	**$7,184.21**

The hydraulic test results indicate that this pump is operating in an efficient manner.

It is sincerely hoped that this information will prove helpful to you, and that your concerns over maintaining optimum pumping efficiency will be continued. If you have any questions regarding this report, please contact Rick Koch at (805) 654-7312.

Russell Johnson
Manager
Hydraulic Services

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Confidential/Proprietary Information

September 11, 2020

GARY HILLIARD
SATIVA WATER CO.
260 E AVENUE K-8
LANCASTER, CA 93535

HYDRAULIC TEST RESULTS: WELL #5
Location: 2083 E STOCKWELL ST, COMPTON, CA 90222-3502
Cust #: 0-008-3961 Serv. Acct. #: 008-2224-67
Meter: 259000-025849 Pump Ref. #: 41808

In accordance with your request, an energy efficiency test was performed on your turbine well pump on September 10, 2020. If you have any questions regarding the results which follow, please contact Rick Koch at (805) 654-7312.

Equipment
HP: 100.0
Pump: GOULDS No: NO PLATE
Motor: US No: A0677155720020M0002

Results	Test 1 @ 56.7 Hz	Test 2 @ 60.0 Hz	Test 3 @ 60.0 Hz
Discharge Pressure, PSI	**59.0**	**59.0**	**99.3**
Standing Water Level, Feet	**117.8**	**117.8**	**117.8**
Drawdown, Feet	**35.0**	**40.9**	**31.8**
Discharge Head, Feet	**136.3**	**136.3**	**229.4**
Pumping Water Level, Feet	**152.8**	**158.7**	**149.6**
Total Head, Feet	**289.1**	**295.0**	**379.0**
Capacity, GPM	**602**	**699**	**585**
GPM per Foot Drawdown	**17.2**	**17.1**	**18.4**
Acre Feet Pumped in 24 Hours	**2.661**	**3.090**	**2.586**
kW Input to Motor	**50.3**	**60.2**	**57.4**
HP Input to Motor	**67.5**	**80.7**	**77.0**
Motor Load (%)	**64.3**	**77.0**	**73.4**
Measured Speed of Pump, RPM	**1,691**	**1,790**	
Customer Meter, GPM	**632**	**711**	
kWh per Acre Foot	**454**	**468**	**533**
Overall Plant Efficiency (%)	**65.2**	**64.5**	**72.7**

The above test results indicate various operating conditions on this pump. Test #1 was performed at the midpoint of the operating pressure ranges with the VFD set at 1700 rpm to represent the normal operating point. Test #2 was performed at the midpoint pressure at 60 Hz. Test #3 was throttled at 60 Hz. The cost per kWh was calculated using the charges from SCE and the CCA.

Russell Johnson
Manager
Hydraulic Services

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Confidential/Proprietary Information

September 11, 2020

GARY HILLIARD
SATIVA WATER CO.
260 E AVENUE K-8
LANCASTER, CA 93535

PUMPING COST ANALYSIS: WELL #5
Location: 2083 E STOCKWELL ST, COMPTON, CA 90222-3502

CSS Cust #:	0-008-3961	CRM Cust #:	0065007784	Pump Ref. #:	41808
CSS Serv. Acct.:	008-2224-67	CRM Serv. Acct.:	0054135346	Meter:	259000-025849

The following energy efficiency analysis is presented as an aid to your cost accounting. This is an estimate based on the conditions present during the Edison pump test performed on September 10, 2020, billing history for the past 12 months, and your current rate of TOU-PA2D.

	Existing
Total kWh	**8,088**
kW Input	**50.3**
kWh per Acre Foot	**454**
Acre Feet per Year	**17.8**
Average Cost per kWh	**$0.51**
Average Cost per Acre Foot	**$232.93**
Overall Plant Efficiency (%)	**65.2**
Total Annual Cost	**$4,151.64**

The hydraulic test results indicate that this pump is operating in an efficient manner.

It is sincerely hoped that this information will prove helpful to you, and that your concerns over maintaining optimum pumping efficiency will be continued. If you have any questions regarding this report, please contact Rick Koch at (805) 654-7312.

Russell Johnson
Manager
Hydraulic Services

APPENDIX G

WELL 3 DATA SHEET

WELL DATA SHEET (Page 1 of 2)

Complete as much information as possible. Leave blank if information is not available, use N.A. if not applicable.		
** Indicates items required for Source Water Assessment*		
*** Indicates additional items required for assessments and Ground Water Rule*		
	(separate multiple entries in field with semi-colon)	Actual, Estimated or Default?
DATA SHEET GENERAL INFORMATION		
System Name	Sativa Water System	*DDW database*
System Number	1910147	*DDW database*
Source of Information *(well log, DDW/County files, system, etc)*	Well Log, DDW, LACDPW	
Organization Collecting Information *(DDW, County, System, other)*	DDW, LACDPW	
Date Information Collected/Updated	09/30/2020	
WELL IDENTIFICATION		
* Well Number or Name	**Well 3**	*DDW database*
* DDW Source Identification Number (PS Code)	1910147-002	*DDW database*
DWR Well Log on File? ("YES" or "NO")	Yes	
State Well Number (from DWR)	03S/13W-15G01 S	
Well Status (Active, Standby, Inactive)	Active	*DDW database*
WELL LOCATION		
Latitude	335400	*DDW database*
Longitude	1181300	*DDW database*
Ground Surface Elevation (ft above Mean Sea Level)	Unknown	
Street Address	13320 Willowbrook Ave.	
Nearest Cross Street	E. Stockwell St.	
City	Willowbrook	
County	Los Angeles	
* Neighborhood/Surrounding Area (see Note 1)	Re	
Site plan on file? ("YES" or "NO")	Yes	
DWR Ground Water Basin	Central Basin	*DWR*
DWR Ground Water Sub-basin	Unknown	*to come from DWR*
SANITARY CONDITIONS		
** Distance to closest Sewer Line, Sewage Disposal, Septic Tank (ft)	>100	Estimated
Distance to Active Wells (ft)	>100	Estimated
Distance to Abandoned Wells (ft)	1,056	Actual
Distance to Surface Water (ft)	Not Applicable	Actual
** Size of controlled area around well (square feet)	5,000	Estimated
* Type of access control to well site (fencing, building, etc)	Building & Fencing	
* Surface Seal? (Concrete slab)("YES", "NO" or "UNKNOWN")	Yes	
* Dimensions of concrete slab: Length(ft)/ Width(ft)/ Thick(in)	2/2/18	Actual
* Within 100 year flood plain? ("YES", "NO" or "UNKNOWN")	No	
* Drainage away from well? ("YES" or "NO")	Yes	
ENCLOSURE/HOUSING		
Enclosure Type (building, vault, none, etc.)	Building	
Floor material	Concrete	
Located in Pit? ("YES" or "NO")	No	
Pit depth (feet) (if applicable)	Not Applicable	
WELL CONSTRUCTION		
Date drilled	1944	
Drilling Method	Cable Tool	
Depth of Bore Hole (feet below ground surface)	320	Actual
Casing Beginning Depth/Ending Depth(ft below surface); 2nd Casing Beginning Depth/Ending Depth; 3rd Casing, etc.	0/320	Actual
Casing Diameter (inches); 2nd Casing Diameter; 3rd Casing, etc.	14	Actual

WELL DATA SHEET (Page 2 of 2)

	(separate multiple entries in field with semi-colon)	Actual, Estimated or Default?
WELL CONSTRUCTION (continued)		
Casing Material; 2nd Casing Material; 3rd Casing, etc.	10 Gage Steel	Actual
Conductor casing used? ("YES", "NO" or "UNKNOWN") (See Note 2)	Unknown	
Conductor casing removed? ("YES", "NO" or "UNKNOWN")	Unknown	
* Depth to highest perforations/screens (ft below surface) (or "UNKNOWN")	236	Actual
Screened Interval Beginning Depth/Ending Depth (ft below surface); 2nd Screened Interval Beg. Depth/Ending Depth; 3rd Screened Interval, etc.	236/247; 264/281	Actual
* Total length of screened interval (ft) (default = 10% pump capacity in gpm) (or "UNKNOWN")	28	Actual
* Annular Seal?("YES", "NO" or "UNKNOWN") (See Note 3)	No	
* Depth of Annular Seal (ft)	None	
Material of Annular Seal (cement grout, bentonite, etc.)	Not Applicable	
Gravel pack, Depth to top (ft below ground surface)	No	
Total length of gravel pack (ft)	Not Applicable	
AQUIFER		
* Aquifer Materials (list all that apply: sand, silt, clay, gravel, rock, fractured rock)	sand, silt, clay, gravel	
* Effective porosity (decimal percent) (default = 0.2) (or "UNKNOWN")	0.2	Default
* Confining layer (Impervious Strata) above aquifer? ("YES", "NO" or "UNKNOWN")	Yes	
Thickness of confining layer, if known (ft)	21; 15; 152; 17; 39	Actual
Depth to confining layer, if known (ft below ground)	36; 60; 84; 247; 281	Actual
* Static water level (ft below ground surface)	115.6	Actual
Static water level measurement: Date/Method	September 8, 2016/Sounder	
Pumping water level (ft below ground surface)	153.5	Actual
Pumping water level measurement: Date/Method	September 8, 2016/Sounder	
WELL PRODUCTION		
Well Yield (gpm)	424	Actual
Well Yield Based On (i.e., pump test, etc.)	Pump Test/Edison Co.	
Date measured	9/10/2020	
Is the well metered? ("YES" or "NO")	Yes	
Production (gallons per year)	1,322,880	Estimated
Frequency of Use (hours/year)	52	Estimated
Typical pumping duration (hours/day)	1	Actual and as needed
PUMP		
Make	Peerless	
Type	DWT	
Size (hp)	50	
* Capacity (gpm)	424	Actual
Depth to suction intake (ft below ground surface)	Unknown	
Lubrication Type	Oil	
Type of Power: (i.e., electric, diesel, etc.)	Electric	
Auxiliary power available? ("YES" or "NO")	No	
Operation controlled by: (i.e., level in tank, pressure, etc.)	Pressure	
Pump to Waste capability? ("YES" or "NO")	Yes	
Discharges to: (i.e., distribution system, storage, etc.)	Hydropnuematic Tanks	2 units
REMARKS AND DEFECTS (use additional sheets as necessary)		
The well is more than 76 years old and has no annular seal. In February 2016, the well was taken out of service due to excessiv		
sand pumping. According to the District an aquifer had collapsed. The well's suction pipe was lifted up.		

WELL DATA SHEET (Page 3 of 2)

NOTES		
1. Neighborhood/Surrounding Area (list all that apply): A= Agricultural, Ru = Rural, Re = Residential, Co = Commercial, I = Industrial, Mu = Municipal, P = Pristine, O = Other		
2. Conductor Casing - Oversized casing used to stabilize bore hole during well construction. Should be removed during installation of annular seal.		
3. Annular Seal - Seal of grout in the space between the well casing and the wall of the drilled hole. Sometimes called "sanitary seal".		

APPENDIX H

WELL 5 VIDEO SURVEY REPORTS, SPINNER LOG AND MASS BALANCE ANALYSES, AND AS-BUILT WELL LINER DIAGRAM

Pacific Surveys

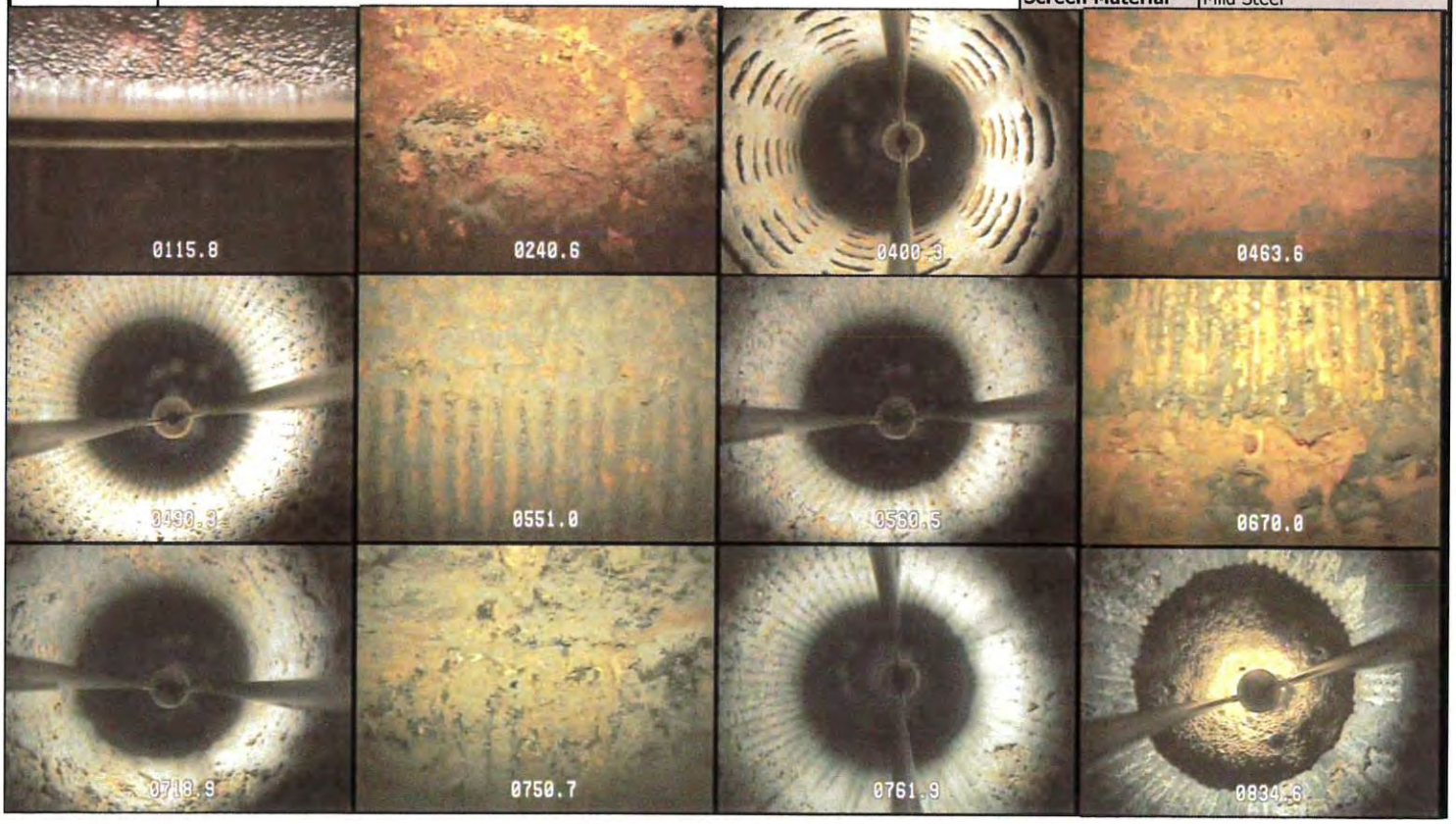
a full service geophysical well logging company

Video Survey Report

Company:	General Pump Company, Inc.	**Date:**	09-Sep-19
Well:	Sativa Well 5	**Run No.**	Two **Truck** PS-6
Field:	Compton	**Job Ticket:**	26005
State:	California	**Total Depth:**	836.8 ft
Location:	2080 Stockwell St.	**Water Level:**	115.8 ft SWL
		Oil on Water:	No **Amount:** N/A
GPS:	33.909912, -118.233852	**Operator:**	Conner
Zero Datum:	Top of CSG **Tool Zero:** Side-Scan		**Dead Space** 1.75 ft
Reason for Survey:	General Inspection	**Guides Set @**	14 in

Depth	Observations
5.0 ft	Began survey 5 ft below top of casing; well located inside pump house. EZ-Over tool used.
22.0 ft	Spalling on casing walls.
115.8 ft	SWL; water is clear; visibility is good.
130.0 ft	Minor growth on casing walls.
202.4 ft	Top of perforated interval; appears to be mostly plugged.
228.0 ft	Moderate growth on casing walls; perfs appear to be mostly plugged.
240.6 ft	Bottom of perforated interval.
382.3 ft	Top of perforated interval; appears to be mostly open.
490.3 ft	Bottom of perforated interval.
490.9 ft	Top of screened interval; appears to be plugged.
510.3 ft	Bottom of screened interval.
513.0 ft	Increased growth on casing walls.
551.0 ft	Top of screened interval; appears to be plugged.
670.0 ft	Bottom of screened interval.
750.7 ft	Top of screened interval; appears to be plugged.
836.8 ft	Camera light bar comes to rest on hard fill material. Screen still visible at fill.
	Survey ends.

Well Details		
Perforation:		**From Survey**
Standard Louvers		202.40 ft to 240.60 ft
		382.30 ft to 490.30 ft
Wire-Wrap		490.90 ft to 510.30 ft
		551.00 ft to 670.00 ft
		750.70 ft to 836.80 ft
Casing Size (in):		**From Survey**
O.D.	**I.D.**	
16.00	15.25	0.00 ft to 836.80 ft
Casing Material		Mild Steel
Screen Material		Mild Steel



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fax: 909.399.3180

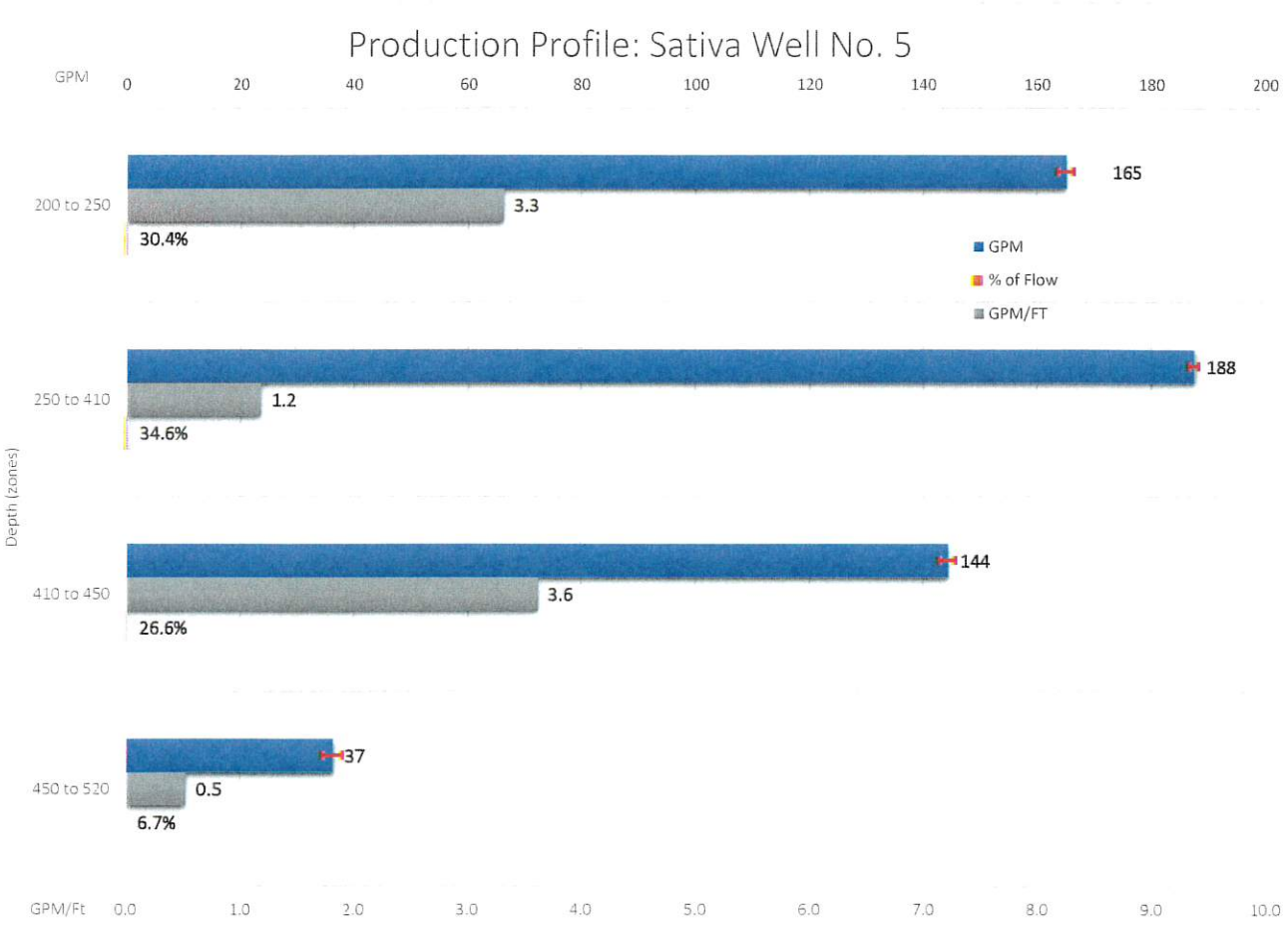
SPINNER LOG ANALYSIS

Pacific Surveys
Geophysical Well Logging
21-Nov-2019
Job # 26221

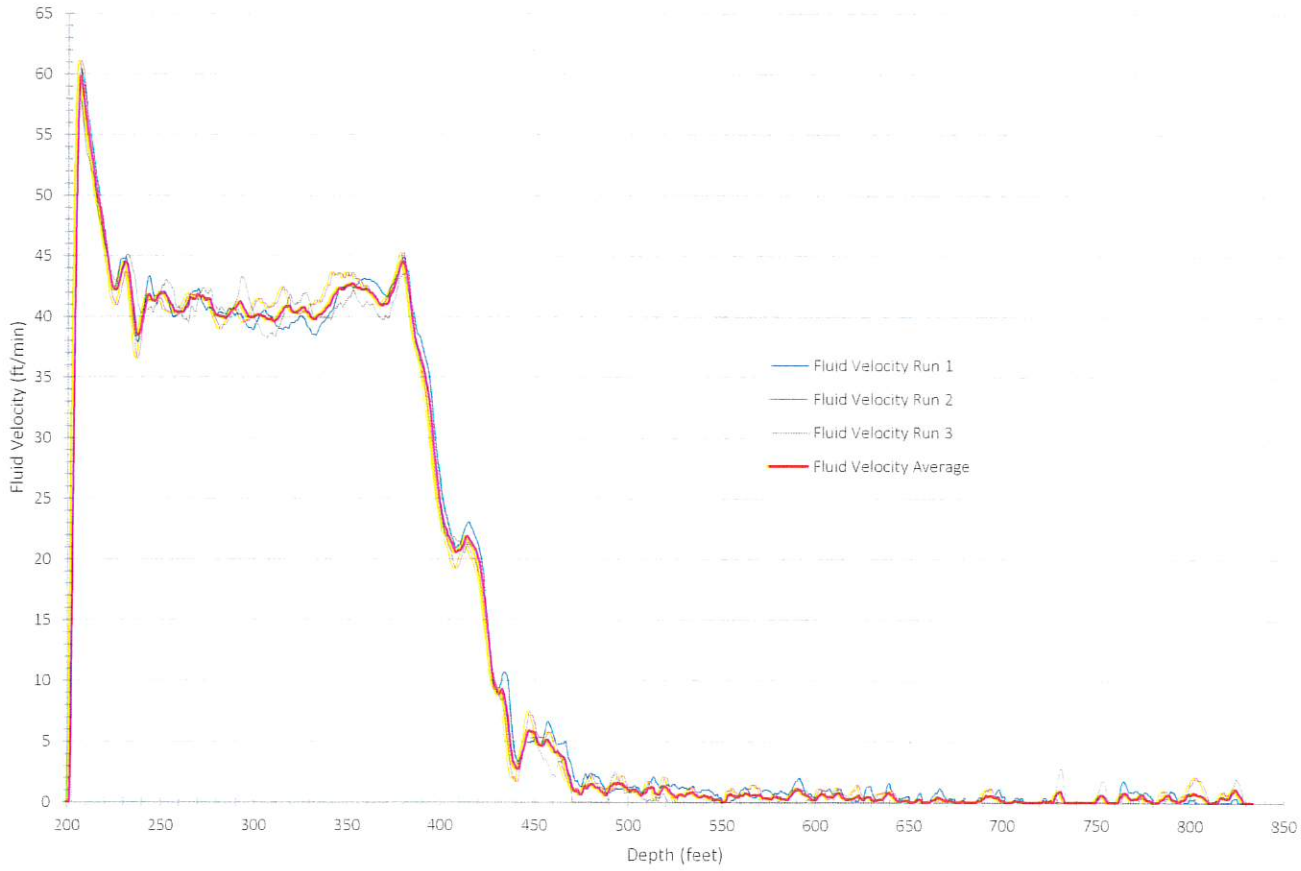
Company: Best Drilling & Pump
Well: IRWD DRFW Well No. 5
County: Orange

SURFACE FLOW RATE 543 GPM

SAMPLE INTERVALS	PRODUCTION (GPM)	% OF FLOW (ZONES)	GPM/FT	STD DEV (GPM)	STD ERROR (+/- GPM)
200 to 250	165	30%	3.3	15.6	1.4
250 to 410	188	35%	1.2	9.1	0.8
410 to 450	144	27%	3.6	8.0	1.4
450 to 520	37	7%	0.5	10.3	1.8
520 to 844	9	2%	0.0	5.8	1.0


Production Profile: Sativa Well No. 5
GPM
0
20
40
60
80
100
120
140
160
180
200
200 to 250
165
3.3
30.4%
250 to 410
188
1.2
34.6%
410 to 450
144
3.6
26.6%
450 to 520
37
0.5
6.7%
Depth (zones)
GPM
% of Flow
GPM/FT
GPM/Ft
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0

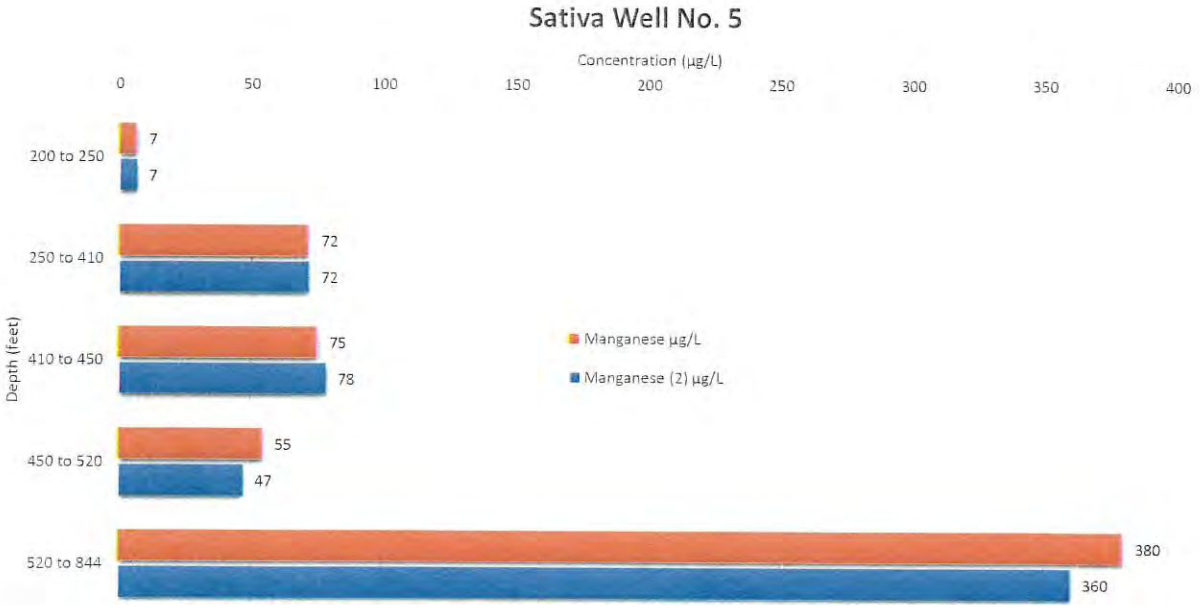
Sativa Well No. 5
Fluid Velocity from Spinner Runs



Sativa Well No. 5
Fluid Velocity CPS Compared to Stop Counts

Sativa Well No. 5
Mass Balance Analysis
11-25-2019

Sample Zone	Sample Zone Depth (feet)	Sample Depth (feet)	Flowrate (GPM)	Measured Concentration		Calculated Concentration		Measured
				Manganese µg/L	Manganese (2) µg/L	Manganese µg/L	Manganese (2) µg/L	pH
1	200 to 250	Surface	165	57	57	7	7	N/A
2	250 to 410	250	188	79	79	72	72	N/A
3	410 to 450	410	144	86	86	75	78	N/A
4	450 to 520	450	37	120	110	55	47	N/A
5	520 to 844	520	9	380	360	380	360	N/A



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SATIVA WELL 5 COMPUTATION TABLES > MASS BALANCE (as Sampled on 11/25/19)

TABLE 1: SATIVA WELL 5 COMPUTATION TABLES > MASS BALANCE (as Measured and Calculated)

Mn Sample Zone	Sample Zones (ft)	Sample Depth (ft)	Flow (GPM)	Measured Concentration		Calculated Concentration		Measured
				Manganese µg/L	Manganese (2) µg/L	Manganese µg/L	Manganese (2) µg/L	pH
1	200 to 250	Surface	165	57	57	7	7	N/A
2	250 to 410	250	188	79	79	72	72	N/A
3	410 to 450	410	144	86	86	75	78	N/A
4	450 to 520	450	37	120	110	55	47	N/A
5	520 to 844	520	9	380	360	380	360	N/A
			543					

TABLE 2: SATIVA WELL 5 > MASS BALANCE (with Casing & Screen Zones)

Perforations	Mn Sample Zone	Sample Depth (ft bgs)	Flow (gpm)	Flow (% of Total GPM)	"Calculated" Manganese (1) (ppb)	"Calculated" Manganese (2) (ppb)	Sampled Manganese at Surface (1) (ppb)	Sampled Manganese at Surface (2) (ppb)
0'- 200' (Blank Casing)	1	0'	165	30.4%	7	7		
200'-240' (Louvers)								
240'-380' (Blank Casing)	2	250'	188	34.6%	72	72		
380'-488' (Louvers)	3	410'	144	26.5%	75	78		
488'-500' (Wire-Wrap)	4	450'	37	6.8%	55	47	57.0	56.9
500' - 547' (Blank Casing)								
547'-667' (Wire-Wrap)	5	520'	9	1.7%	380	360		
667' to 746' (Blank Casing)								
746'-845' (Wire-Wrap)								
			543	100.0%				

TABLE 3: SATIVA WELL 5 > MASS BALANCE (Using the "Calculated" Manganese Perf Zone Values with Zone 510' to 845' Blocked)

Perforations	Mn Sample Zone	Sample Depth (ft bgs)	Flow (gpm)	Flow (% of Total GPM)	"Calculated NEW" Manganese (1) (ppb)	"Calculated NEW" Manganese (2) (ppb)	Calculated NEW Manganese at Surface (1) (ppb)	Calculated NEW Manganese at Surface (2) (ppb)
New GPM =			534					
0'- 200' (Blank Casing)	1	0'	165	30.9%	7	7		
200'-240' (Louvers)								
240'-380' (Blank Casing)	2	250'	188	35.2%	72	72	51.5	51.8
380'-488' (Louvers)	3	410'	144	27.0%	75	78		
488'-500' (Wire-Wrap)	4	450'	37	6.9%	55	47		
500' - 547' (Blank Casing)	BLOCKED OFF ZONES							
547'-667' (Wire-Wrap)								
667' to 746' (Blank Casing)								
746'-845' (Wire-Wrap)								

GENERAL PUMP COMPANY

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CAMARILLO, CA 93010 * PHONE: (805) 482-1215
www.genpump.com

WELL & PUMP SERVICE SINCE 1952
Serving Southern California and Central Coast

Lic. #496765

LA County Public Works
2120 E. 90th St.
Los Angeles, California 90002

February 5, 2020

Attn: Gary Hilliard, P.E.

Subject: Sativa Well 5 Liner Technical Data

General Pump Company is pleased to provide this technical information associated with the installation of the 12" Stainless Steel liner and formation stabilizer at the referenced well site.

The technical portion of the casing, screen, and fillers are as follows:

12" *ROSCOE MOSS* WELL SCREEN - 304 SS WELL SCREEN	140' Ft.			
Material	**304 Stainless**			
Nominal Size	12	in	*180*	*mm*
Top x Bottom Fitting Configuration	6" WR x 2" WR			
Estimated Total Well Depth	510	ft	*366*	*meters*
Estimated Feet of Screen	140	ft	*40*	*meters*
Design Slot Size	0.060	in	*1.5*	*mm*
Approx. Outside Diameter	12.85	in	*326*	*mm*
Screen Barrel Inside Diameter	12.05	in	*306*	*mm*
Approx. Clear ID at Fittings	11.88	in	*302*	*mm*
Approx. Weight Per Ft	25	lbs	*11*	*kg*
Wire Width	0.130	in	*3.3*	*mm*
Wire Height	0.250	in	*6.4*	*mm*
Calc. Collapse Strength *	176	PSI	*12*	*kg/sq.cm*
Open Area	31.6%			
Intake Area	153	sq.in./ft	*3,237*	*sq.cm./meter*
Transmitting Capacity-at 0.1 ft/sec	47	gpm/ft	*10*	*lps/meter*
Support Rod Diam	0.217	in	*5.5*	*mm*
Number of Rods	64			
Cross Sectional Rod Area	2.37	sq.in.	*15.28*	*sq.cm.*
Design Yield Strength	30,000	PSI	*2,109*	*kg/sq.cm*
Calc.Tensile Strength *	49,700	lbs	*22,500*	*kg*
Max.Recomended Hang Wt. *	24,900	lbs	*11,300*	*kg*
Column Load *	46,800	lbs	*21,200*	*kg*

The blank *Custom Pipe* Stainless-Steel Casing will be 12" ID X .375 Wall 304 SST Casing with beveled ends (370 feet of blank casing welded to 140 feet of well screen as needed).

The Bottom will have a Blank Stainless-Steel bull-nose cap welded to the bottom piece of casing.

The Glass *Sili® Beads* consist of 9 Super Sacks of DB-4503/4911 Size 451011 (2.5-3.5 mm) – (.094 to .140 Inch) Resistant Glass Beads (12 cubic yards total). The Glass *Sili® Beads* are placed from 520' to bottom to well at 510'. Then the Glass *Sili® Beads* are placed in the 2" annular space between the original well liner and the new well liner from 510 feet below surface to top of well.

The original Sativa Well 5 Liner failed to contain the original annular gravel pack. The original gravel pack had filled the interior of original liner from 910 feet to 845 feet below surface. The original well casing will be filled in with clean pea gravel from 845 feet to 530 feet below surface (17 cubic yards total). The pea gravel to be capped from 530 feet to 520 feet with "time released' 3/8" bentonite pellets from 530 feet to 520 feet (approx. 5 cubic yards).

Should you have any questions or need additional information regarding the above, please do not hesitate to contact us.

Thank you.

Ray Reece
General Manager

Pacific Surveys

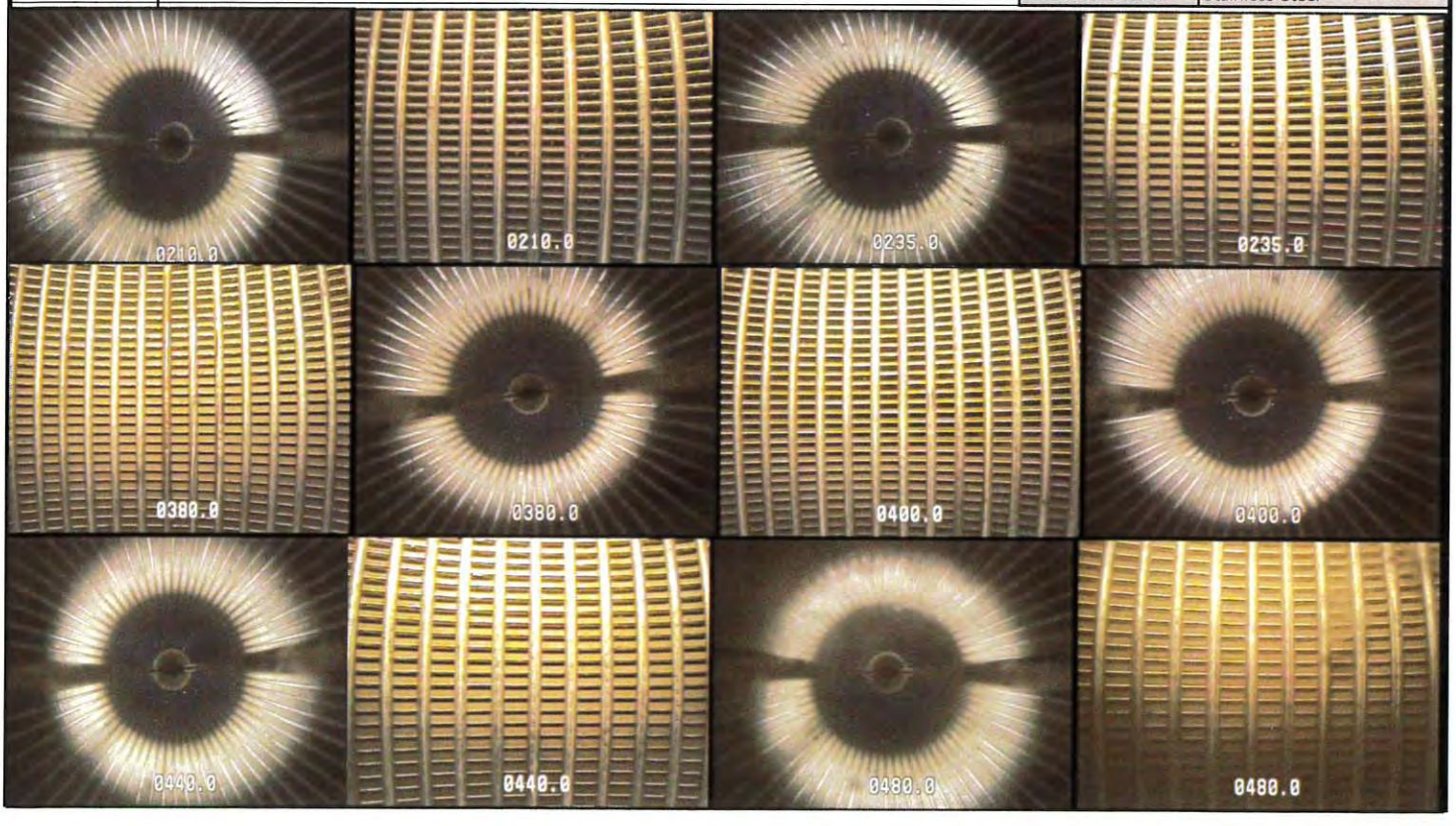
a full service geophysical well logging company

Video Survey Report

Company:	General Pump Company, Inc.	**Date:**	23-Mar-20
Well:	Sativa Well 5	**Run No.**	Four **Truck** PS-6
Field:	Compton	**Job Ticket:**	26644
State:	California	**Total Depth:**	508.8 ft
Location:	2080 Stockwell St	**Water Level:**	109.8 ft SWL
		Oil on Water:	No **Amount:** N/A
GPS:	33.909912 -118.233852	**Operator:**	Hoffman
Zero Datum:	Top of CSG **Tool Zero:** Side-Scan		**Dead Space** 1.75 ft
Reason for Survey:	Post Liner Installation	**Guides Set @**	10 inches

Depth	Observations
1.5 ft	Begin survey at 1.5 feet in 12-inch liner due to using the easy over tool.
7.7 ft	First casing joint. Casing joints are various lengths between 10 and 25 feet and appear to be
	installed correctly unless otherwise noted.
109.8 ft	SWL, clear.
198.9 ft	Top of wire wrap screen liner; appears to be open and installed correctly.
238.5 ft	Bottom of wire wrap.
245.0 ft	Patch of trace biogrowth.
379.0 ft	Top of wire wrap screen liner; appears to be open and installed correctly. Abundant fine
	sediment has settled in slots.
498.2 ft	Bottom of wire wrap.
508.5 ft	Top of fill.
508.8 ft	Camera comes to a stop, end survey.

Well Details		
Perforation:		**From Survey**
Wire-Wrap		198.9 ft to 238.5 ft
		379.0 ft to 498.2 ft
Casing Size (in):		**From Survey**
O.D.	**I.D.**	
12.625	12	0.00 ft to 508.8 ft
Casing Material		Stainless Steel
Screen Material		Stainless Steel



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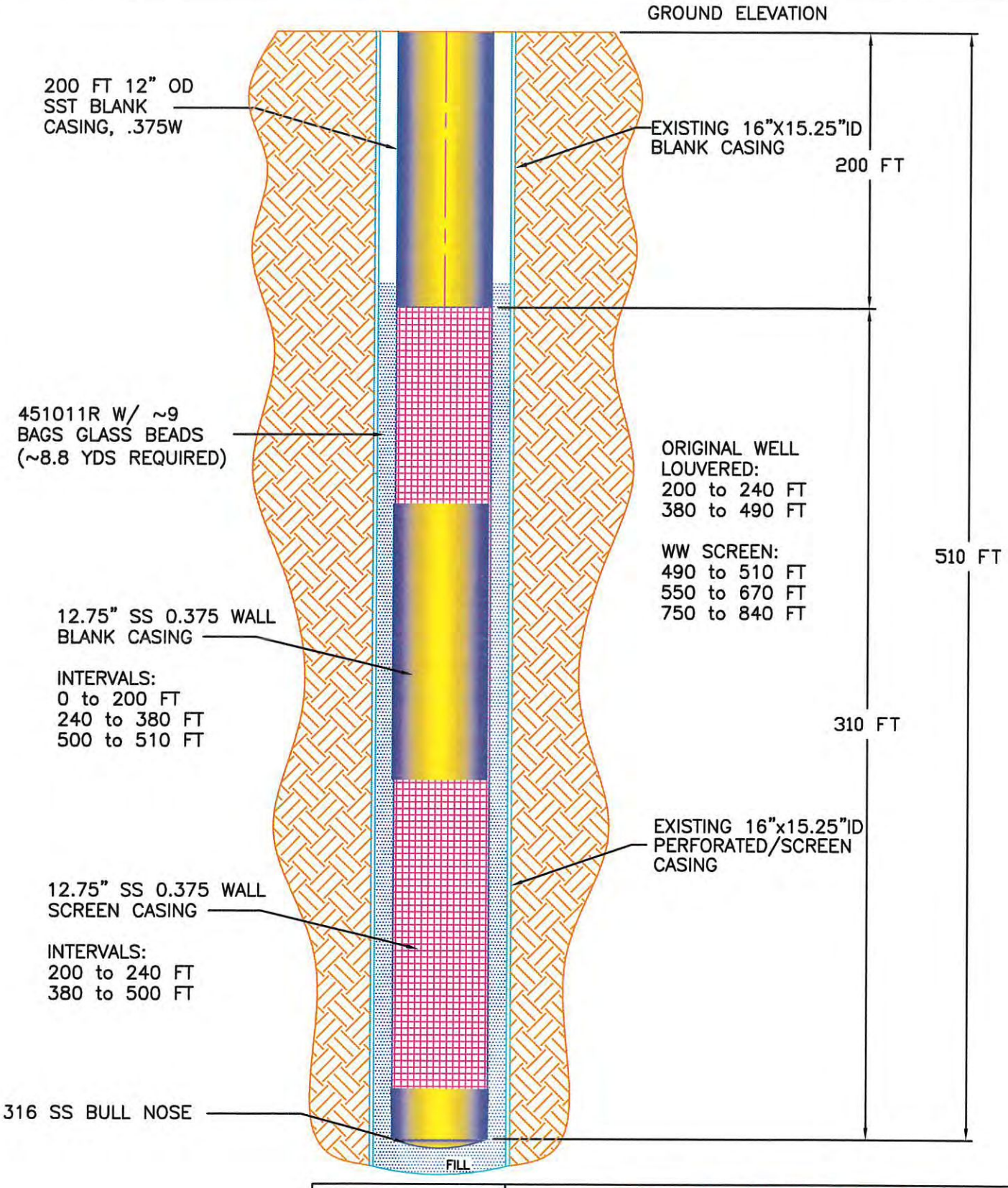


OUTLINE DRAWING NOT TO SCALE

159 North Acacia Street
San Dimas, Ca 91773
Phone: (909) 599-9606
Fax: (909) 599-6238

GENERAL PUMP COMPANY
WATERWELL & PUMP SERVICE SINCE 1952

CUSTOMER : LACDPW – SATIVA WELL NO. 5		
DESCRIPTION : AS BUILT WELL LINER		
MATERIAL : APPROX 25,500# STRING WT.		DWG NO. 81078AB
PCS. REQ'D : 1	GPC ENGINEERING	
BY: RAY	DATE: 02-17-2020	JOB NO 81078

APPENDIX I

MODIFIED WELL 5 DATA SHEET, AND SPECIFICATIONS OF THE NEW PUMPING EQUIPMENT AND WATER LEVEL TRANSDUCER

WELL DATA SHEET (Page 1 of 2)

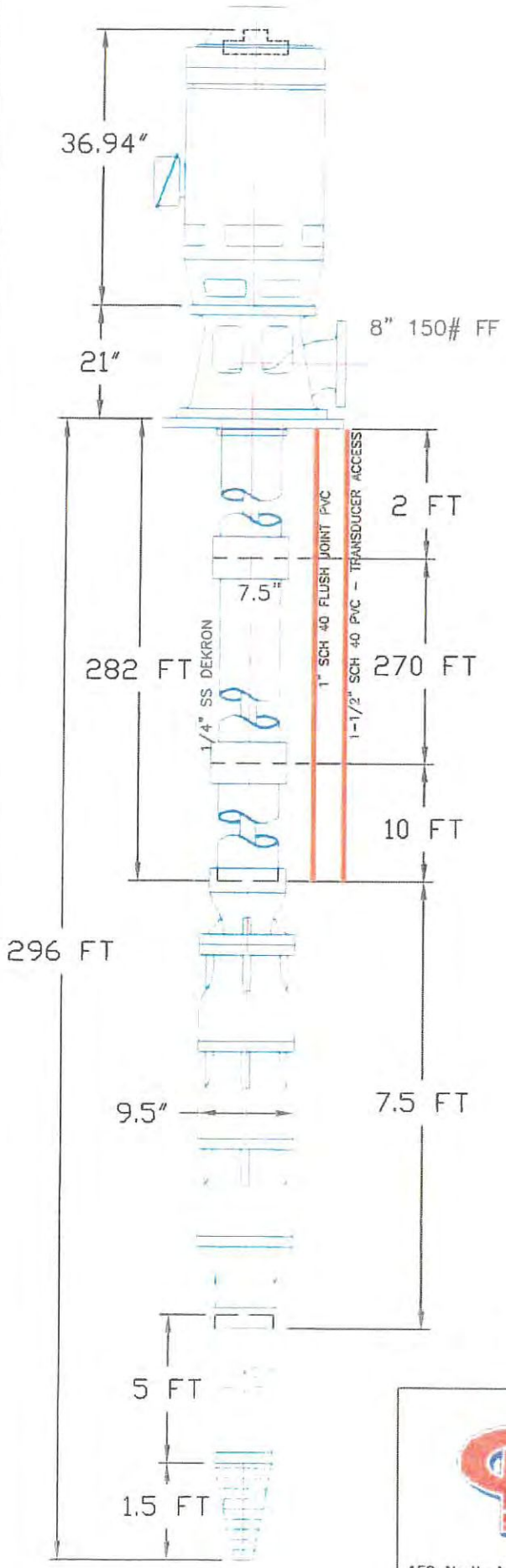
Complete as much information as possible. Leave blank if information is not available, use N.A. if not applicable.		
** Indicates items required for Source Water Assessment*		
*** Indicates additional items required for assessments and Ground Water Rule*		
AFTER REHABILATATION	*(separate multiple entries in field with semi-colon)*	Actual, Estimated or Default?
DATA SHEET GENERAL INFORMATION		
System Name	Sativa Water System	*DDW database*
System Number	1910147	*DDW database*
Source of Information *(well log, DDW/County files, system, etc)*	Well Log, DDW, LACDPW	
Organization Collecting Information *(DDW, County, System, other)*	DDW, LACDPW	
Date Information Collected/Updated	8/25/2020	
WELL IDENTIFICATION		
* Well Number or Name	**Well 5**	*DDW database*
* DDW Source Identification Number (FRDS ID No.)	1910147-005	
DWR Well Log on File? ("YES" or "NO")	Yes	
State Well Number (from DWR)	03S/13W-15M05 S	
Well Status (Active, Standby, Inactive)	Active	*DDW database*
WELL LOCATION		
Latitude	335400	*DDW database*
Longitude	1181400	*DDW database*
Ground Surface Elevation (ft above Mean Sea Level)	Unknown	
Street Address	2081 Stockwell St.	
Nearest Cross Street	S. Aranbe Ave.	
City	Willowbrook	
County	Los Angeles	
* Neighborhood/Surrounding Area (see Note 1)	Re	
Site plan on file? ("YES" or "NO")	Yes	
DWR Ground Water Basin	Central Basin	*DWR*
DWR Ground Water Sub-basin	Unknown	*to come from DWR*
SANITARY CONDITIONS		
** Distance to closest Sewer Line, Sewage Disposal, Septic Tank (ft)	75	Estimated
Distance to Active Wells (ft)	>100	Estimated
Distance to Abandoned Wells (ft)	Not Applicable	Estimated
Distance to Surface Water (ft)	Not Applicable	Actual
** Size of controlled area around well (square feet)	5,000	Estimated
* Type of access control to well site (fencing, building, etc)	Building, Fencing	
* Surface Seal? (Concrete slab)("YES", "NO" or "UNKNOWN")	Yes	
* Dimensions of concrete slab: Length(ft)/ Width(ft)/ Thick(in)	4'/4'/18"	Actual
* Within 100 year flood plain? ("YES", "NO" or "UNKNOWN")	No	
* Drainage away from well? ("YES" or "NO")	Yes	
ENCLOSURE/HOUSING		
Enclosure Type (building, vault, none, etc.)	Building	
Floor material	Concrete	
Located in Pit? ("YES" or "NO")	No	
Pit depth (feet) (if applicable)	Not Applicable	
WELL CONSTRUCTION		
Date drilled / Date Rehabiliation was Completed	6/2020	
Drilling Method	Reverse Circulation	Installed Liner
Depth of Bore Hole (feet below ground surface)	510	
Casing Beginning Depth/Ending Depth(ft below surface); 2nd Casing Beginning Depth/Ending Depth; 3rd Casing, etc.	0/200; 240/380; 510/510	
Casing Diameter (inches); 2nd Casing Diameter; 3rd Casing, etc.	16	12-inch liner

WELL DATA SHEET (Page 2 of 2)

	(separate multiple entries in field with semi-colon)	Actual, Estimated or Default?
WELL CONSTRUCTION (continued)		
Casing Material; 2nd Casing Material; 3rd Casing, etc.	10 Gage Steel	0.375 casing&screens
Conductor casing used? ("YES", "NO" or "UNKNOWN") (See Note 2)	Yes	
Conductor casing removed? ("YES", "NO" or "UNKNOWN")	No	
*Depth to highest perforations/screens(ft below surface)(or "UNKNOWN")	200	200
Screened Interval Beginning Depth/Ending Depth (ft below surface); 2nd Screened Interval Beg. Depth/Ending Depth; 3rd Screened Interval,etc.	200/240; 380/500	
* Total length of screened interval (ft) (default = 10% pump capacity in gpm) (or "UNKNOWN")	160	
* Annular Seal?("YES", "NO" or "UNKNOWN") (See Note 3)	Yes	
* Depth of Annular Seal (ft)	180	Actual
Material of Annular Seal (cement grout, bentonite, etc.)	Bentonite	
Gravel pack, Depth to top (ft below ground surface)	180	Glass Beads
Total length of gravel pack (ft)	510	
AQUIFER		
* Aquifer Materials (list all that apply: sand, silt, clay, gravel, rock, fractured rock)	sand, silt, clay, gravel	
* Effective porosity (decimal percent) (default = 0.2) (or "UNKNOWN")	0.2	Default
* Confining layer (Impervious Strata) above aquifer? ("YES", "NO" or "UNKNOWN")	Yes	
Thickness of confining layer, if known (ft)	20; 80; 110; 30; 20; 10; 40; 10; 40; 10; 5; 10; 20; 120	Actual
Depth to confining layer, if known (ft below ground)	60; 120; 240; 360; 430; 460; 520; 570; 590; 690; 725; 740; 760; 820	Actual
* Static water level (ft below ground surface)	116.7	Actual
Static water level measurement: Date/Method	Transducer 7/23/2020	
Pumping water level (ft below ground surface)	147	Actual
Pumping water level measurement: Date/Method	Transducer 7/23/2020	
WELL PRODUCTION		
Well Yield (gpm)	650	
Well Yield Based On (i.e., pump test, etc.)	Pump Test/Edison Co.	
Date measured	9/10/2020	
Is the well metered? ("YES" or "NO")	Yes	
Production (million gallons per year)	179,437,500	Estimated
Frequency of Use (hours/year)	4,125	Estimated
Typical pumping duration (hours/day)	24	
PUMP		
Make	Goulds	
Type	9RCHC	
Size (hp)	100	
* Capacity (gpm)	725	
Depth to suction intake (ft below ground surface)	296	
Lubrication Type	Water	
Type of Power: (i.e., electric, diesel, etc.)	Electric	
Auxiliary power available? ("YES" or "NO")	Yes	
Operation controlled by: (i.e., level in tank, pressure, etc.)	Pressure	
Pump to Waste capability? ("YES" or "NO")	Yes	
Discharges to: (i.e., distribution system, storage, etc.)	Pressure Tank	
REMARKS AND DEFECTS (use additional sheets as necessary)		

WELL DATA SHEET (Page 3 of 2)

NOTES		
1. Neighborhood/Surrounding Area (list all that apply): A= Agricultural, Ru = Rural, Re = Residential, Co = Commercial, I = Industrial, Mu = Municipal, P = Pristine, O = Other		
2. Conductor Casing - Oversized casing used to stabilize bore hole during well construction. Should be removed during installation of annular seal.		
3. Annular Seal - Seal of grout in the space between the well casing and the wall of the drilled hole. Sometimes called "sanitary seal".		



DATE 03-26-2020
CUSTOMER LACDPW
JOB NAME SATIVA WELL 5

MOTOR
H.P. 100 MFGR. USEM
R.P.M. 1770 FRAME 404TP
N.R.R or S.R.C. NRR
PHASE/CYCLE/VOLTS 3/60/460
V.H.S. or V.S.S. V.H.S.
MOTOR INFO: BORE 1 1/2
CD = 36.94"

DISCHARGE HEAD
TYPE DI SIZE 24 X 8
MATERIAL CAST IRON

COLUMN ASSEMBLY
PIPE SIZE/LENGTH 6" / 282'
SHAFT SIZE 1 1/2"

BOWL ASSEMBLY
GPM: 530 T.D.H. 390
MODEL 9RCHC STGS 9
MFGR. GOULDS

MATERIALS
BOWL CAST IMP. SST
SHFT. SST BRG. BRONZE
COLLET SST BOLTS SST
BOWL W.R. N/A
IMP. W.R. N/A

STRAINER
TYPE CONE
MATERIAL 316SS

OTHER
WELL DIA. 12"
WELL DEPTH: 510 FT

LATERAL LIFT: 7/8" AVAILABLE
LIFT IMPELLERS 3/8" AFTER FREE SPIN

Transducer Set @ 260 ft.

DRAWING NOT TO SCALE

159 North Acacia Street
San Dimas, Ca 91773
Phone: (909) 599-9606
Fax: (909) 599-6238

MATERIAL & PUMP SERVICE INC.

CUSTOMER: LACDPW - SATIVA WELL 5
DESCRIPTION : AS BUILT OUTLINE DWG.
STRING WEIGHT: 9,450#'s
STATIC SHAFT WEIGHT:
PCS. REQ'D : ONE | GPC ENGINEERING
DWG NO. 81078AB
BY: RAY | DATE: 03-26-2020 | JOB NO. 81078

Pump Data Sheet - Turbine 60 Hz

Company: GPC- LACDPW
Name: Sativa Well #5 - Multi Speed
Date: 03/17/2020

Customer:

GOULDS WATER TECHNOLOGY
a xylem brand

Pump:

Size:	9RCHC (stages: 9)	Dimensions:	
Type:	Lineshaft	Suction:	---
Synch Speed:	1800 rpm	Discharge:	---
Dia:	6.6875 in	Vertical Turbine:	
Curve:	---	Eye Area:	
		Bowl Size:	9.25 in
		Max Lateral:	0.88 in
		Thrust K Factor:	4.9 lb/ft

Search Criteria:

Flow:	530 US gpm	Near Miss:	---
Head:	390 ft	Static Head:	0 ft

Pump Selection Warnings:

None

Fluid:

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

Pump Limits:

Temperature:	---	Sphere Size:	0.75 in
Wkg Pressure:	---		

Motor:

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

--- Duty Point ---

Flow:	530 US gpm
Head:	390 ft
Eff:	85.1%
Power:	61.4 hp
NPSHr:	9.14 ft
Speed:	1767 rpm

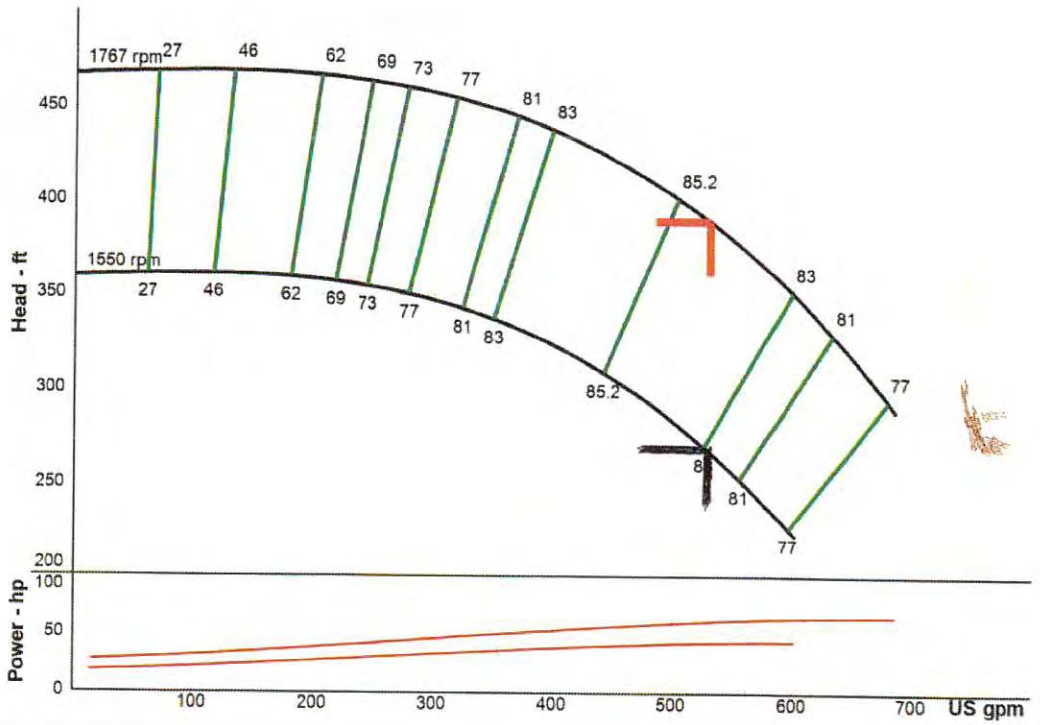
--- Design Curve ---

Shutoff Head:	469 ft
Shutoff dP:	203 psi
Min Flow:	126 US gpm

BEP: 85.2% @ 505 US gpm
NOL Power:
66 hp @ 687 US gpm

--- Max Curve ---

Max Power:
70.7 hp @ 699 US gpm



Operating Points:

Data Point	Speed	Flow	Head	Hz	NPSHr	Efficiency	Power	Min Flow
	rpm	US gpm	ft		ft	%	hp	US gpm
Primary	1767	530	390	60	9.14	85.1	61.4	126
Secondary	1550	530	265	52		83.0		

Selected from catalog: Xylem.TTO.Goulds Lineshaft.60, Vers 4.0

NIDEC MOTOR CORPORATION
8050 WEST FLORISSANT AVE.
ST. LOUIS, MO 63136

DATE: 2/18/2019

P.O. NO.: DT79
Order/Line NO.: 22206 MN 100

TO:

Model Number: DT79
Catalog Number: HO100V2SLG
VHS Weather Protected
CONF,MOTOR,VHS WPI

REVISIONS:
(NONE)

ALL DOCUMENTS HEREIN ARE CONSIDERED CERTIFIED BY NIDEC MOTOR CORPORATION.
THANK YOU FOR YOUR ORDER AND THE OPPORTUNITY TO SERVE YOU.

Features:

```
Horsepower ..... 00100.00~00000.00 ~ KW: 74.6
Enclosure ..... WPI
Poles ..... 04~00 ~ RPM: 1800~0
Frame Size ..... 404~TP
Phase/Frequency/Voltage.. 3~060~460
Winding Type ..... Random Wound
Service Factor ..... 1.15
Insulation Class ..... Class "F" ~ Insulife 2000
Altitude In Feet (Max) .. 3300 Ft.(1000 M) ~ +40 C
Efficiency Class ..... Premium Efficiency
Application ..... Vertical Centrifugal Pump
Inverter Duty NEMA MG1 Part 31
Customer Part Number ....
16.5" Base ~ Coupling Size: 1-1/2" Bore, 3/8" Key
Non-Reverse Ratchet ~ Steady Bushing Not Requested
Pricebook Thrust Value (lbs).. 6700
Customer Down Thrust (lbs) ... 6700
Customer Shutoff Thrust (lbs).
Up Thrust (lbs): ~
Inverter Duty Rating Details:
Load Type (Base Hz & Below) .. Variable Torque
Speed Range (Base Hz & Below). 10:1
Temperature Rise (Sine Wave): "F" Rise @ SF (Resist)
Starting Method ..... PWS (Dual Volt-Low Volt Only)
Duty Cycle ..... Continuous Duty
Efficiency Value ..... 95.4 % ~ Typical
Load Inertia: NEMA ~ Standard Inertia: 441.00 LB-FT2
Number Of Starts Per Hour: NEMA
Motor Type Code ..... RUSI
Rotor Inertia (LB-FT²)          17.0 LB-FT²
Qty. of Bearings PE (Shaft)     1
Qty. of Bearings SE (OPP)       1
Bearing Number PE (Shaft)       6212-J
Bearing Number SE (OPP)         7222 BEM
```

NIDEC MOTOR CORPORATION

8050 WEST FLORISSANT AVE.
ST. LOUIS, MO 63136

DATE: 2/18/2019

P.O. NO.: DT79
Order/Line NO.: 22206 MN 100

TO:

Model Number: DT79
Catalog Number: HO100V2SLG
VHS Weather Protected
CONF,MOTOR,VHS WPI

REVISIONS:
(NONE)

ALL DOCUMENTS HEREIN ARE CONSIDERED CERTIFIED BY NIDEC MOTOR CORPORATION.
THANK YOU FOR YOUR ORDER AND THE OPPORTUNITY TO SERVE YOU.

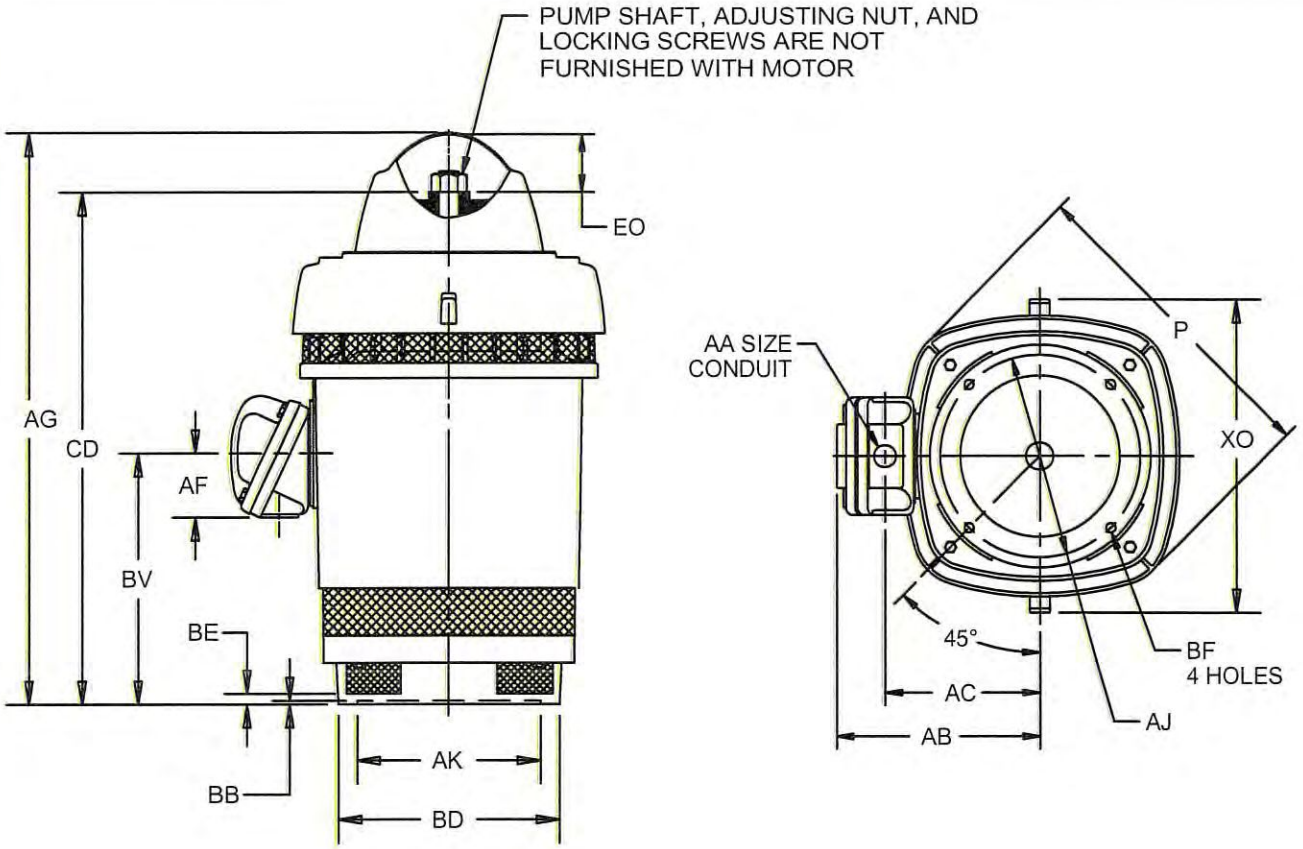
Accessories:

Counter CW Rotation FODE
Aegis Ground Ring
Insul. Bearing - Upper Bracket
115 Volt Space Heaters
Special Balance
Thermostats - Normally Closed
N/A
Standard Leadtime: NA
Est. Weight (lbs ea): 1110 ~ F.O.B.:

USE THE DATA PROVIDED BELOW TO SELECT THE APPROPRIATE DIMENSION PRINT

Horsepower	100
Pole(s)	04
Voltage(s)	460
Frame Size	404TP
Outlet Box AF	3.38
Outlet Box AA	3.00

EFFECTIVE: 02-MAR-11	VERTICAL MOTORS WEATHER PROTECTED TYPE I FRAME: 404, 405TP, TPA TYPE: RU, RUE, RUI, RUS	PRINT: 09-2293
SUPERSEDES: 31-JUL-03		SHEET: 1 OF 1



DIMENSIONS ARE IN INCHES AND MILLIMETERS

UNITS	P [2]	AG	AJ	AK +.005	BB MIN	BE	BF	BV	CD	EO	XO
IN	23.75	42.69	14.750	13.500	.25	.75	.69	18.13	36.94	5.50	24.13
MM	603	1084	374.65	342.90	6	19	18	461	938	140	613

FRAME	CONDUIT BOX MATERIAL	UNITS	AA	AB	AC	AF
400	STEEL	IN	3.00	16.97	12.69	3.38
		MM		431	322	86
	CAST IRON	IN	3 NPT	17.75	13.38	4.63
		MM		451	340	118

FRAME	UNITS	BD MAX
404, 405TP	IN	16.50
	MM	419
404, 405TPA	IN	20.00
	MM	508

1: ALL ROUGH DIMENSIONS MAY VARY BY .25" DUE TO CASTING AND/OR FABRICATION VARIATIONS.
2: LARGEST MOTOR WIDTH.
3: TOLERANCES SHOWN ARE IN INCHES ONLY.
4: CONDUIT BOX OPENING MAY BE LOCATED IN STEPS OF 90° REGARDLESS OF LOCATION. STANDARD AS SHOWN WITH CONDUIT OPENING DOWN.

TOLERANCES	
FACE RUNOUT	.007 T.I.R.
PERMISSIBLE ECCENTRICITY OF MOUNTING RABBET	.007 T.I.R.

09-2293/B

Nidec Motor Corporation
St. Louis, Missouri

ISSUED BY	R. KING
APPROVED BY	M. TREJO

IHP_DP_NMCA (MAR-2011) SOLIDEDGE

NAMEPLATE DATA

CATALOG NUMBER:	HO100V2SLG			NAMEPLATE PART #:	422707-005		
MODEL	DT79	FR	404TP	TYPE	RUSI	ENCL	WPI
SHAFT END BRG	6212-J - QTY 1			OPP END BRG	7222 BEM - QTY 1		
PH	3	MAX AMB	40 C	ID#			
INSUL CLASS	F	Asm. Pos.		DUTY	CONT		

HP	100	RPM	1785	HP		RPM	
VOLTS	460			VOLTS			
FL AMPS	114.0			FL AMPS			
SF AMPS	131.0			SF AMPS			
SF	1.15	DESIGN	B	CODE	G	SF	DESIGN	CODE
NEMA NOM EFFICIENCY	95.4	NOM PF	86.3	KiloWatt	74.6	NEMA NOM EFFICIENCY	NOM PF	
GUARANTEED EFFICIENCY	94.5	MAX KVAR		HZ	60	GUARANTEED EFFICIENCY	MAX KVAR	HZ

HAZARDOUS LOCATION DATA (IF APPLICABLE):

DIVISION		CLASS I		GROUP I	
TEMP CODE		CLASS II		GROUP II	

VFD DATA (IF APPLICABLE):

VOLTS	460		
AMPS	119.7		
TORQUE 1	294.3LB-FT	TORQUE 2	
VFD LOAD TYPE 1	VT/PWM	VFD LOAD TYPE 2	
VFD HERTZ RANGE 1	6-60	VFD HERTZ RANGE 2	
VFD SPEED RANGE 1	180-1800	VFD SPEED RANGE 2	
SERVICE FACTOR	1.00	FL SLIP	
NO. POLES		MAGNETIZING AMPS	
VECTOR MAX RPM		Encoder PPR	
Radians / Seconds		Encoder Volts	

NEMA Premium™

TEAO DATA (IF APPLICABLE):

HP (AIR OVER)		HP (AIR OVER M/S)		RPM (AIR OVER)		RPM (AIR OVER M/S)	
FPM AIR VELOCITY		FPM AIR VELOCITY M/S		FPM AIR VELOCITY SEC			

ADDITIONAL NAMEPLATE DATA:

Decal / Plate	WD=165975,CP=132839	Customer PN	
Notes		Non Rev Ratchet	NRR
Max Temp Rise		OPP/Upper Oil Cap	5 QT/4.7 L
Thermal (WDG)	OVER TEMP PROT 2	SHAFT/Lower Oil Cap	GREASE
Altitude		Usable At	
Regulatory Notes		Regulatory Compliance	
COS		Marine Duty	
Balance	0.08 IN/SEC	Arctic Duty	
3/4 Load Eff.	95.5	Inrush Limit	
Motor Weight (LBS)	1110	Direction of Rotation	
Sound Level		Special Note 1	
Vertical Thrust (LBS)	6700	Special Note 2	
Thrust Percentage	100% HT	Special Note 3	
Bearing Life		Special Note 4	
Starting Method		Special Note 5	
Number of Starts		Special Note 6	
200/208V 60Hz Max Amps		SH Max. Temp.	
190V 50 hz Max Amps		SH Voltage	SH VOLTS=115V
380V 50 Hz Max Amps		SH Watts	SH WATTS=144W
NEMA Inertia		Load Inertia	
Sumpheater Voltage		Sumpheater Wattage	
Special Accessory Note 1		Special Accessory Note 16	
Special Accessory Note 2		Special Accessory Note 17	
Special Accessory Note 3		Special Accessory Note 18	
Special Accessory Note 4		Special Accessory Note 19	
Special Accessory Note 5		Special Accessory Note 20	
Special Accessory Note 6		Special Accessory Note 21	
Special Accessory Note 7		Special Accessory Note 22	
Special Accessory Note 8		Special Accessory Note 23	
Special Accessory Note 9		Special Accessory Note 24	
Special Accessory Note 10		Special Accessory Note 25	
Special Accessory Note 11		Special Accessory Note 26	
Special Accessory Note 12		Special Accessory Note 27	
Special Accessory Note 13		Special Accessory Note 28	
Special Accessory Note 14		Special Accessory Note 29	
Special Accessory Note 15		Special Accessory Note 30	
Heater in C/B Voltage		Heater in C/B Watts	
Zone 2 Group		Division 2 Service Factor	
Note 1		Note 2	
Note 3			

NIDEC MOTOR CORPORATION

ST. LOUIS, MO

TYPICAL NAMEPLATE DATA
ACTUAL MOTOR NAMEPLATE LAYOUT MAY VARY
SOME FIELDS MAY BE OMITTED

MOTOR PERFORMANCE

MODEL NO.	CATALOG NO.	PHASE	TYPE	FRAME
DT79	HO100V2SLG	3	RUSI	404TP
ORDER NO.		22206	LINE NO.	

MPI:	141574
HP:	100
POLES:	4
VOLTS:	460
HZ:	60
SERVICE FACTOR:	1.15
EFFICIENCY (%):	
S.F.	94.8
FULL	95
3/4	95.5
1/2	95.1
1/4	92.4
POWER FACTOR (%):	
S.F.	86.4
FULL	86.3
3/4	84.5
1/2	78.5
1/4	59.7
NO LOAD	5.1
LOCKED ROTOR	32.9
AMPS:	
S.F.	131
FULL	114
3/4	87
1/2	63
1/4	42
NO LOAD	32.8
LOCKED ROTOR	737.5
NEMA CODE LETTER	G
NEMA DESIGN LETTER	B
FULL LOAD RPM	1785
NEMA NOMINAL / EFFICIENCY (%)	95.4
GUARANTEED EFFICIENCY (%)	94.5
MAX KVAR	22.2
AMBIENT (°C)	40
ALTITUDE (FASL)	3300
SAFE STALL TIME-HOT (SEC)	25
SOUND PRESSURE (DBA @ 1M)	70
TORQUES:	
BREAKDOWN{% F.L.}	230
LOCKED ROTOR{% F.L.}	186
FULL LOAD{LB-FT}	294.3

NEMA Nominal and Guaranteed Efficiencies are up to 3,300 feet above sea level and 25 ° C ambient

The Above Data Is Typical, Sinewave Power Unless Noted Otherwise

NIDEC MOTOR CORPORATION
ST. LOUIS, MO

Submersible pressure sensor
For superior applications
Model LF-1

WIKA data sheet LM 40.04

Applications

- Level measurement in vessel and storage systems
- Overfilling and no-load operation monitoring
- Level measurement in rivers and lakes
- Deep well and groundwater monitoring
- Battery-operated level measuring systems

Special features

- Suitable for measurements in contaminated and aggressive media
- An optimised discharge behaviour and a large pressure port prevent the instrument from clogging and ensure a minimum maintenance effort
- Can be used in explosion-protected areas
- Developed for wireless applications

Fig. left: **With conduit and FEP cable**
Fig. right: **With PUR cable**

Description

Permanently reliable
Extensive test cycles not only guarantee a permanent resistance and long service life in all commonly used oils and fuels, including aggressive crude oils and biofuels, but also in flowing and stagnant waters and in wastewater treatment applications.

Thanks to newly developed special cables, components made of high-alloyed stainless steel and an optional overvoltage protection against lightning, the submersible pressure sensor is perfectly suited for the measurement of liquid levels, also in the outdoor area.

Precise level and temperature measurement with HART® communication
A measurement uncertainty of max. 0.5 %, a long-term drift of 0.1 % and slight temperature errors make the LF-1 a reliable measurement solution for the monitoring of storage tanks and bodies of water.

The additional analogue temperature output facilitates the compensation of a temperature-induced density error especially at temperatures of up to -40 ... +80 °C [-40 ... +176 °F].
The integrated HART® communication can be used for scaling the measuring range and for the parameterisation of unit, error signal, and others.

Optimised electronics for battery operation
The modern electronic system guarantees not only a high accuracy in the long term but also ensures a very long battery life thanks to low power supply, low current consumption, fast response time and low-power output signals.

Safety also in hazardous areas
The optional intrinsically safe electronic system is authorised according to the common international standards and allows a safe worldwide application in explosive gases and vapours.

Data sheets showing similar products:
Submersible pressure sensor, standard version; model LS-10; see data sheet PE 81.55
High-performance submersible pressure sensor; model LH-20; see data sheet PE 81.56

Measuring ranges

Gauge pressure							
bar	0 ... 0.1	0 ... 0.16	0 ... 0.25	0 ... 0.4	0 ... 0.6	0 ... 1	0 ... 1.6
	0 ... 2.5	0 ... 4	0 ... 6				
inWC	0 ... 50	0 ... 100	0 ... 150	0 ... 250			
psi	0 ... 5	0 ... 10	0 ... 15	0 ... 25	0 ... 50	0 ... 100	
mH_2O	0 ... 1	0 ... 1.6	0 ... 2.5	0 ... 4	0 ... 6	0 ... 10	0 ... 16
	0 ... 25	0 ... 40	0 ... 60				

Absolute pressure				
bar	0 ... 1.6	0 ... 2.5	0 ... 4	0 ... 6
psi	0 ... 25	0 ... 50	0 ... 100	

The given measuring ranges are also available in mbar, kPa and MPa.

Overload safety
≥ 3 times

Temperature measurement (option)

Measuring ranges	
Option 1	-10 ... +50 °C [14 ... 122 °F]
Option 2	-40 ... +80 °C [-40 ... +176 °F]

The temperature output signal corresponds to the selected medium temperature (see operating conditions).

Output signals

Without temperature measurement	
Standard	4 ... 20 mA (2-wire)
Option 1	4 ... 20 mA + HART® (2-wire)
Option 2	DC 0.1 ... 2.5 V (3-wire, low power) [1]

With temperature measurement	
Standard	2 x 4 ... 20 mA (2 x 2-wire, galvanically isolated)
Option 1	2 x DC 0.1 ... 2.5 V (3-wire, low power) [1]

1) Shortening the cable always results in a modification of the voltage signal (see accuracy specifications).

Permissible load in Ω
Current output: ≤ $(U_+ - (U_{+min} - 0.5\ V)) / 0.023\ A$
Voltage output: ≤ 1mA

Additional load of the cable:
≤ cable length in m x 0.084 Ω
[≤ cable length in ft x 0.0256 Ω]

For voltage outputs, the load must be specified so that the output current does not exceed 1 mA.

Voltage supply

The power supply depends on the selected output signal and the intrinsically safe electronics (Ex approval).
When being operated in hazardous areas, the submersible pressure sensor must be powered via a repeater power supply (see accessories).

Power supply

Output signal	Standard	With Ex approval
4 ... 20 mA (2-wire)	DC 8 ... 36 V	DC 9 ... 30 V
4 ... 20 mA + HART® (2-wire)	DC 12 ... 36 V	DC 12 ... 30 V
DC 0.1 ... 2.5 V (3-wire, low power)	DC 3.6 ... 36 V	-
2 x 4 ... 20 mA (2 x 2-wire, galvanically isolated)	DC 8 ... 36 V	DC 9 ... 30 V
2 x DC 0.1 ... 2.5 V (3-wire, low power)	DC 3.6 ... 36 V	-

Low power is optimised for the battery operation.

Current consumption

Current output: max. 25 mA per output
Voltage output: max. 5 mA

Reference conditions (per IEC 61298-1)

Temperature

15 ... 25 °C [59 ... 77 °F]

Atmospheric pressure

860 ... 1,060 mbar [86 ... 106 kPa /12.5 ... 15.4 psig]

Air humidity

45 ... 75 % r. h.

Power supply

- DC 24 V with current output
- DC 5 V with voltage output

Mounting position

Calibrated in vertical mounting position with process connection facing downwards.

Accuracy specifications

Accuracy at reference conditions (pressure sensor)

	Accuracy [1]	Non-linearity (per IEC 61298-2) BFSL
Standard	≤ ±1 % of span	≤ ±0.5 % of span
Option	≤ ±0.5 % of span	≤ ±0.25 % of span

1) Including non-linearity, hysteresis, zero offset and end value deviation (corresponds to measured error per IEC 61298-2).

During the adjustment of the voltage signals, the cable length will be compensated. Every shortening of the cable at a later stage results in an offset error of approx. 0.14 % / 10 m [0.13 % / 30 ft].

Accuracy after turndown 5:1 via HART®	
Standard	≤ ±1.25 % of scaled span
Option	≤ ±0.75 % of scaled span

By setting a turndown of greater than 5:1, a higher measuring deviation applies.

Accuracy (temperature sensor)

-10 ... +80 °C [14 ... 176 °F]: ≤ ±1.8 K
-30 ... -10 °C [-22 ... +14 °F]: ≤ ±3.0 K
-40 ... -30 °C [-40 ... -22 °F]: ≤ ±4.5 K

Non-repeatability

≤ 0.1 % of span
≤ 0.2 % of span (with voltage output and cable length > 100 m [325 ft])

Long-term stability (per DIN 16086:2006-01)

Measuring range > 0 ... 0.1 bar: ≤ ±0.1 % of span/year
Measuring range ≤ 0 ... 0.1 bar: ≤ ±0.2 % of span/year

Switch-on time

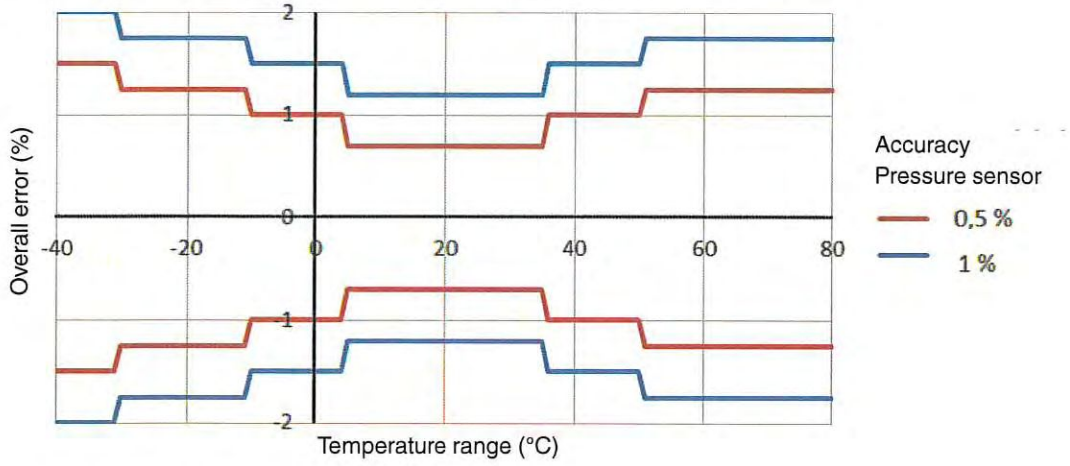
Output signals without HART®: ≤ 150 ms
Output signals with HART®: ≤ 250 ms

Settling time

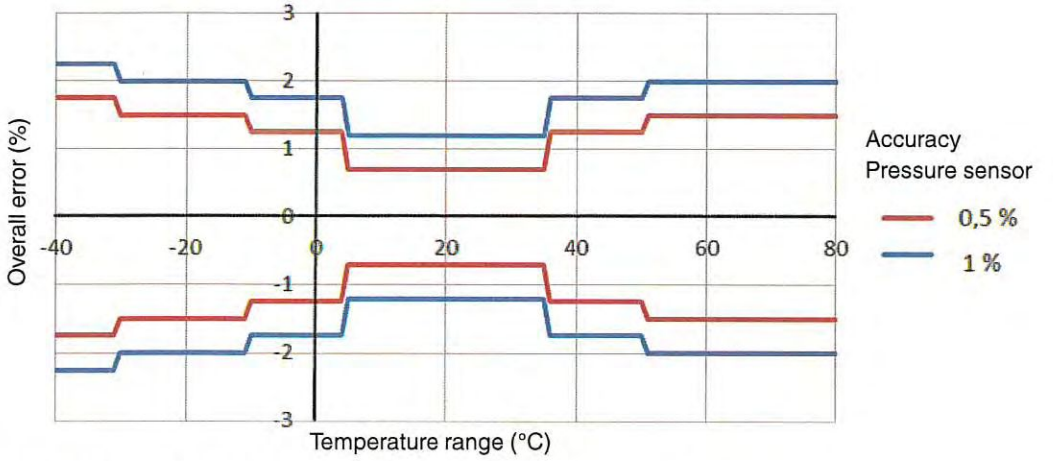
Output signals without HART®: ≤ 100 ms
Output signals with HART®: ≤ 250 ms

Overall error
Including non-linearity, hysteresis, zero point and span error, temperature error and temperature hysteresis.

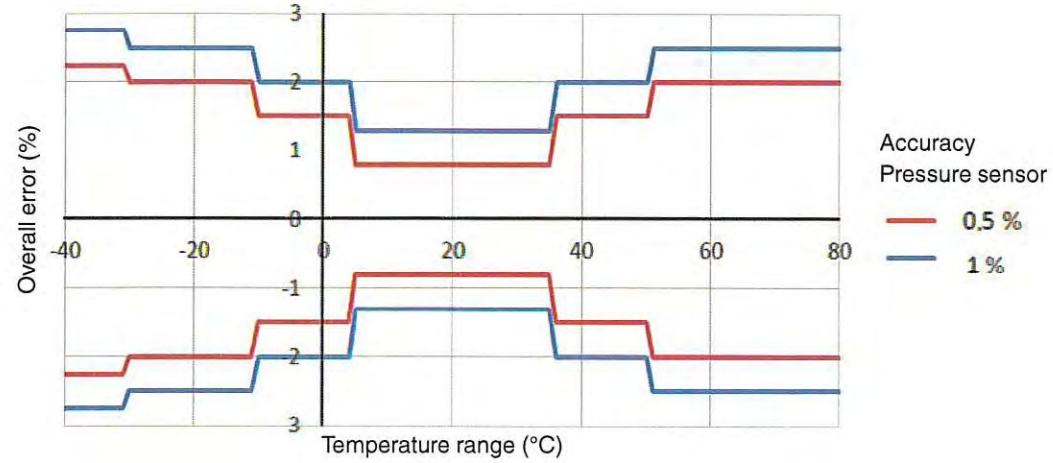
■ **Measuring range ≥ 0.6 bar, ≥ 250 inWC, ≥ 10 psi, ≥ 6 mH_2O**



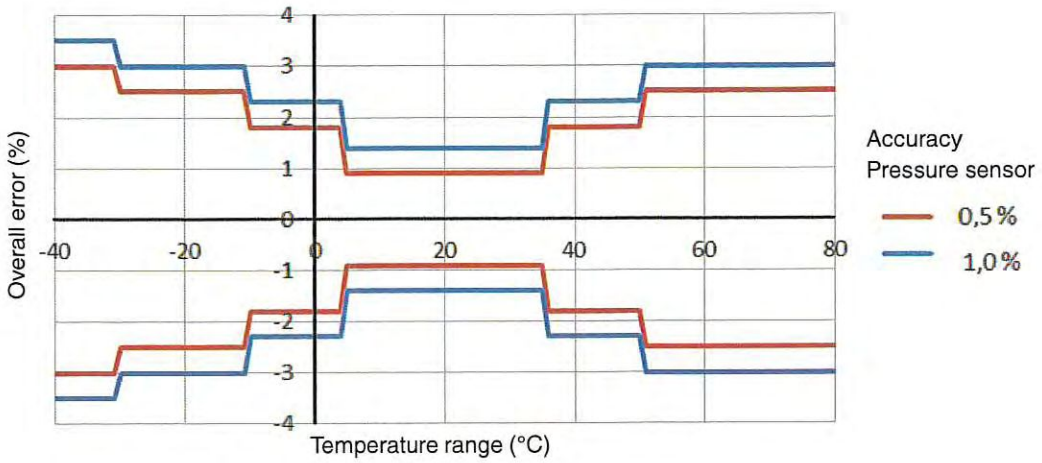
■ **Measuring range 0.4 bar, 150 inWC, 4 mH_2O**



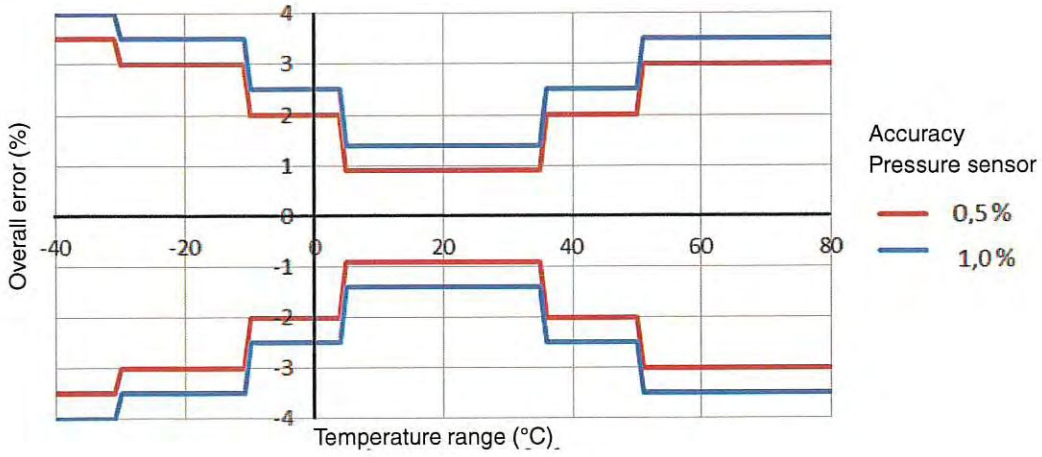
■ **Measuring range 0.25 bar, 100 inWC, 5 psi, 2.5 mH_2O**



■ **Measuring range 0.16 bar, 1.6 mH_2O**



■ **Measuring range 0.1 bar, 50 inWC, 1 mH_2O**



Operating conditions

Ingress protection
IP68

Increased overvoltage protection for lightning strikes (option)
Nominal discharge current: ≥ 10 kA
Rise time: 8/20 µs

Immersion depth
max. 100 m (325 ft)

Max. tension force of the cable
1,000 N

Weight
Submersible pressure sensor: approx. 300 g [0.661 lbs]
Cable: approx. 80 g/m [0.538 lbs / 10 ft]
Additional weight: approx. 300 g [0.661 lbs]

Permissible temperature ranges		
Medium	Standard	-10 ... +50 °C [14 ... 122 °F]
	Option	-40 ... +80 °C [-40 ... +176 °F]
Ambient	Standard	-40 ... +80 °C [-40 ... +176 °F]
Storage	Standard	-30 ... +80 °C [-22 ... +176 °F]

Explosion protection (option)

Approval	Marking
ATEX	Zone 0 gas [II 1G Ex ia IIC T4/T5/T6 Ga] Zone 1 gas [II 2G Ex ia IIC T4/T5/T6 Gb]
IECEx	Zone 0 gas [Ex ia IIC T4/T5/T6 Ga] Zone 1 gas [Ex ia IIC T4/T5/T6 Gb]
CSA	Class I, division 1, groups A, B, C, D Class I, zone 0; A/Ex ia IIC; T6 ... T4 Ga Class I, zone 1; A/Ex ia IIC; T6 ... T4 Gb Class I, zone 2; A/Ex ic IIC; T6 ... T4 Gc (see control drawing 14136138)
FM	Class I, division 1, groups A, B, C, D Class I, zone 0, AEx ia IIC, T6 ... T4 Ga Class I, zone 1, AEx ia IIC, T6 ... T4 Gb Class I, zone 2, AEx ic IIC, T6 ... T4 Gc (see control drawing 14136138)
EACEx	Zone 0 Gas [0ExiaIICT6...T4 X] Zone 1 Gas [1ExiaIICT6...T4 X]

Permissible temperature ranges in hazardous areas (ATEX, IECEx, EACEx)

Ambient and media temperature range (Pi = 600 mW)	Ambient and media temperature range (Pi = 800 mW)	Temperature code
$-40 \leq T_a \leq +59$ °C	$-40 \leq T_a \leq +52$ °C	T6
$-40 \leq T_a \leq +74$ °C	$-40 \leq T_a \leq +67$ °C	T5
$-40 \leq T_a \leq +80$ °C	$-40 \leq T_a \leq +76$ °C	T4 - T1

Permissible temperature ranges in hazardous areas (FM, CSA)

Ambient and media temperature range (Pi = 600 mW)	Temperature code
$-40 \leq T_a \leq +59$ °C	T6
$-40 \leq T_a \leq +74$ °C	T5
$-40 \leq T_a \leq +80$ °C	T4 - T1

Materials (wetted)

	Standard	Option (high-resistance)
Case	316L	318LN
Sensor element	316L	Hastelloy C276
Cable	PUR	FEP
Sealing	FKM	FKM
Protection cap	PVDF	PVDF

Electrical connection

Cable outlet	
Standard	Cable outlet without conduit
Option	Cable outlet with conduit

Cable lengths										
Standard	Metres (m)	3	5	10	15	20	25	30	40	50
	Feet (ft)	10	20	30	40	50	75	100	125	150
Option	Metres (m)	For current output, freely definable up to 1,000 m								
		For voltage output, freely definable up to 200 m								
	Feet (ft)	For current output, freely definable up to 3,250 ft								
		For voltage output, freely definable up to 650 ft								

Other lengths on request

Short-circuit resistance
S+ vs. U-

Reverse polarity protection
U+ vs. U-

Resistance to overvoltage
DC 40 V

Insulation voltage

Standard:	DC 850 V
Increased overvoltage protection for lightning strikes:	DC 50 V

Connection diagrams

4 ... 20 mA, 4 ... 20 mA + HART® (2-wire)	
U+	brown (BN)
U-	blue (BU)
Shield	grey (GY)

DC 0.1 ... 2.5 V (3-wire, low power)	
U+	brown (BN)
U-	blue (BU)
S+	black (BK)
Shield	grey (GY)

2 x 4 ... 20 mA (2 x 2-wire, galvanically isolated)	
U+ (pressure sensor)	brown (BN)
U- (pressure sensor)	blue (BU)
U+ (temperature sensor)	green (GN)
U- (temperature sensor)	white (WH)
Shield	grey (GY)

2 x DC 0.1 ... 2.5 V (3-wire, low power)	
U+	brown (BN)
U-	blue (BU)
S+ (pressure sensor)	black (BK)
S+ (temperature sensor)	green (GN)
Shield	grey (GY)

Legend
U+ Positive power supply terminal
U- Negative power supply terminal
S+ analogue output

Approvals (option)

Logo	Description	Country
CE Ex	**EU declaration of conformity** ■ EMC directive EN 61326 emission (group 1, class B) and immunity (industrial application) ■ RoHS directive ■ ATEX directive [1] - Ex i Zone 0 gas [II 1G Ex ia IIC T4/T5/T6 Ga] Zone 1 gas [II 2G Ex ia IIC T4/T5/T6 Gb]	European Union
IEC IECEx	**IECEx** [1] Hazardous areas - Ex i Zone 0 gas [Ex ia IIC T4/T5/T6 Ga] Zone 1 gas [Ex ia IIC T4/T5/T6 Gb]	International
FM APPROVED	**FM** [1] Hazardous areas Class I, division 1, groups A, B, C, D Class I, zone 0, AEx ia IIC, T6 ... T4 Ga Class I, zone 1, AEx ia IIC, T6 ... T4 Gb Class I, zone 2, AEx ic IIC, T6 ... T4 Gc (see control drawing 14136138)	USA
c SP us	**CSA** ■ Safety (e.g. electr. safety, overpressure, ...) ■ Hazardous areas [1] Class I, division 1, groups A, B, C, D Class I, zone 0; A/Ex ia IIC; T6 ... T4 Ga Class I, zone 1; A/Ex ia IIC; T6 ... T4 Gb Class I, zone 2; A/Ex ic IIC; T6 ... T4 Gc (see control drawing 14136138)	USA and Canada
EAC Ex	**EAC** ■ EMC directive ■ Hazardous areas (see approval)	Eurasian Economic Community

1) Only available with output signals 4 ... 20 mA, 2 x 4 ... 20 mA and 4 ... 20 mA + HART®.

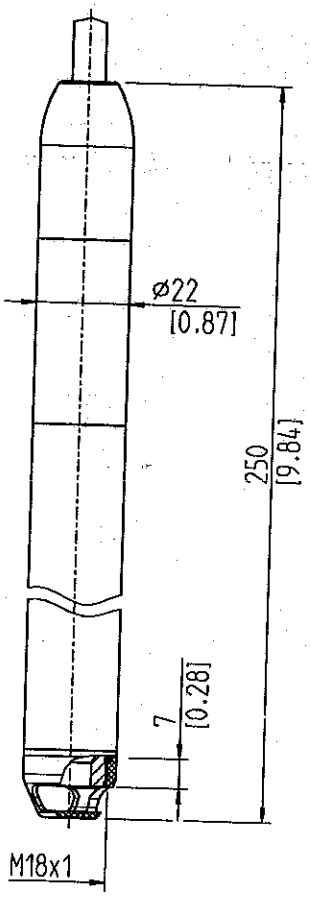
Manufacturer's information and certificates

China RoHS conformity
SJ/T 11364-2014

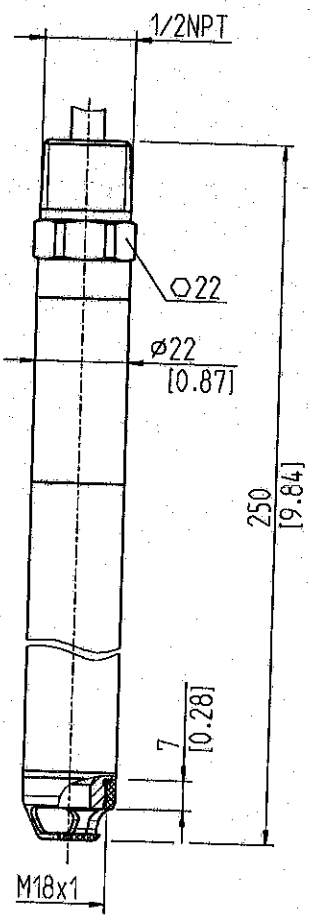
Approvals and certificates, see website

Dimensions in mm [in]

Cable outlet without conduit



Cable outlet with conduit



Accessories

	Description	Order number
	**Additional weight** The additional weight increases the dead weight of the submersible pressure sensor. It simplifies the lowering in monitoring wells, narrow shafts and deep wells. It effectively reduces negative environmental influences of the measuring medium (e.g. turbulent flows) on the measuring result. Stainless steel 316L, approx. 300 g [0.661 lbs], length 115 mm [4.53 in]	14131008
	**Cable strain relief clamp** The cable strain relief clamp ensures easy and secure mechanical fastening of the submersible pressure sensor's cable. It serves to guide the cable to prevent mechanical damage and to reduce the action of tensile stresses.	14052336
	**Cable box** The cable socket, with IP67 ingress protection and waterproof ventilation element, provides a moisture-free electrical termination for the submersible pressure sensor. It should be mounted in a dry environment, outside any shafts or vessels, or directly in the switch cabinet. Not suitable for hazardous areas!	14052339
	**Intrinsically safe repeater power supply, model IS Barrier** Input 0/4 ... 20 mA, supplying and non-supplying Bidirectional HART® signal transmission For details see data sheet AC 80.14	14117118
	**Indication and programming module HART® DIH50 and DIH52** 5-digit display, 20-segment bar graph, without separate power supply, with additional HART® functionality. Automatic adjustment of measuring range and span. "Secondary-master" functionality: Setting the measuring range and unit of the connected transmitter using HART® standard commands possible. Optionally explosion protection per ATEX.	on request
	**HART® modem with USB, RS-232 or Bluetooth® interface** For scaling the measuring range using a PC via the HART® protocol, a HART® modem with USB, RS-232 or Bluetooth® interface is available. The modem communicates with all registered HART® field instruments and can be used with the most popular HART®-compatible software programs.	7957522 (RS-232 interface) 11025166 (USB interface) 11364254 (Bluetooth® interface)

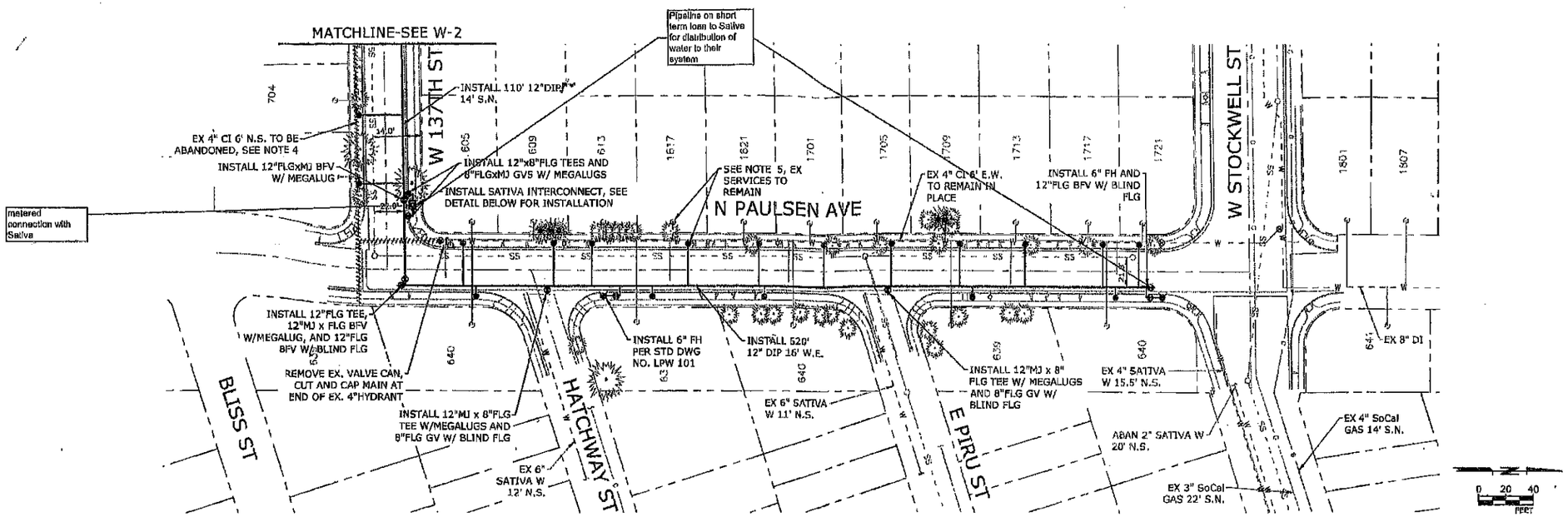
Ordering information

Model / Measuring range / Output signal / Accuracy / Case material / Cable outlet / Cable material / Cable length / Overvoltage protection / Medium temperature / Approval / Accessories

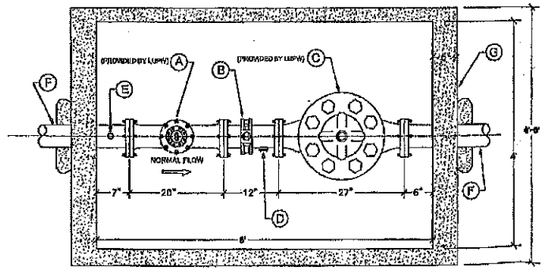
WIKA Alexander Wiegand SE & Co. KG
Alexander-Wiegand-Straße 30
63911 Klingenberg/Germany
Tel. +49 9372 132-0
Fax +49 9372 132-406
info@wika.de
www.wika.de

APPENDIX J

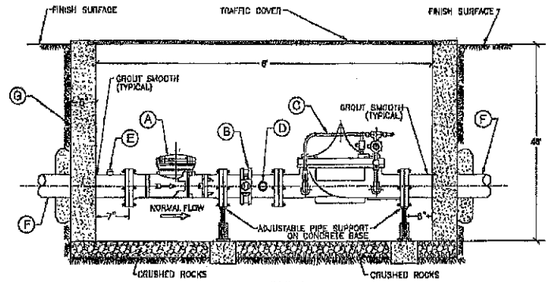
LIBERTY UTILITIES INTERCONNECTION LOCATION AND LAYOUT



SATIVA INTERCONNECTION DETAIL



TOP VIEW



SIDE VIEW

NOTE:

1. CONTRACTOR IS RESPONSIBLE FOR WALKING THE PROJECT SITE AND HAVING AN UNDERSTANDING OF ACTUAL FIELD CONDITIONS PRIOR TO BIDDING ON THIS PROJECT.
2. EXISTING UTILITIES ARE SHOWN BASED ON AVAILABLE RECORD INFORMATION AND PARTIAL TOPOGRAPHIC SURVEY DATA. THE CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS ON THE JOB SITE PRIOR TO CONSTRUCTION.
3. THRUST BLOCKS ON FITTINGS ARE TO BE INSTALLED PER STD DWG NO. LPW-107. THRUST BLOCKS ON VALVES ARE TO BE INSTALLED PER STD DWG NO. LPW-105.
4. FOR WATER VALVES ON EXISTING WATER LINES TO BE ABANDONED, CLOSE VALVE, REMOVE VALVE CAN, LID, AND RISER AND BURY. FOR FIRE HYDRANTS ON EXISTING WATER LINES TO BE ABANDONED, REMOVE EXISTING HYDRANT, CAP LATERAL, AND BURY.
5. INSTALL NEW 1" WATER SERVICE CONNECTIONS ALONG PAULSEN AVE. DO NOT TIE OVER NEW SERVICE TO EXISTING CUSTOMER HOUSE LINE. EXISTING WATER SERVICES ALONG PAULSEN AVE TO REMAIN IN PLACE.

LEGEND

DESCRIPTION
(A) 8" DOWSE (ANI-COMPATIBLE) ULTRASONIC METER PROVIDED BY LPWI
(B) 8" DIP FLG x FLG SPLIT SPOOL W/GROOVES AND VICTAULIC COUPLING
(C) 8" 1 WAY PRESSURE REDUCING /PRESSURE SUSTAINING CLA-VALVE, 8" 602-01GDPV -- IN BODY, TEQUB FLANGES, EPOXY COATING, BRONZE TRIM -- TUBING (PROVIDED BY LPWI)
(D) 2" SADDLE W/2" FULL PORT BRASS CORP STOP
(E) 1" SADDLE AND 1" BRASS CORP STOP
(F) 8" DIP FLG x PE SPOOL
(G) ARMORCAST 40" x 72" x 48" OPEN BOTTOM POLYMER CONCRETE VAULT W/TORSION RESIST POLYMER CONCRETE COVER W/OVERSIZED RECESSED PADLOCK HASP PER DWG NUMBER A6001506STP048MF (PROVIDED BY LPWI)

REV	DATE	BY	DESCRIPTION

WARNING 0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

DESIGNED CAO
DRAWN MNF
CHECKED BMG
SCALE 1" = 40'

PREPARED BY: DATE

FEBRUARY 2019

Murraysmith
www.murraysmith.us
3111 CAMINO DEL RIO NORTH
SAN DIEGO, CA 92108
P 619.696.0464

LIBERTY UTILITIES (PARK WATER)
9750 WASHBURN RD, DOWNEY, CA 90241

APPROVED: 2-5-19 DATE
REGION MANAGER, ENGINEERING

APPROVED: 2/5/19 DATE
DIRECTOR, OPERATIONS

STOCKWELL/136TH/137TH/WILMINGTON (PHASE 1) PLAN
CITY OF COMPTON

PLAN - W 137TH ST, N PAULSEN AVE

SHEET W-3
SHEET 6 OF 8
PROJECT # 11183010

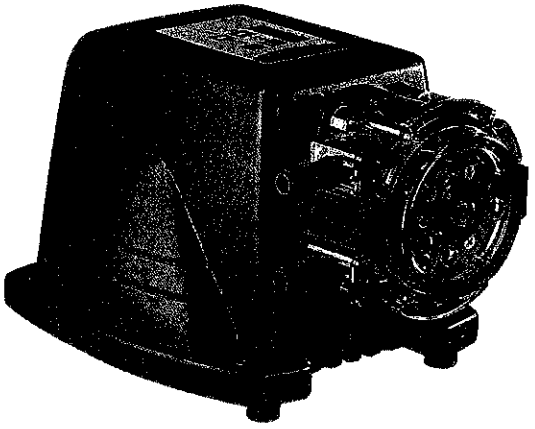
J:\Engineering\CAD\CB\CONST\2019 Jobs\11183010 Stockwell Phase 1\CAD\18-2333 LIBERTY UTILITIES STOCKWELL - 2013\DRIVE_H\EVT_Projects\18\2333 - Liberty Utilities Stockwell St\CAD\Sheets\18-2333-PH1-PLANS Rev1-30-19.dwg W-3 2/5/2019 1:56 PM JRELLOSA 19.1s (LMS Tech)

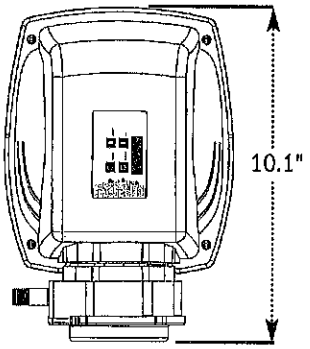
APPENDIX K

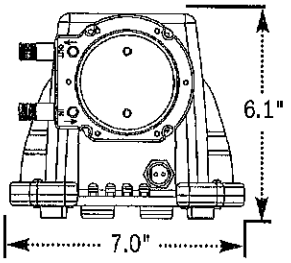
SPECIFICATIONS OF STENNER SVP SERIES DIGITAL PERISTATIC CHEMICAL METERING PUMP AND NSF/ANSI STANDARD 61 CERTIFICATION FOR SANTOPRENE MATERIALS

SVP PUMP SERIES SPECIFICATIONS

STENNER PUMPS







SHIPPING WEIGHT 10 lbs (4.5 kg)

METERING PUMP
UL LISTED
96F0

METERING PUMP
LR79585
C SA US

IPX4
CE

THIS PUMP IS TESTED AND CERTIFIED BY WQA ACCORDING TO NSF/ANSI 61 FOR CONTACT WITH SODIUM HYPOCHLORITE AND WATER ONLY AND NSF/ANSI 372.
C USA

NOTE: Agency listings vary by model. 12VDC pumps do not carry any agency listings. Contact factory for details.

FEATURES

- 4-button keypad with up/down arrows, prime button and on/off switch
- 3-point roller design assists in anti-siphon protection
- Pump head requires no valves, allows for easy maintenance
- Self-priming against maximum working pressure foot valve not required
- Pump does not lose prime or vapor lock
- Pumps off-gassing solutions and can run dry
- Injection check valve included with models rated 100 psi (6.9 bar) maximum
- Output volume is not affected by back pressure
- Easy to change pump tube; lubrication is not required
- Pump tubes and pump heads interchange between models
- Models (Santoprene® only) tested by Water Quality Association to conform to ANSI/NSF STD 61 & 372.

SVP PUMP SERIES SPECIFICATIONS

STENNER PUMPS

FLOW RATE OUTPUT CONTROL
Digital keypad,
5%-100%, 1% increments, non-scalable

MAXIMUM WORKING PRESSURE
25 psi (1.7 bar), 100 psi (6.9 bar)

MAXIMUM OPERATING TEMPERATURE
125°F (52°C)

MAXIMUM SUCTION LIFT
25 ft (7.6 m) vertical lift, based on water

MOTOR TYPE 12VDC gear motor

SHAFT RPM (average maximum) 47

DUTY CYCLE Continuous

MOTOR VOLTAGE (Amp Draw)
120V 50/60Hz 1PH (1.5)
220V 50/60Hz 1PH (1.5)
230V 50/60Hz 1PH (1.5)
250V 50/60Hz 1PH (1.5)
12VDC (4.2)

POWER CORD TYPE
120V 60Hz, 220V 60Hz: SJTOW
230V 50Hz, 250V 50Hz: H05VV-F
12VDC: VW-1

POWER CORD PLUG END
120V 60Hz NEMA 5-15P
220V 60Hz NEMA 6-15P
230V 50Hz CEE7/7
250V 50Hz CEE7/7
12VDC Pigtail connection

MATERIALS OF CONSTRUCTION

All Housings Polycarbonate

Pump Tube
Santoprene*, FDA approved or Versilon**

Check Valve Duckbill
Santoprene*, FDA approved or Pellethane*†

Pump Head Rollers Polyethylene

Roller Bushings Oil impregnated bronze

Suction/Discharge Tubing, Ferrules
Polyethylene, FDA approved

Tube and Injection Fittings
PVC or Polypropylene, NSF listed,

Connecting Nuts PVC, NSF listed

3/8" Adapter
PVC or Polypropylene, NSF listed

Suction Line Strainer and Cap
PVC or Polypropylene, NSF listed,
with Ceramic Weight

All Fasteners Stainless steel

Pump Head Latches Polypropylene

Leak Detect Clips, Springs, Pins Hastelloy*††

ACCESSORY KIT SHIPPED WITH EACH PUMP

3 Connecting nuts 1/4" or 3/8"
3 Ferrules 1/4" or 6 mm *Europe*
1 Injection check valve 100 psi (6.9 bar) max.
OR 1 injection fitting 25 psi (1.7 bar) max.
1 Weighted suction line strainer
1/4", 3/8" or 6 mm *Europe*
1 20' roll suction/discharge tubing
1/4" or 3/8", white or UV black
OR 6 mm white *Europe*
1 Additional pump tube
2 Additional latches
1 Manual

* Santoprene® is a registered trademark of Exxon Mobil Corporation.
** Versilon® is a registered trademark of Saint-Gobain Performance Plastics.
† Pellethane® is a registered trademark of Lubrizol Advanced Materials, Inc.

FLOW RATE OUTPUT CHART

25 psi (1.7 bar) maximum

	Model	Item Number Prefix	Pump Tube	Gallons per Day	Gallons per Hour	Ounces per Minute	Liters per Day	Liters per Hour	Milliliters per Minute
MANUAL	SVP1L1	**SVP1L1**	1	0.3 to 5.0	0.01 to 0.21	0.03 to 0.44	1.1 to 18.9	0.05 to 0.79	0.76 to 13.13
	SVP1L2	**SVP1L2**	2	0.8 to 17.0	0.03 to 0.71	0.07 to 1.51	3.0 to 64.4	0.13 to 2.68	2.08 to 44.65
	SVP1L3	**SVP1L3**	3	2.0 to 40.0	0.08 to 1.67	0.18 to 3.55	7.6 to 151.4	0.32 to 6.31	5.27 to 105.14
	SVP1L4	**SVP1L4**	4	3.0 to 60.0	0.13 to 2.50	0.27 to 5.33	11.4 to 227.1	0.48 to 9.46	7.92 to 157.71
	SVP1L5	**SVP1L5**	5	4.3 to 85.0	0.18 to 3.54	0.38 to 7.55	16.3 to 321.8	0.68 to 13.40	11.32 to 223.40
4-20MA INPUT*	SVP4L1	**SVP4L1**	1	0.3 to 5.0	0.01 to 0.21	0.03 to 0.44	1.1 to 18.9	0.05 to 0.79	0.76 to 13.13
	SVP4L2	**SVP4L2**	2	0.8 to 17.0	0.03 to 0.71	0.07 to 1.51	3.0 to 64.4	0.13 to 2.68	2.08 to 44.65
	SVP4L3	**SVP4L3**	3	2.0 to 40.0	0.08 to 1.67	0.18 to 3.55	7.6 to 151.4	0.32 to 6.31	5.27 to 105.14
	SVP4L4	**SVP4L4**	4	3.0 to 60.0	0.13 to 2.50	0.27 to 5.33	11.4 to 227.1	0.48 to 9.46	7.92 to 157.71
	SVP4L5	**SVP4L5**	5	4.3 to 85.0	0.18 to 3.54	0.38 to 7.55	16.3 to 321.8	0.68 to 13.40	11.32 to 223.40
				Approximate Outputs @ 50/60Hz					

100 psi (6.9 bar) maximum

	Model	Item Number Prefix	Pump Tube	Gallons per Day	Gallons per Hour	Ounces per Minute	Liters per Day	Liters per Hour	Milliliters per Minute
MANUAL	SVP1H1	**SVP1H1**	1	0.3 to 5.0	0.01 to 0.21	0.03 to 0.44	1.1 to 18.9	0.05 to 0.79	0.76 to 13.13
	SVP1H2	**SVP1H2**	2	0.8 to 17.0	0.03 to 0.71	0.07 to 1.51	3.0 to 64.4	0.13 to 2.68	2.08 to 44.65
	SVP1H7	**SVP1H7**	7	2.0 to 40.0	0.08 to 1.67	0.18 to 3.55	7.6 to 151.4	0.32 to 6.31	5.27 to 105.14
4-20MA INPUT*	SVP4H1	**SVP4H1**	1	0.3 to 5.0	0.01 to 0.21	0.03 to 0.44	1.1 to 18.9	0.05 to 0.79	0.76 to 13.13
	SVP4H2	**SVP4H2**	2	0.8 to 17.0	0.03 to 0.71	0.07 to 1.51	3.0 to 64.4	0.13 to 2.68	2.08 to 44.65
	SVP4H7	**SVP4H7**	7	2.0 to 40.0	0.08 to 1.67	0.18 to 3.55	7.6 to 151.4	0.32 to 6.31	5.27 to 105.14
				Approximate Outputs @ 50/60Hz					

* Input Signal Voltage/Resistance maximum 48VDC/128 ohm.

NOTE: Injection check valve included with pumps rated 100 psi (6.9 bar) maximum.

NOTICE: The information within this chart is solely intended for use as a guide. The output data is an approximation based on pumping water under a controlled testing environment. Many variables can affect the output of the pump. Stenner Pump Company recommends that all metering pumps undergo field calibration by means of analytical testing to confirm their outputs. The information contained in this flyer is not intended for specific application purposes. Stenner Pump Company reserves the right to make changes to prices, products, and specifications at any time without prior notice.

The Public Health and Safety Organization

NSF Product and Service Listings

These NSF Official Listings are current as of **Thursday, December 17, 2020** at 12:15 a.m. Eastern Time. Please contact NSF to confirm the status of any Listing, report errors, or make suggestions.

Alert: NSF is concerned about fraudulent downloading and manipulation of website text. Always confirm this information by clicking on the below link for the most accurate information: http://info.nsf.org/Certified/PwsComponents/Listings.asp?Company=32370&Standard=061&

NSF/ANSI/CAN 61
Drinking Water System Components - Health Effects

NOTE: Unless otherwise indicated for Materials, Certification is only for the Water Contact Material shown in the Listing. Click here for a list of Abbreviations used in these Listings. Click here for the definitions of Water Contact Temperatures denoted in these Listings.

ExxonMobil Chemical Company
22777 Springwoods Village Parkway
Spring, TX 77389
United States

Facility : Cantonment, FL

Mechanical Plumbing Devices

Trade Designation

Potable Water Materials

Santoprene™ 241-55 TPV[1]

[1] Fitting and appurtenance end use. Certified for a maximum surface area to volume ratio of 250 sq. in/L.

Santoprene™ 241-64 TPV[1]

[1] Fitting and appurtenance end use. Certified for a maximum surface area to volume ratio of 250 sq. in/L.

Santoprene™ 241-73W236 TPV[2]

[2] Fitting and appurtenance end use. Certified for a maximum surface area to volume ratio of 185 sq. in/L.

Santoprene™ 241-80W236 TPV[2]

[2] Fitting and appurtenance end use. Certified for a maximum surface area to volume ratio of 185 sq. in/L.

NOTE: All Listed products from this facility are NSF Certified, whether or not they bear the NSF Mark.

Potable Water Materials

Trade Designation	End Use	Water Contact Temp	Water Contact Material
Potable Water Materials			
Santoprene™ 241-55 TPV[1]	A, F, P	C. HOT	TPE
Santoprene™ 241-64 TPV[1]	A, F, P	C. HOT	TPE
Santoprene™ 241-73W236 TPV[2]	A, F, P	C. HOT	TPE
Santoprene™ 241-80W236 TPV[2]	A, F, P	C. HOT	TPE

[1] Certified for a maximum surface area to volume ratio of 500 sq. in/L.
[2] Certified for a maximum surface area to volume ratio of 345 sq.in./L.

NOTE: All Listed products from this facility are NSF Certified, whether or not they bear the NSF Mark.

Number of matching Manufacturers is 1
Number of matching Products is 8
Processing time was 1 seconds

APPENDIX L

SPECIFICATIONS AND NSF/ANSI STANDARD 61 CERTIFICATION FOR LMI CHEMICAL SOLUTION TANK

TANKS Pump Manufacturer Tanks

In stock & ready to ship!

LMI
an Accudyne Industries brand

50-Gallon Tank | 35-Gallon Flooded Suction Tank | 10-Gallon Tank

LMI Chemical Solution Tanks

- **Durable LLDPE and MDLPE construction with UV inhibitors**
- **Great for both indoor and outdoor applications**

LMI tanks offer rigid, lightweight polyethylene construction for maximum durability. They feature a designated molded area for pump mounting. Select tanks have easy-to-read markings along the side. 10-gallon models have one-gallon graduations, and 35-gallon models have five-gallon graduations. All tanks offer a maximum temperature rating of 110°F.

Choose from top-mount or flooded-suction configurations. Flooded-suction tanks virtually eliminate the need for priming. They feature a recessed pump mounting area designed specifically to fit all series A pumps.

Note: NSF/ANSI certification does not apply to tank accessories.

Shipping: Additional shipping fees apply.

Materials of construction

10- & 35-gallon: linear low-density polyethylene (LLDPE) with UV inhibitors

50-gallon: medium-density linear polyethylene (MDLPE) with UV inhibitors

NSF Certified to NSF/ANSI 61

Tanks suitable for use with:

50% aluminum sulfate (alum), 29% ammonium hydroxide, 45% ferric chloride, 23% fluoride, 38% hydrochloric acid, 50% hydrogen peroxide, 50% phosphoric acid, 10% potassium permanganate, 44% sodium bisulfite, 15% sodium hypochlorite. **Call us with questions about compatibility with any chemicals not on this list!**

CAPACITY (GALLONS)	DIMENSIONS (DIA x H)	CONFIGURATION	STOCK #	EACH
10	14" x 18"	Top Mount	61120	$
35	20" x 31"	Flooded Suction	61122	
50	23" x 42.75"	Top Mount	61124	

Replacement Items & Accessories

DESCRIPTION	STOCK #	EACH
Level Controller for 35-Gallon Tank, 115 VAC	67777*	$
Level Controller for 50-Gallon Tank, 115 VAC	67778*	
Replacement Fill Cap for 35-Gallon Tanks	61132	
Replacement Fill Cap for 50-Gallon Tanks	61136	
Replacement Tube Cap for 35- & 50-Gallon Tanks	61134	
Angled Shutoff Valve for 35-Gallon Tanks	61161	

***Alternate voltages available. Contact USABlueBook for more information.**

STENNER PUMPS

In stock & ready to ship!

30-Gallon Translucent Tank | 15-Gallon Opaque Gray Tank

Stenner Series STS Chemical Solution Tanks

- **Perfect for use in small systems**
- **Specifically designed for Stenner Classic and Econ series pumps**

Stenner STS top-mount tanks have a compact, lightweight design that's perfect for tight spaces. They feature a large fill port to prevent spills when pouring, and a small containment area under where the pump mounts to catch any small spills. Tanks let you mount your pump vertically with the head pointing down for protection against chemical leaks.

Choose from translucent tanks for indoor applications or opaque UV-resistant gray tanks for light-sensitive outdoor applications. All tanks include mounting screws and grommets. Mounting kit required for use with Econ series pumps (sold separately; stock # 17976).

Shipping: Additional shipping fees apply.

Materials of construction

Translucent: medium-density linear polyethylene (MDLPE)

Opaque gray: medium-density linear polyethylene (MDLPE) with UV inhibitors

C USA
THIS PUMP IS TESTED AND CERTIFIED BY WQA ACCORDING TO ANSI/NSF 61 FOR CONTACT WITH SODIUM HYPOCHLORITE AND WATER ONLY AND ANSI/NSF 372

Tanks suitable for use with:

Aluminum sulfate (alum), ammonium hydroxide, ammonium sulfate, 5% calcium hypochlorite, ferric sulfate, fluoride, 37% hydrochloric acid, magnesium hydroxide, potassium permanganate, sodium bisulfate, 15% sodium hypochlorite. **Call us with questions about compatibility with any chemicals not on this list!**

CAPACITY (GALLONS)	DIMENSIONS (DIA x H)	TRANSLUCENT STOCK #	TRANSLUCENT EACH	OPAQUE GRAY STOCK #	OPAQUE GRAY EACH
15	20.5" x 25.25"	70262	$	70263	$
30	20.5" x 37.5"	70278		70279	

Accessories

DESCRIPTION	STOCK #	EACH
ECON Series Mounting Kit	17976	$

See pages 102-169 for **Chemical Feed Pumps**.

12.5% Sodium Hypochlorite Solutions

Corporate Headquarters: Hasa Inc.
23119 Drayton Street
Saugus, California 91350
Telephone • 661.259.5848
Fax • 661.259.1538

PRODUCT SPECIFICATION	
Common Chemical Name	Bleach, Bleach Solution, Sodium Hypochlorite, Liquid Chlorinator
Hasa Brand Names	Sani-Clor, Hasa-Chlor, Multi-Chlor, 12.5% NaOCl
Empirical Chemical Formula	NaOCl
CAS Registry Number:	7681-52-9
Chemical Family	Inorganic Halogen Compound

Chemical Composition (percent by weight):	**Minimum**	**Maximum**
Sodium Hypochlorite	12.50	15.60
Sodium Chloride	9.84	12.30
Sodium Hydroxide	0.1	1.0
Sodium Carbonate	0.00	0.05
Inorganic Salts of Iron	0.02	0.03
Inorganic Salts of Copper	0.00	0.01
Other Inorganic Salts	0.00	0.01
Water	77.54	71.40

PHYSICAL AND CHEMICAL PROPERTIES			
Vapor Pressure:	12.1 mm Hg at 20°C (68°F)	**Flash Point:**	Not Applicable
Weight per Gallon	10.0 +/- 0.1 pounds	**pH:**	11.2 +/- 0.2
Density (liquid)	1.20 @ 20°C(68°F)	**Odor:**	Slight bleach
Density (solid)	Not Applicable	**Boiling Point:**	Decomposes
Melting Point	Not Applicable	**Freezing Point:**	-6.7°C (-20°F)
Physical State:	Liquid Solution	**Color:**	Straw Yellow
Solubility in Water:	Complete	**Stability:**	Stable

Certified to ANSI/NSF 60, *Drinking Water Treatment Additives Standard.* Maximum use level 84mg/L
UL No. MH25204 (Eloy, AZ) NSF Certificate Nos. OA681-01 (Pittsburg, CA), OA682-01 (Saugus, California), OA683-01 (Longview, WA)

(Rev. A 02/15/2005)
(Rev. B 04/24/2007)

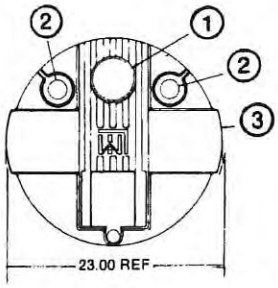
Information Sheet

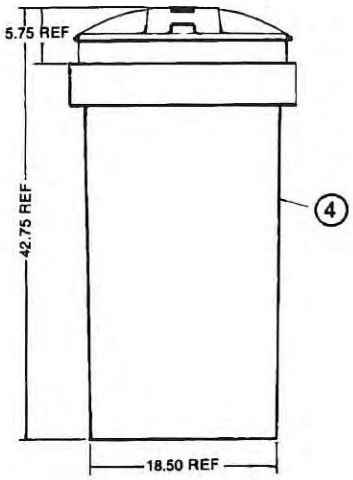
Polyethylene Tank and Cover Assembly and Accessories

MODEL NO. 26350
50 GALLON TANK ASSEMBLY

- Ultraviolet resistant, molded yellow polyethylene tank.
- High rigidity black polyethylene cover with molded recess for mounting of pump, agitator* and liquid level switch.
- 5 gallon (20 liter) graduations
- Self supporting, tapered sides.
- Suitable for most corrosive and noncorrosive solutions.
- Can be nested up to four (4) per carton for shipping economy.

Model No. 26350





COMPONENT PARTS

Ref No.	Part No.	Description	Qty
1	25985	Caplug Assembly Black Polyethylene	1
2	10346	Caplug Assembly Black Polyethylene	2
3*	26637	Cover, Black Polyethylene	1
4	25688	Tank, 50 Gallon Yellow Polyethylene	1

Shipping wt. 25 lbs (11.4 kg)

NOTES:

1. Full, flat bottom support required.
2. Maximum solution/ambient temperature 110° F (43° C)
3. Minimum solution/ambient temperature 0° F (-18°C)
4. Maximum weight limit for cover 50 lbs (23 kg)
5. Not suitable for use with concentrated organic solvents, oils and related materials.

Cover must be drilled at factory for agitator mounting. Please indicate your desire for this option when ordering.

LMI
LIQUID METRONICS DIVISION
MILTON ROY
A unit of Sundstrand Corporation

8 Post Office Square
Acton, MA 01720 USA
TEL: (978) 263-9800
FAX: (978) 264-9172
http://www.lmipumps.com

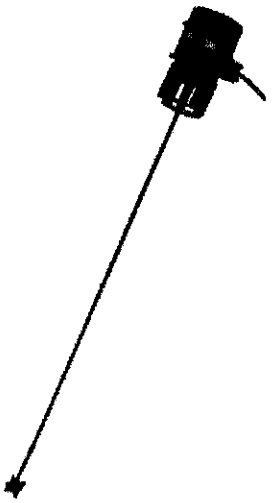
ISO9001

Replaces same of Rev. C 6/96
1057.D 3/97

AGITATORS WITH SUCTION TUBE SHIELD

115V Model	Shaft Length	Impeller	Motor
No. 10590	34" S.S. +	303 S.S.+	1600 RPM, 115 VAC, 50/60 Hz., 1.5 AMP. 175 WATTS, 1/20 H.P.
No. 10592	34" S.S. +	Neoprene**	
No. 27591	27" S.S. +	303 S.S.+	

220V Model	Shaft Length	Impeller	Motor
No. 25290	34" S.S.+	303 S.S.+	1600 RPM, 220-240 VAC, 50 Hz., .75 AMP.175 WATTS 1/20 H.P. DIN Plug
No. 25292	34" S.S.+	Neoprene**	
No. 34504	27" S.S.+	303 S.S.+	



+ ***Epoxy chemical resistant coating.***
** ***Has bronze hub for noncorrosive abrasive slurries only.***

LIQUID LEVEL SWITCH
MODEL NO. 26731

- Corrosion resistant housing of glass - fiber, reinforced polypropylene.
- Chemical resistant polypropylene float.
- Receptacles for connection to metering pump and low level signal device (alarm).
- Convenient mounting on an LMI 50 gallon tank with cover assembly.
- Electrical: Voltage 115 VAC, 50/60 Hz. Max Load: 3 Amps. Also available in 230 VAC, (Model No. 26732).

APPENDIX M

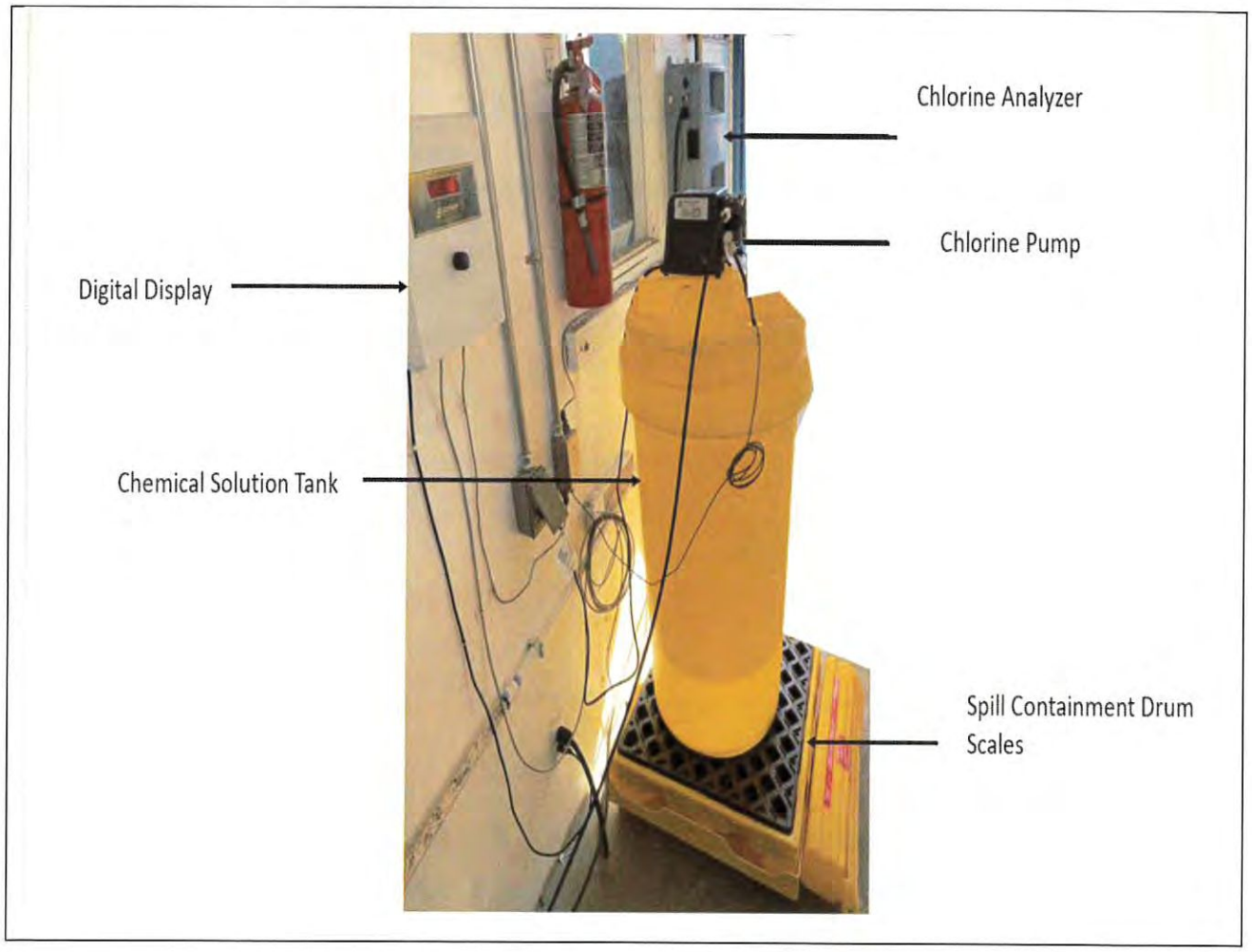
CONFIGURATIONS OF DISINFECTION FACILITIES AT WELLS 3 AND 5, AND CHLORINE DISINFECTION DATA SHEETS

A. SYSTEM DESCRIPTION

The liquid chlorine feed-systems of both well 3 and well 5 consist of:

1. A yellow 50-gallons solution tank (drum) that holds the liquid sodium hypochlorite.
2. Spill containment scales with bladder. Which provides a containment of up to 66 gallons in the event of a chemical spill and weighs the amount of chemical leftover in the drum.
3. Digital display: connected to the spill containment drum. It transfers the measured weight to Supervisory Control and Data Acquisition System (SCADA)
4. Digital Peristaltic Pump that pumps the liquid chlorine from inside the drum to tank inlet.
5. Chlorine Analyzer (HACH CL17) that continuously measures chlorine level.

FIGURE 1: SYSTEM DESCRIPTION



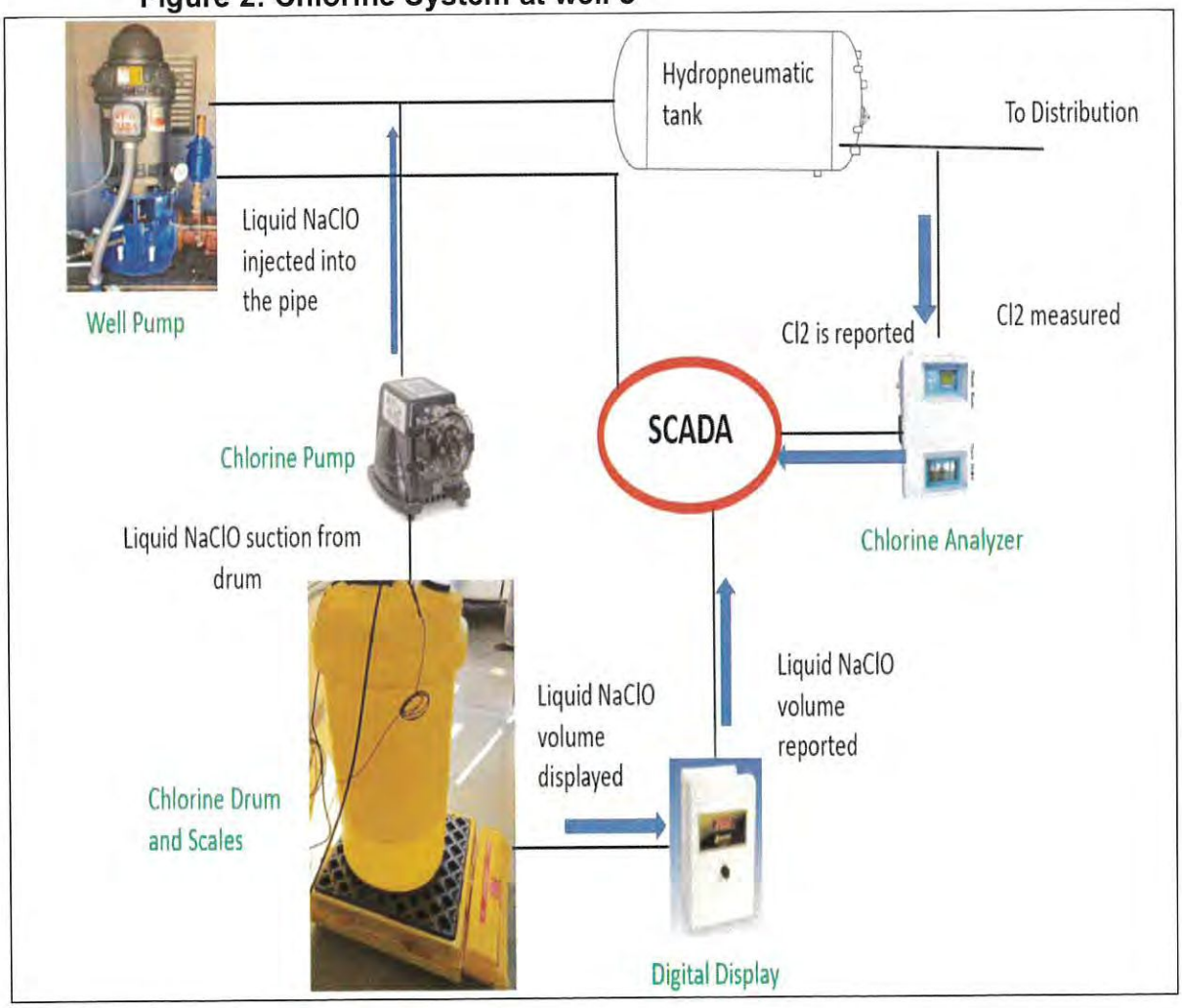
B. SYSTEM OPERATION:

Chlorine system at well 3 site:

When well 3 is online, the disinfectant pump draws the liquid sodium hypochlorite from the drum and pumps it to the injection point with a manually adjusted flow. The disinfectant and water are mixed inside of the 10,000 gallons Hydropneumatic tank. The chlorine concentration is measured continuously at the tank outlet with the chlorine analyzer. The residual level is then electronically reported to the SCADA system for real time monitoring.

Well 3 pump, Chlorine analyzer, and drum scale are connected to SCADA system.

Figure 2: Chlorine System at well 3

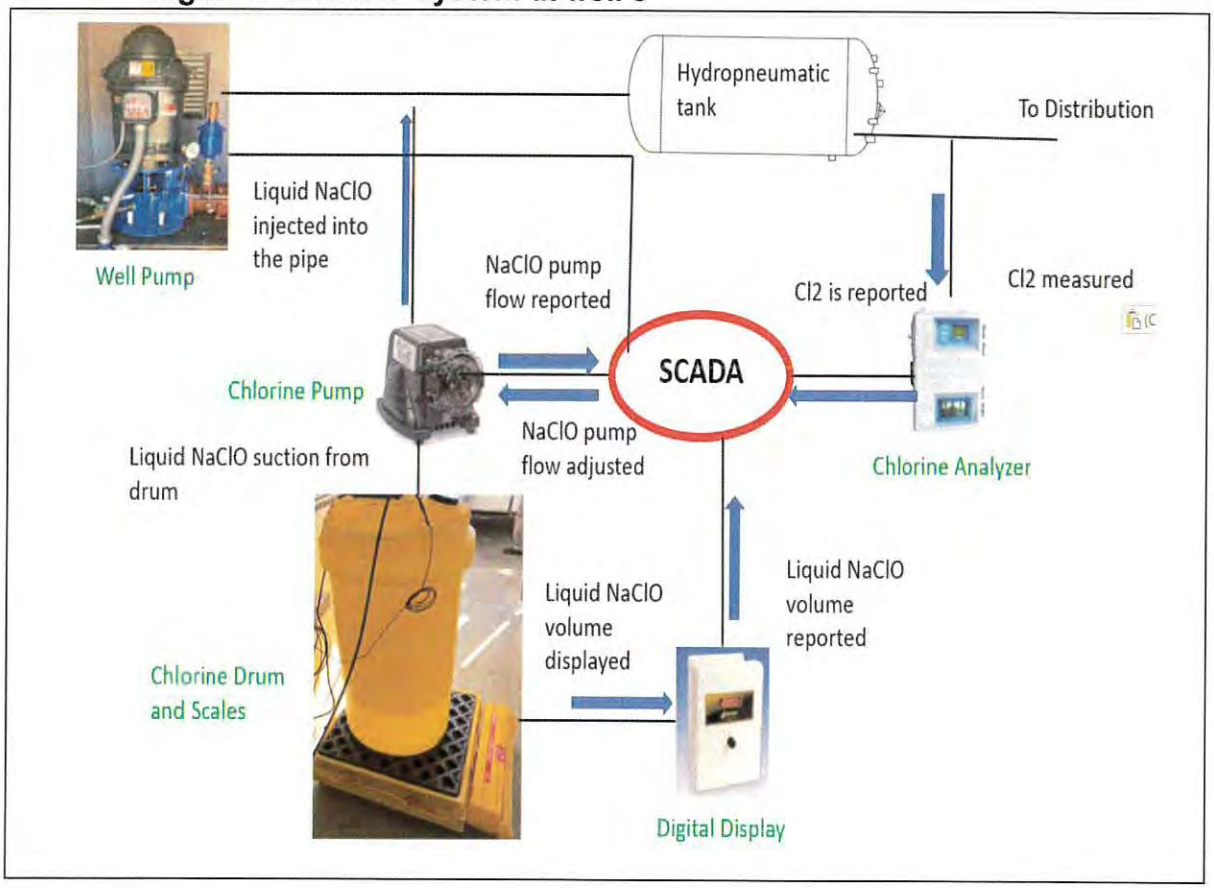


Chlorine system at well 5 site

The chlorine system at well 5 is operated in a similar manner as the chlorine system at well 3, with a difference that, the disinfectant pump flow is automatically adjusted through SCADA instead of the manual flow adjustment at well 3.

Since well 5 pump is equipped with a Variable Frequency Drive (VFD), the SCADA system is synchronizing the flow from well 5 with the flow of the disinfectant pump

Figure 3 Chlorine System at well 5



C. EQUIPMENTS OPERATION AND MANTENANCE

2.2 General product information

2.2.1 Instrument description

The Hach CL17 Chlorine Analyzer (Figure 1) is a microprocessor-controlled, process analyzer designed to monitor a sample stream continuously for chlorine content. Either free or total chlorine, in the range of 0 to 5 mg/L, can be monitored. The buffer and indicator solutions used determine the choice for free or total chlorine analysis.

CAUTION
This analyzer is intended to be used for aqueous samples only.

The CL17 Chlorine Analyzerenclosure is environmentally rated for IP62 per IEC 529. The enclosure is dust-tight, and drip-resistant but is not designed for outdoor use.

The instrument uses a DPD Colorimetric Method which includes a N,N-Diethyl-p-phenylenediamine (DPD) indicator and a buffer. The indicator and buffer are introduced into the sample, causing a red color to form with an intensity proportional to the chlorine concentration. Chlorine concentration, measured photometrically, is displayed on the front panel, three-digit, LCD readout in mg/L Cl_2.

A recorder output (4-20 mA) is available. Recorder span minimum and maximum values in mg/L Cl_2 are programmed by the operator at the analyzer keyboard.

Programmable alarm circuits provide relay closures, both normally open and normally closed, for two selectable chlorine level set points. Set points can be programmed by the operator anywhere within the overall range. System warning and system alarm features provide automatic, self-testing diagnostics that detect a number of possible malfunctions, and provide alarm relay closures indicating a need for operator attention.

The CL17 analyzer can be purchased with a Hach Network Interface Card which allows the CL17 to display its readings on an AquaTrend® display or allows data to be sent to a PC via a Serial Interface Module.

Indicator and buffer reagents (473 mL of each) are placed in the instrument case in the original factory-filled bottles. Reagents are replenished once a month.

The instrument is designed so electronic components are isolated from the hydraulic components. Windows allow the operator to observe the display indicators and reagent supply without opening the instrument enclosure.

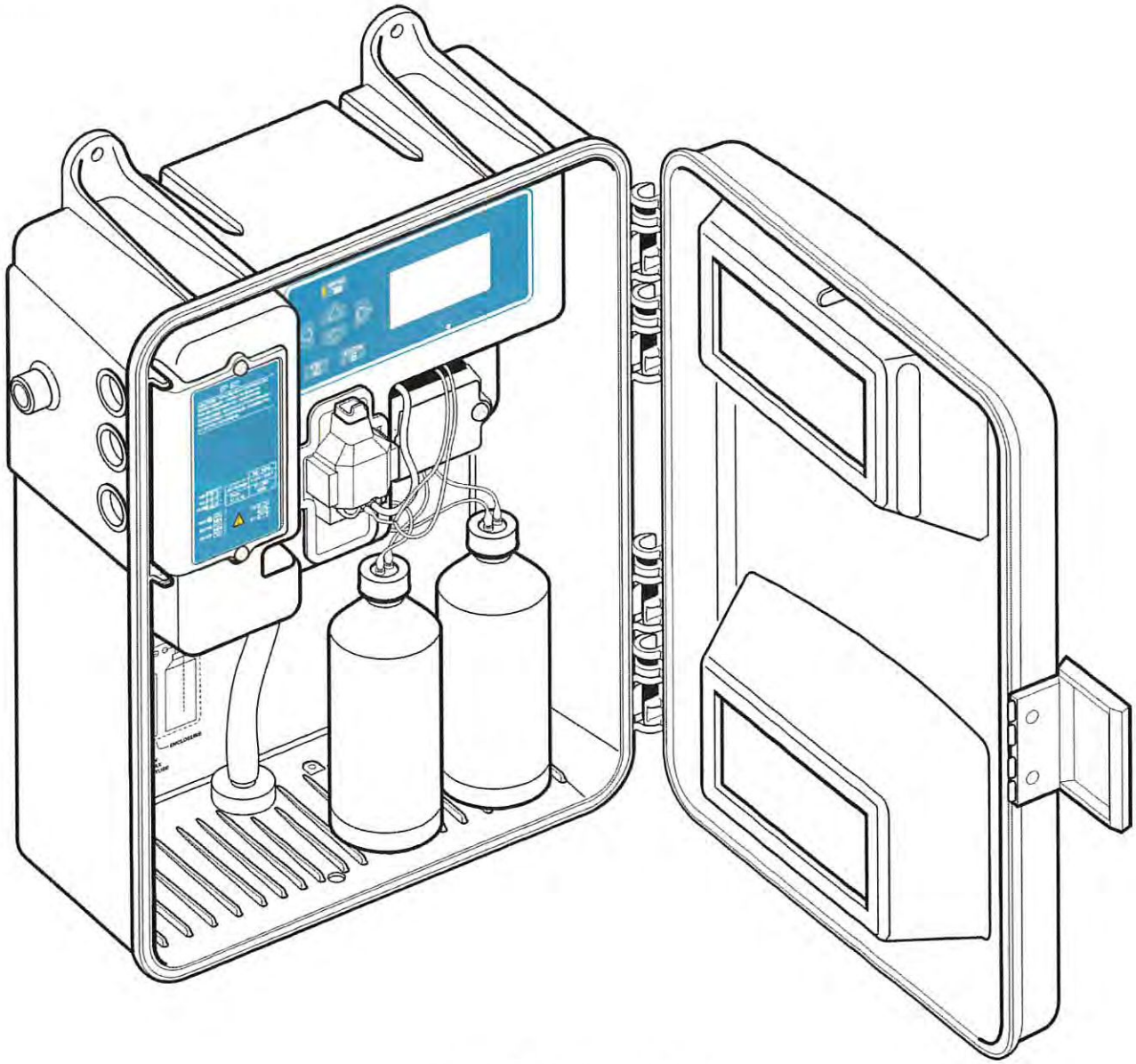


Figure 1 Chlorine analyzer

2.2.2 Method of analysis

Free available chlorine (hypochlorous acid and hypochlorite ions) oxidizes the DPD indicator reagent at a pH between 6.3 and 6.6 to form a magenta-colored compound. The depth or intensity of the resulting color is proportional to the concentration of chlorine in the sample. A buffer solution specifically for free chlorine maintains the proper pH.

Total available chlorine (free available chlorine plus combined chloramines) is determined by adding potassium iodide to the reaction. Chloramines in the sample oxidize iodide to iodine, which, along with any free available chlorine, oxidizes DPD indicator to form the magenta color at a pH of 5.1. A different buffer solution containing potassium iodide maintains reaction pH. After the chemical reaction is complete, the optical absorbance at 510 nm is compared to the absorbance measured through the sample before the reagents were added. Chlorine concentration is calculated from the difference in absorbance.

Section 1 Specifications

Specifications are subject to change without notice.

General	
Display	LCD, 3½-digit measurement readout and six-character alphanumeric scrolling text line.
Enclosure	IP62-rated with the gasketed door latched
Instrument description	34.3 cm (W) x 41.9 cm (H) x 19.1 (D) (13.5 x 16.5 x 7.5 in.)
Mounting	Wall mount
Instrument shipping weight	1.3 kg (25 lb)
Warranty	Hach Company warrants its products to the original purchaser against any defects that are due to faulty material or workmanship for a period of one year from the date of shipment unless otherwise noted in the product manual.
Sample Requirements	
Sample flow rate to sample conditioning	200 to 500 mL/min
Inlet pressure to instrument	**1 to 5 psig**; 1.5 psig is optimum. Exceeding 5 psig can cause sample tubing failure unless sample conditioning is used.
Inlet pressure to sampling conditioning	1.5 to 75 psig (with sample tube level with the bottom of the instrument—see Figure 7 on page 16.)
Sample temperature range	5 to 40 °C (41 to 104 °F)
Inlet fitting at instrument	¼-inch OD polyethylene tubing with quick-disconnect fitting
Drain fitting	½-inch hose barb
Sample conditioning	Use provided sample conditioning
Regent/Standard Requirements	
Maximum reagent usage	One-half liter per month (each of the two reagents)
Reagent containers	High-density polyethylene (2) ½-liter bottles
Reagent containment	Reagent bottles are contained inside the analyzer enclosure and are vented externally.
Electrical	
Power requirements	100–115/230 VAC (selection switch inside instrument); 95 VA, 50/60 Hz, 2.5 Amp fuse
Power connection	Connection made by three wire barrier terminal block through a ½-inch conduit hole in the case. Wire range: 12–18 AWG.
Installation category	II
Alarm relay outputs	Two unpowered SPDT relays each rated at 5 A resistive, 240 V ac maximum. Can function as sample set point alarms (high or low) or as a system warning indicator or a system alarm indicator. Use either high voltage (greater than 30 V RMS and 42.2 V PEAK or 60 V dc) or low voltage (less than 30 V RMS and 42.2 V PEAK or 60 V dc). Do not use a combination of high and low voltage.
Alarm connection	Connection made by a removable three wire plug through a ½-inch conduit hole in the case. Wire range: 12–18 AWG.
Recorder output	One isolated recorder output, 4–20 mA (can be adjusted to 0–20 mA). Recommended load impedance 3.6 to 500 ohms
Recorder output connections	Connection made by a removable three wire plug through a ½-inch conduit hole in the case. Wire range: 12–22 AWG.
Optical	
Light source	Class 1 LED (light emitting diode) with a peak wavelength of 520 nm; 50,000 hours estimated minimum life

Specifications

Performance	
Operating range	0–5 mg/L free or residual chlorine
Accuracy	±5% or ±0.035 ppm whichever is greater
Precision	±5% or ±0.01 ppm whichever is greater
Quantitation limit	0.035 ppm
Cycle time	2.5 minutes
Detection limit	0.02 ppm
Calibration	Uses default calibration curve
Power switch	User accessible power switch is required
Recorder	One 4-20 mA/0–20 mA
Alarm relay outputs	Two SPDT relays, 5A resistive load at 240 V ac. Can function as sample set point alarms (high or low) or as a system warning indicator or a system alarm indicator.
Optional external outputs	Hach AquaTrend® Network Interface
Environmental	
Storage temperature range	-40 to 60 °C (-40 to 140 °F)
Operating temperature range	5 to 40 °C (41 to 104 °F)
Humidity	90% at 40 °C (90% at 104 °F)
Air purge (optional)	0.1 CFM instrument quality air at 20 psig maximum, ¼-inch OD tubing

Section 2 General information

The information in this manual has been carefully checked and is believed to be accurate. However, the manufacturer assumes no responsibility for any inaccuracies that may be contained in this manual. In no event will the manufacturer be liable for direct, indirect, special, incidental or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. In the interest of continued product development, the manufacturer reserves the right to make improvements in this manual and the products it describes at any time, without notice or obligation.

Revised editions are found on the manufacturer's website.

2.1 Safety information

Please read this entire manual before unpacking, setting up or operating this equipment. Pay attention to all danger, warning and caution statements. Failure to do so could result in serious injury to the operator or damage to the equipment.

Make sure that the protection provided by this equipment is not impaired, do not use or install this equipment in any manner other than that specified in this manual.

2.1.1 Use of hazard information

DANGER
Indicates a potentially or imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING
Indicates a potentially or imminently hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION
Indicates a potentially hazardous situation that may result in minor or moderate injury.

Notice: *Indicates a situation that is not related to personal injury.*

Important Note: *Indicates a situation which, if not avoided, may cause damage to the instrument. Information that requires special emphasis.*

Note: *Information that supplements points in the main text.*

2.1.2 Precautionary labels

Read all labels and tags attached to the instrument. Personal injury or damage to the instrument could occur if not observed.

	Electrical equipment marked with this symbol may not be disposed of in European public disposal systems after 12 August of 2005. In conformity with European local and national regulations (EU Directive 2002/96/EC), European electrical equipment users must now return old or end-of life equipment to the Producer for disposal at no charge to the user. ***Note:*** *For return for recycling, please contact the equipment producer or supplier for instructions on how to return end-of-life equipment, producer-supplied electrical accessories, and all auxiliary items for proper disposal.*
	This is the safety alert symbol. Obey all safety messages that follow this symbol to avoid potential injury. If on the instrument, refer to the instruction manual for operation or safety information.
	This symbol indicates the need for protective eye wear.

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

DIVISION OF DRINKING WATER

CHLORINE DISINFECTION DATA

System Name: Sativa Water System **No:** CA1910147
Source of Information: LACWD Field Staff
Collected By: Hatem Ben Miled **Date:** 09/29/2020

Location:	Well site 3 (1910147-002)
Type of Disinfectant Used:	Liquid 12.5% Sodium hypochlorite (NaOCl)
Application:	Raw
Water Treated: (raw, filtered, etc.)	
Oxidant Demand Character:	0.32mg/l
Point of Application:	Inlet main into Hydropneumatic tank
Mixing:	Yes, hydro tank
Contact Time: (minutes)	15 minutes
Minimum Contact Time Before Residual Test:	2 minutes
How was Contact Time Measured or Determined:	Tank size over well flow
Water Flow Variation:	248 GPM (Minimum)
Average Daily:	424 GPM
Maximum Daily:	424 GPM
Peak Hourly Flow:	25440 Gallons
Machine:	
Make:	Stenner
Type:	SVP Series Digital Peristaltic Pump
Capacity:	17GPD
Condition:	New
Housing: (type)	N/A
Insulation:	N/A
Heating:	N/A
Chemical Added: **% Available Disinfectant, Form**	Liquid 12.5% Sodium hypochlorite (NaOCl)
Cylinder or Crock Capacity: (Drum/Tank)	50 gallons
Stock on Hand:	50 gallons
Safety Features: (Locks, Lighting, Ventilation, Alarms, Etc)	Secondary containment up to 66 gallons
Operation and Maintenance: **Spare Parts on Hand:**	Spare chlorine pump and injectors
Ability to Make Repairs:	Yes
Equipment Inspection Frequency:	Weekly
Residual Tests:	
Test Made: (DPD, etc.)	DPD
Type of Instrumentation:	Hach Chlorine Analyzer CL17
Continuous/Grab:	Continues
Where Test Made:	Hydropneumatic tank outlet
Type: (Total, Free, Combined, Other)	Free
Records:	SCADA
Frequency of Equipment Calibration:	Weekly
Reliability Features:	
Auxiliary Power:	None
Automatic Switch-over:	N/A
Condition of Scales: (if any)	New
Alarms: (if any)	SCADA and digital display
Defects or Remarks:	None

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

DIVISION OF DRINKING WATER

CHLORINE DISINFECTION DATA

System Name: Sativa Water System **No:** CA1910147
Source of Information: LACWD Field Staff
Collected By: Hatem Ben Miled **Date:** 09/29/2020

Location:	Well Site 5 (1910147-005)
Type of Disinfectant Used:	Liquid 12.5% Sodium hypochlorite (NaOCl)
Application:	Raw
Water Treated: (raw, filtered, etc.)	
Oxidant Demand Character:	0.32mg/l
Point of Application:	Inlet main into Hydropneumatic tank
Mixing:	Yes, hydro tank
Contact Time: (minutes)	15 minutes
Minimum Contact Time Before Residual Test:	2 minutes
How was Contact Time Measured or Determined:	Tank size over well flow
Water Flow Variation:	
Average Daily:	650 GPM
Maximum Daily:	650 GPM
Peak Hourly Flow:	41,930 Gallons
Machine:	
Make:	Stenner
Type:	SVP Series Digital Peristaltic Pump
Capacity:	17GPD
Condition:	New
Housing: (type)	N/A
Insulation:	N/A
Heating:	N/A
Chemical Added: **% Available Disinfectant, Form**	Liquid 12.5% Sodium hypochlorite (NaOCl)
Cylinder or Crock Capacity: (Drum/Tank)	50 gallons
Stock on Hand:	50 gallons
Safety Features: (Locks, Lighting, Ventilation, Alarms, Etc)	Secondary containment up to 66 gallons
Operation and Maintenance: **Spare Parts on Hand:**	Spare chlorine pump and injectors
Ability to Make Repairs:	Yes
Equipment Inspection Frequency:	Weekly
Residual Tests:	
Test Made: (DPD, etc.)	DPD
Type of Instrumentation:	Hach Chlorine Analyzer CL17
Continuous/Grab:	Continues
Where Test Made:	Hydropneumatic tank outlet
Type: (Total, Free, Combined, Other)	Free
Records:	SCADA
Frequency of Equipment Calibration:	Weekly
Reliability Features:	
Auxiliary Power:	None
Automatic Switch-over:	N/A
Condition of Scales: (if any)	New
Alarms: (if any)	SCADA and digital display
Defects or Remarks:	None

APPENDIX N

HASA, INC. NSF/ANSI STANDARD 60 CERTIFICATION FOR S 12.5 PERCENT SODIUM HYPOCHLORITE SOLUTION

12.5% Sodium Hypochlorite Solutions

Corporate Headquarters: Hasa Inc.
23119 Drayton Street
Saugus, California 91350
Telephone • 661.259.5848
Fax • 661.259.1538

PRODUCT SPECIFICATION	
Common Chemical Name	Bleach, Bleach Solution, Sodium Hypochlorite, Liquid Chlorinator
Hasa Brand Names	Sani-Clor, Hasa-Chlor, Multi-Chlor, 12.5% NaOCl
Empirical Chemical Formula	NaOCl
CAS Registry Number:	7681-52-9
Chemical Family	Inorganic Halogen Compound

Chemical Composition (percent by weight):	**Minimum**	**Maximum**
Sodium Hypochlorite	12.50	15.60
Sodium Chloride	9.84	12.30
Sodium Hydroxide	0.1	1.0
Sodium Carbonate	0.00	0.05
Inorganic Salts of Iron	0.02	0.03
Inorganic Salts of Copper	0.00	0.01
Other Inorganic Salts	0.00	0.01
Water	77.54	71.40

PHYSICAL AND CHEMICAL PROPERTIES			
Vapor Pressure:	12.1 mm Hg at 20°C (68°F)	**Flash Point:**	Not Applicable
Weight per Gallon	10.0 +/- 0.1 pounds	**pH:**	11.2 +/- 0.2
Density (liquid)	1.20 @ 20°C(68°F)	**Odor:**	Slight bleach
Density (solid)	Not Applicable	**Boiling Point:**	Decomposes
Melting Point	Not Applicable	**Freezing Point:**	-6.7°C (-20°F)
Physical State:	Liquid Solution	**Color:**	Straw Yellow
Solubility in Water:	Complete	**Stability:**	Stable

Certified to ANSI/NSF 60, *Drinking Water Treatment Additives Standard.* Maximum use level 84mg/L
UL No. MH25204 (Eloy, AZ) NSF Certificate Nos. OA681-01 (Pittsburg, CA), OA682-01 (Saugus, California), OA683-01 (Longview, WA)

(Rev. A 02/15/2005)
(Rev. B 04/24/2007)

The Public Health and Safety Organization

NSF Product and Service Listings

These NSF Official Listings are current as of **Thursday, December 17, 2020** at 12:15 a.m. Eastern Time. Please contact NSF to confirm the status of any Listing, report errors, or make suggestions.

Alert: NSF is concerned about fraudulent downloading and manipulation of website text. Always confirm this information by clicking on the below link for the most accurate information: http://info.nsf.org/Certified/PwsChemicals/Listings.asp?Company=0A680&Standard=060&

NSF/ANSI/CAN 60
Drinking Water Treatment Chemicals - Health Effects

Hasa Inc.
23119 Drayton Street
Saugus, CA 91350
United States
925-432-3866
Visit this company's website (http://www.hasapool.com)

Facility : Eloy, AZ

Sodium Hypochlorite[CL]

Trade Designation	*Product Function*	*Max Use*
Multi-Chlor	Disinfection & Oxidation	84mg/L

[CL] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations.

Facility : Pittsburg, CA

Sodium Hypochlorite[CL]

Trade Designation	*Product Function*	*Max Use*
12.5% Sodium Hypochlorite Solution	Disinfection & Oxidation	84mg/L
FRESHCHLOR	Disinfection & Oxidation	84 mg/L
HASACHLOR	Disinfection & Oxidation	84 mg/L
Hasa Bleach 5.25%	Disinfection & Oxidation	200mg/L
Hasa Sani-clor	Disinfection & Oxidation	84mg/L

MULTI-CHLOR	Disinfection & Oxidation	84 mg/L

[CL] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations.

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Pomona, CA

Sodium Hypochlorite[CL]

Trade Designation	*Product Function*	*Max Use*
Classic Bleach	Bactericide Disinfection & Oxidation	175mg/L
HASA BLEACH 5.25%	Bactericide Disinfection & Oxidation	200mg/L
Multi-Chlor	Bactericide Disinfection & Oxidation	84mg/L

[CL] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations.

Facility : Saugus, CA

Sodium Hypochlorite[CL]

Trade Designation	*Product Function*	*Max Use*
12.5% Sodium Hypochlorite Solution	Disinfection & Oxidation	84mg/L
FRESHCHLOR	Disinfection & Oxidation	84mg/L
HASACHLOR	Disinfection & Oxidation	84mg/L
Hasa Bleach 5.25%	Disinfection & Oxidation	200mg/L
MULTI-CHLOR	Disinfection & Oxidation	84mg/L

[CL] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations.

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Spring Valley, CA

Sodium Hypochlorite[CL]

Trade Designation	*Product Function*	*Max Use*
Multi-chlor	Disinfection & Oxidation	84mg/L

[CL] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations.

Facility : Bryan, TX

Sodium Hypochlorite[CL]

Trade Designation	*Product Function*	*Max Use*
HASACHLOR	Disinfection & Oxidation	84mg/L
MULTI-CHLOR	Disinfection & Oxidation	84mg/L

[CL] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations.

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Longview, WA

Sodium Hypochlorite[CL]

Trade Designation	*Product Function*	*Max Use*
12.5% Sodium Hypochlorite Solution	Disinfection & Oxidation	84mg/L
FRESHCHLOR	Disinfection & Oxidation	84mg/L
HASACHLOR	Disinfection & Oxidation	84mg/L
Hasa Bleach 5.25%	Disinfection & Oxidation	200mg/L
MULTI-CHLOR	Disinfection & Oxidation	84mg/L

[CL] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations.

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Number of matching Manufacturers is 1

Number of matching Products is 23

Processing time was 0 seconds

APPENDIX O

TANK DATA SHEET

State of California

State Water Resources Control Board
Division of Drinking Water

Hydropneumatic Tank

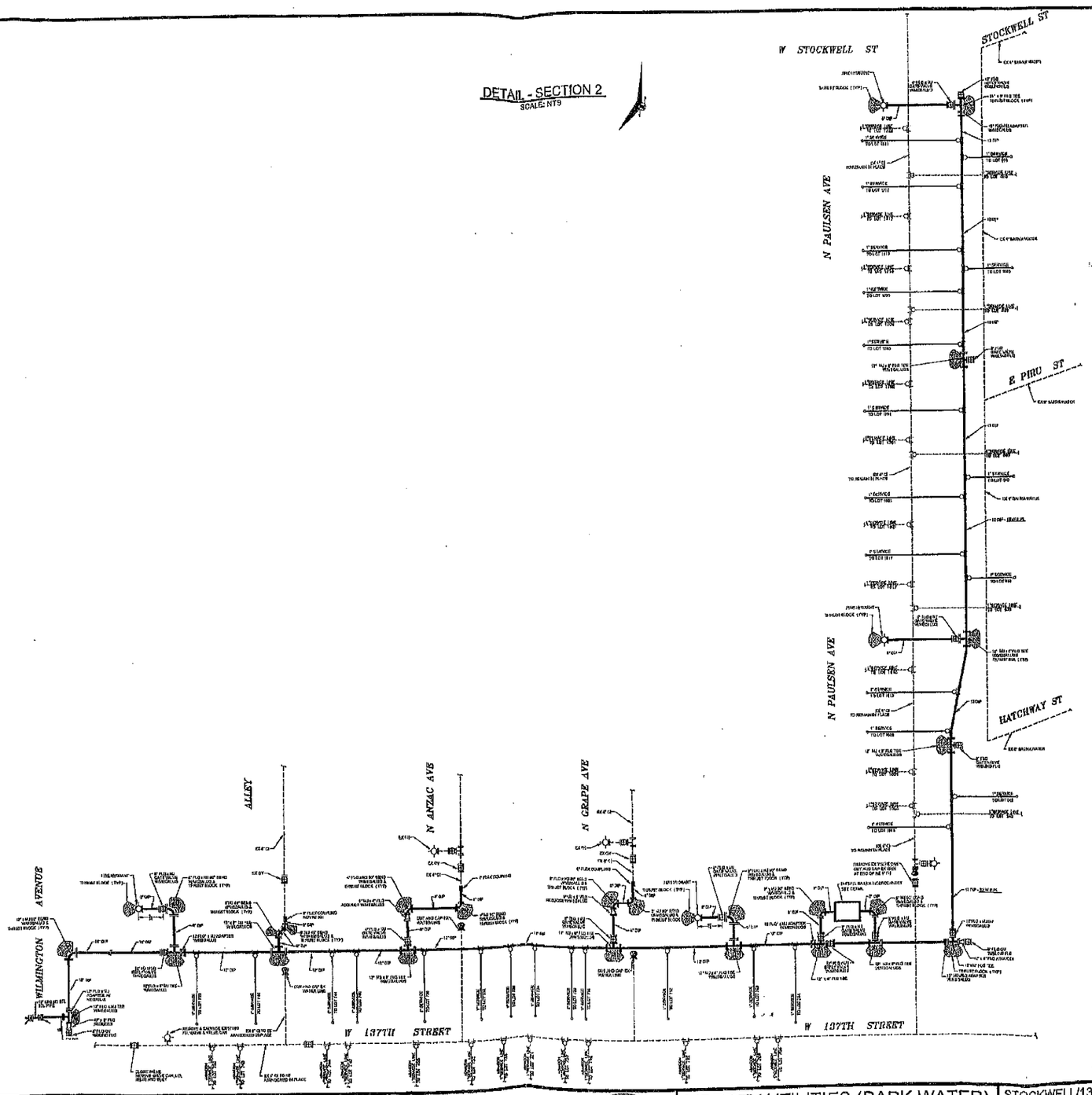
(Use For All Distribution Storage, Chlorine Contact Tanks, Etc)

System Name:	Sativa Water System	
System Number:	1910147	
Source of Information:	DDW Files, Field Inspection and Los Angeles County DPW Staff	
Collected By:	Ofelia Oracion	Date: December 3, 2019
Reservoir Number Or Name:		
Location	Wells 3 and 5	
Cross Streets:	Various locations	
Neighborhood:	Residential	
Size Of Lot:	Various sizes	
Fencing:	Wrought iron fences	
Construction		
Date Constructed/Refurbished:	1952	
Purpose (Storage, Chlorine Contact, Etc.):	Chlorine Contact and Pressure	
Design Capacity (MG):	Not Applicable	
Operating Capacity (MG):	Not Applicable	
Construction Type:	Pressure Tank	
Shape:	Cylindrical	
Construction Materials:	Steel	
Sides:	Steel	
Floor:	Steel	
Cover Or Roof:	Steel Roof	
Interior Coating Type:	Unknown	
Dimensions		
Dimensions (H x L x W) Or (H & Diameter)(feet):	88 inches diamater	
Tank Bottom Elevation (feet):	Not Applicable	
Height Of Tank (feet):	Not Applicable	
Surface Drainage To Reservoir Possible?	Not Applicable	
Ventilation		
Screened (Y/N):	Not Applicable	
Cathodic Protection:	Not Applicable	
Inlet Description		
Distance Above Bottom (feet):	Not Applicable	
Receives Water From:	Wells	
Outlet Description		
Distance From Inlet (feet):	Not Applicable	
Distance Above Bottom (feet):	Not Applicable	
Delivers Water To:	Distribution System	
Pressure Zone Served:	Single Pressure Zone	
Drain Location		
Distance Above Floor (feet):	At Bottom	
Discharge Location:	Ground Surface	
Overflow Location		
Overflow Elevation (feet):	Not Applicable	
Distance Above Bottom (feet):	Not Applicable	
Discharge Location:	Not Applicable	
If Hydropneumatic Tank		
Capacity (gal):	10000 gallons	
Site Glass:	Yes	
Air Vent:	Yes	
Pressure Gage:	Yes	
Comments		
Date of last inspection:	May 2011	
Date of last cleaning	May 2011	
Date Re-lined or Coated	July 2011	Site 3 only

APPENDIX P

LIBERTY UTILITIES' 12-INCH TRANSMISSION MAINS ALONG NORTH PAULSEN AVENUE

DETAIL - SECTION 2
SCALE: NTS



REV	DATE	BY	DESCRIPTION

WARNING
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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

DESIGNED
DRAWN
CHECKED
SCALE NO SCALE

Liberty Utilities

JAMES P. ELLIOTT DATE
SENIOR MANAGER, ENGINEERING

REGISTERED PROFESSIONAL ENGINEER JAMES PAUL ELLIOTT No. 18536 Exp. 12/31/13 STATE OF CALIFORNIA

LIBERTY UTILITIES (PARK WATER)
9750 WASHBURN RD, DOWNEY, CA 90241

APPROVED:	APPROVED:
SENIOR MANAGER, ENGINEERING DATE	PRESIDENT, CALIFORNIA DATE

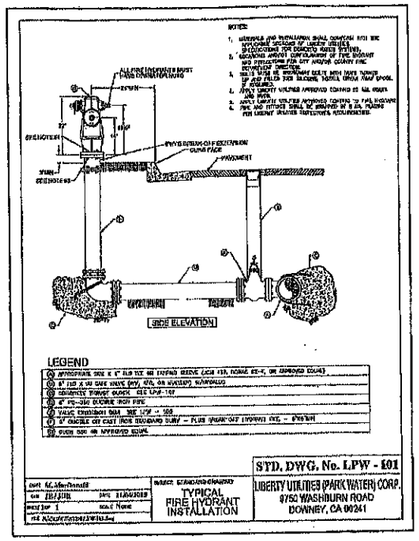
STOCKWELL/136TH/137TH/WILMINGTON (PHASE 1)
12" WATER MAIN INSTALLATION
CITY OF COMPTON

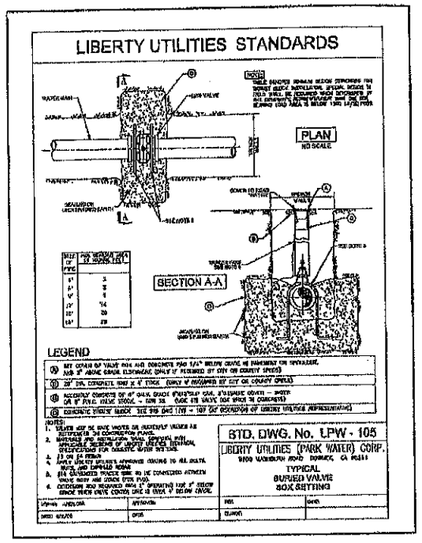
DETAIL - PAULSEN AVE

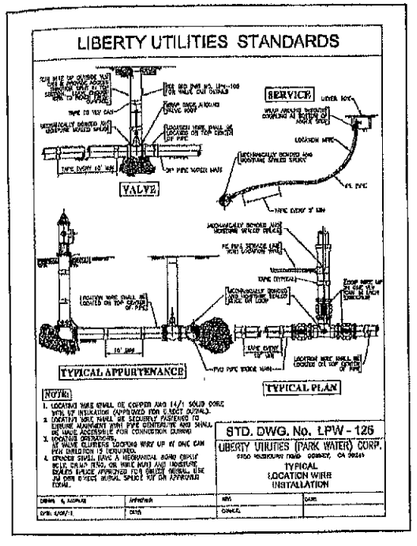
SHEET
W-6
SHEET 9 OF 9
PROJECT # 11103010

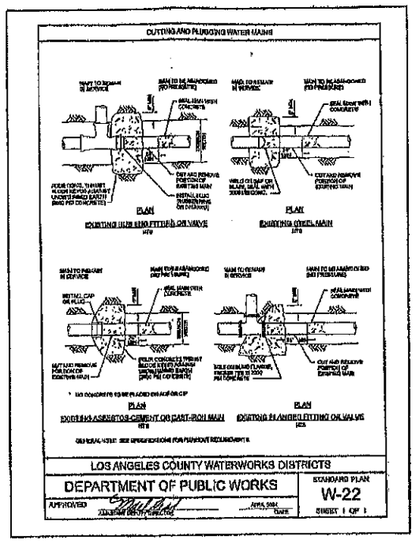
SATIVA WATER MAIN EXTENSION - SECTION 3

STANDARD DRAWINGS DETAIL:









ESTIMATE OF QUANTITIES:
SECTION 3

NO.	QUANTITY	DESCRIPTION
1	45 LF	12" PC350 Ductile Iron Pipe w/ polyethylene wrap and Locating Wire Per Std Dwg No. LPW-129
2	945 LF	8" PC350 Ductile Iron Pipe w/ polyethylene wrap and Locating Wire Per Std Dwg No. LPW-125
3	15 LF	4" PC350 Ductile Iron Pipe w/ polyethylene wrap and Locating Wire Per Std Dwg No. LPW-126
4	9 EA	8" Gate Valve Per Std Dwg No. LPW-105
5	4 EA	6" Fire Hydrant Assembly Per Std Dwg No. LPW-101
6	12 EA	Tie Into Existing Sativa Pipeline
7	6 EA	Cut and Plug Existing Sativa Pipeline to be Abandoned
8	1 EA	Remove ex. Sativa Fire Hydrant
9	1015 LF	Export Native and Import Suitable Fill

REV	DATE	BY	DESCRIPTION

WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

DESIGNED
DRAWN JDR
CHECKED
SCALE NO SCALE

Liberty Utilities

JAMES P. ELLIOTT DATE
SENIOR MANAGER, ENGINEERING

REGISTERED PROFESSIONAL ENGINEER JAMES PAUL ELLIOTT No. 43668 Exp. 10/31/16 STATE OF CALIFORNIA CIVIL

LIBERTY UTILITIES (PARK WATER)
9750 WASHBURN RD, DOWNEY, CA 90241

APPROVED: APPROVED:
SENIOR MANAGER, ENGINEERING DATE PRESIDENT, CALIFORNIA DATE

SATIVA MAIN EXTENSION, SECTION 3
CITY OF COMPTON

DETAIL - PAULSEN AVE

SHEET W-2
SHEET 2 OF 3
PROJECT # 1118CP01

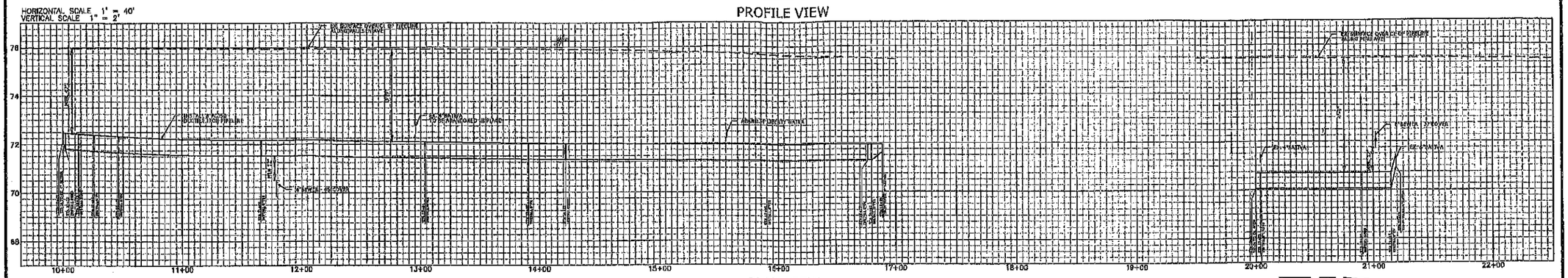
APPENDIX Q

SATIVA WATER SYSTEM'S 8-INCH WATER MAINS ALONG NORTH PAULSEN AVENUE

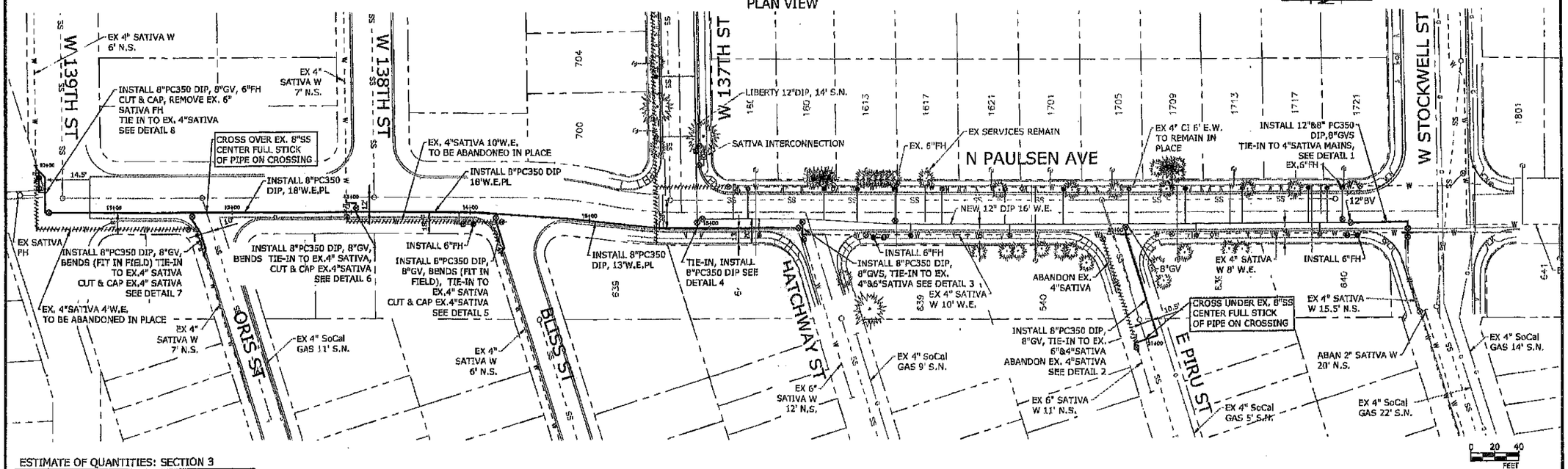
SATIVA WATER MAIN EXTENSION - SECTION 3

HORIZONTAL SCALE 1" = 40'
VERTICAL SCALE 1" = 2'

PROFILE VIEW



PLAN VIEW



ESTIMATE OF QUANTITIES: SECTION 3

NO.	QUANTITY	DESCRIPTION
1	45 LF	12" PC350 Ductile iron rips w/ polyethylene wrap and Locating Wire Per Std Dwg No. LPW-105
2	945 LF	8" PC350 Ductile Iron Pipe w/ polyethylene wrap and Locating Wire Per Std Dwg No. LPW-105
3	35 LF	4" PC350 Ductile Iron Pipe w/ polyethylene wrap and Locating Wire Per Std Dwg No. LPW-105
4	5 EA	8" Gate Valve Per Std Dwg No. LPW-106
5	4 EA	6" Fire Hydrant Assembly Per Std Dwg No. LPW-301
6	32 EA	Tie Into Existing Sativa Pipeline
7	6 EA	Cut and Plug Existing Sativa Pipeline to be Abandoned
8	1 EA	Remove ex. Sativa Fire Hydrant
9	1015 LF	Export Native and Import Suitable Fill

ABANDONMENT NOTE:
ALL VALVE BOXES AND CAPS SHALL RE REMOVED INCLUDING FIRE HYDRANT VALVE BOXES AND CAPS. THE VALVE BOX TOP SLEEVE AND BOTTOM SLEEVE SHALL BE FILLED WITH TYPE "A" BASE (OR AS REQUIRED BY THE PERMIT.) IF THE VOID IS WITHIN THE PAVED STREET AREA THE VOID SHALL BE COMPACTED AND RESURFACED WITH AC PAVEMENT.

REV	DATE	BY	DESCRIPTION

WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

DESIGNED
DRAWN JDR
CHECKED
SCALE NO SCALE

Liberty Utilities

JAMES P. ELLIOTT DATE
SENIOR MANAGER, ENGINEERING

REGISTERED PROFESSIONAL ENGINEER JAMES PAUL ELLIOTT No. 45482 Exp. 6/30/20 CIVIL STATE OF CALIFORNIA

LIBERTY UTILITIES (PARK WATER)
9750 WASHBURN RD, DOWNEY, CA 90241

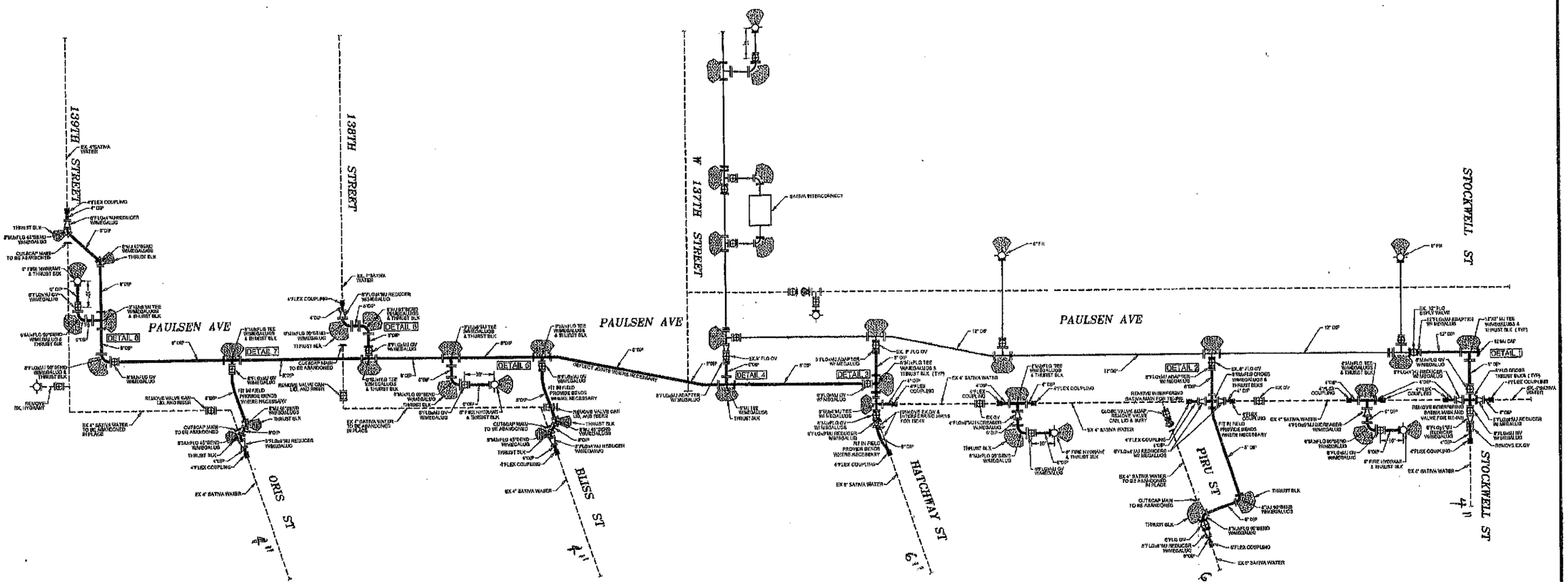
APPROVED: SENIOR MANAGER, ENGINEERING DATE
APPROVED: PRESIDENT, CALIFORNIA DATE

SATIVA MAIN EXTENSION, SECTION 3
CITY OF COMPTON

PLAN & PROFILE - PAULSEN AVE

SHEET W-1
SHEET 1 OF 3
PROJECT # 1118CP01

DETAIL - SECTION 3
SCALE: NTS



REV	DATE	BY	DESCRIPTION

WARNING
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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

DESIGNED
DRAWN JDR
CHECKED
SCALE NO SCALE

Liberty Utilities

JAMES P. ELLIOTT DATE
SENIOR MANAGER, ENGINEERING

REGISTERED PROFESSIONAL ENGINEER JAMES PAUL ELLIOTT No. C 68556 Ex. 12/31/20 CIVIL STATE OF CALIFORNIA

LIBERTY UTILITIES (PARK WATER)
9750 WASHBURN RD, DOWNEY, CA 90241

APPROVED:	APPROVED:
SENIOR MANAGER, ENGINEERING DATE	PRESIDENT, CALIFORNIA DATE

STOCKWELL/136TH/137TH/WILMINGTON (PHASE 1)
12" WATER MAIN INSTALLATION
CITY OF COMPTON

DETAIL (SATIVA) - PAULSEN AVE

SHEET
W-7
SHEET 10 OF 10
PROJECT # 11183010

J:\Engineering\CAD\PLANS\2018\11183010 Stockwell Phase 1\11183010 - 12WA Paulsen Detail Sheet.dwg

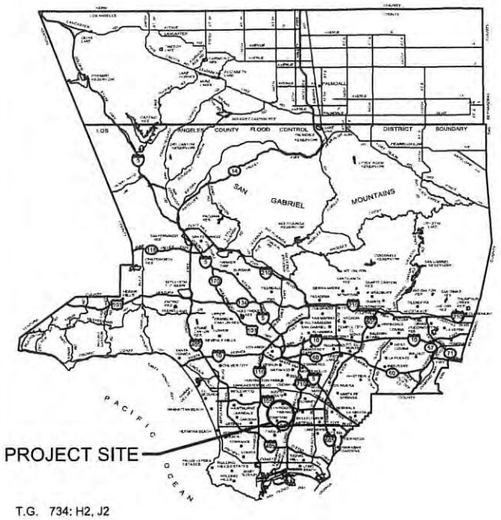
APPENDIX R

SATIVA WATER SYSTEM'S
8-INCH WATER MAINS ALONG LUCIEN STREET

SATIVA LOS ANGELES COUNTY WATER DISTRICT

SATIVA - LUCIEN WATERLINE

PROJECT ID NO. DES0003233



T.G. 734: H2, J2

LOCATION MAP
NOT TO SCALE

STATISTICS	
LENGTH OF 8" PVC WATERMAIN	1,011 ft
LENGTH OF 8" STEEL WATERMAIN	170 ft
WORKING WATER PRESSURE	70 PSI

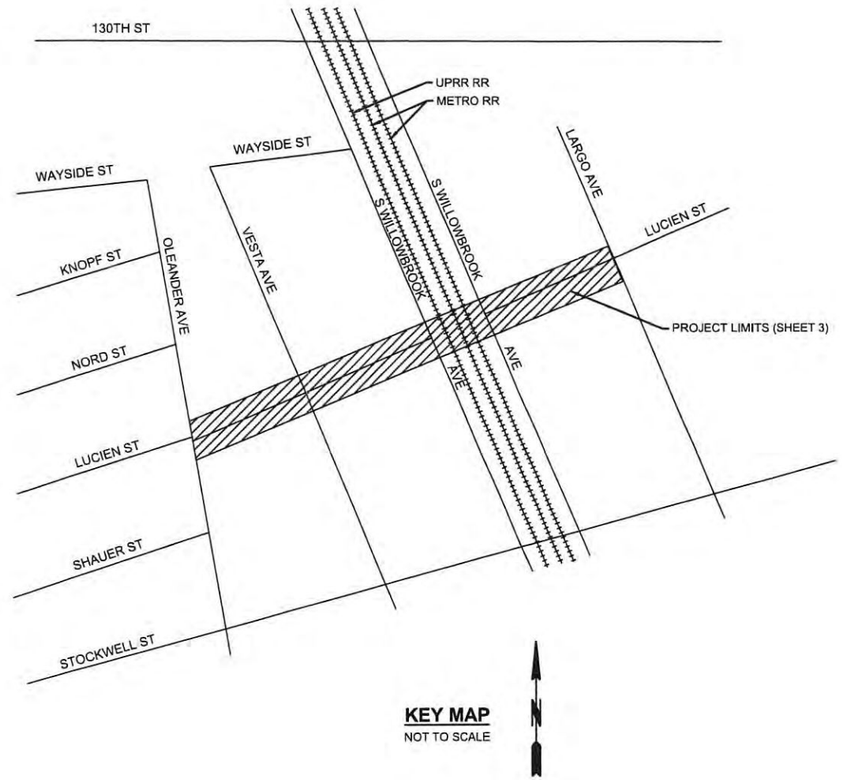
REFERENCES

WATERMAIN SPECIFICATIONS
SATIVA LA COUNTY WATER DISTRICT SYSTEM MAP, 1960
SATIVA LA COUNTY WATER DISTRICT WATER LINE IMPROVEMENTS, 1972

SHEET INDEX

LEGEND

PROPOSED WATER MAIN	
EXISTING WATER MAIN	W — W
EXISTING SEWER	S — S
EXISTING GAS LINE	g — g
EXISTING TELEPHONE LINE	tc — tc
EXISTING ELECTRICAL UNDERGROUND	e — e
STREET CENTER LINE	℄
RIGHT OF WAY LINE	
PROPERTY LINE	
EDGE OF PAVEMENT	
EXISTING CHAIN LINK FENCE	
GATE VALVE	
TEE, FLANGED	
SERVICE CONNECTION	
FIRE HYDRANT 6" x 4" x 2 1/2"	
FLUSH OUT ASSEMBLY	



KEY MAP
NOT TO SCALE

CADD PROJECT FILE NAME: DES0003233_Sativa_Lucien_Waterline.dgn
CHECKER: R. GINDI
DESIGNER: C. CHEN
DRAFTER: R. ORTIZ

811 Know what's below. Call before you dig.

APPROVED BY MARK PESTRELLA, DIRECTOR OF PUBLIC WORKS
DEPUTY DIRECTOR — DATE 11/13/2019

RECOMMENDED BY:
ASSISTANT DEPUTY DIRECTOR — DATE 11/13/2019

SUBMITTED BY:
DESIGN TEAM 1 — DATE 11/19/2019

DATE	MARK	DESCRIPTION
7/14/20	■	AS-BUILT REVISIONS

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — CHARLES CHEN — C 63209 — CIVIL — STATE OF CALIFORNIA
PROJECT ENGINEER — DATE 11/19/2019

SATIVA LOS ANGELES COUNTY WATER DISTRICT

SATIVA - LUCIEN WATERLINE

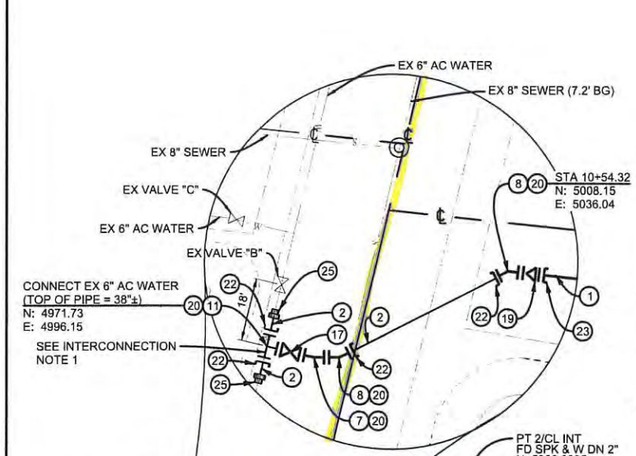
PROJECT ID NO. DES0003233

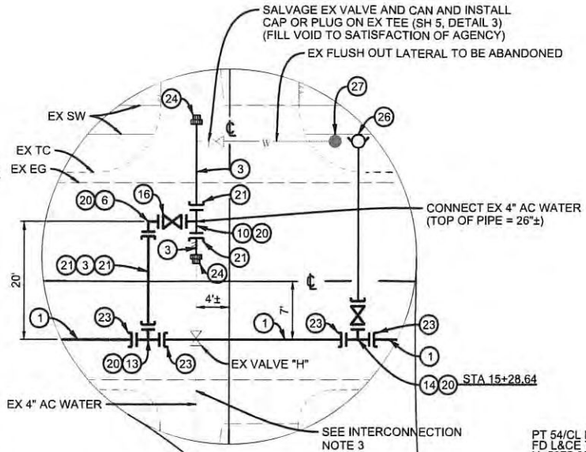
TITLE SHEET, LEGEND, VICINITY AND KEY MAPS

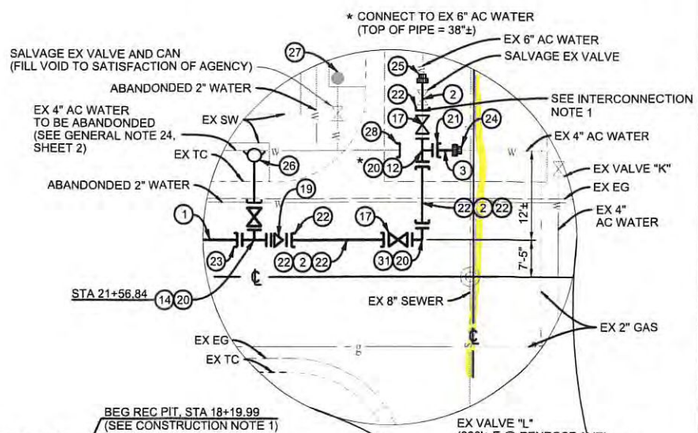
PCA SATIVA13 | JOC 1812-002.01B1 | SHEET 1 OF 8

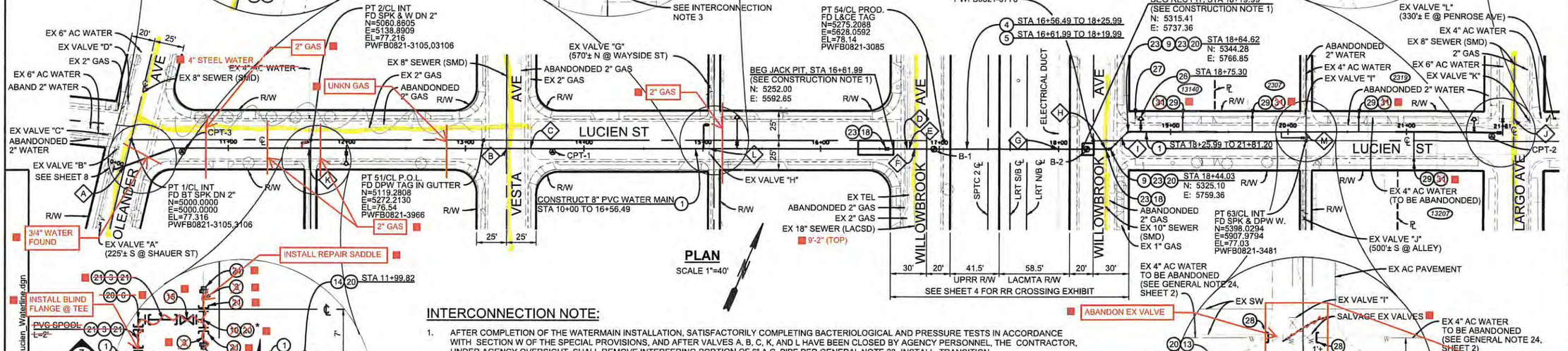
■ AS-BUILT DRAWINGS

DATE: $DATE$ TIME: $TIME$ FILE: $FILE$

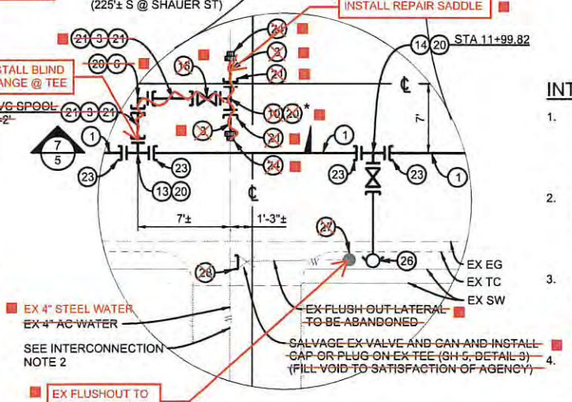


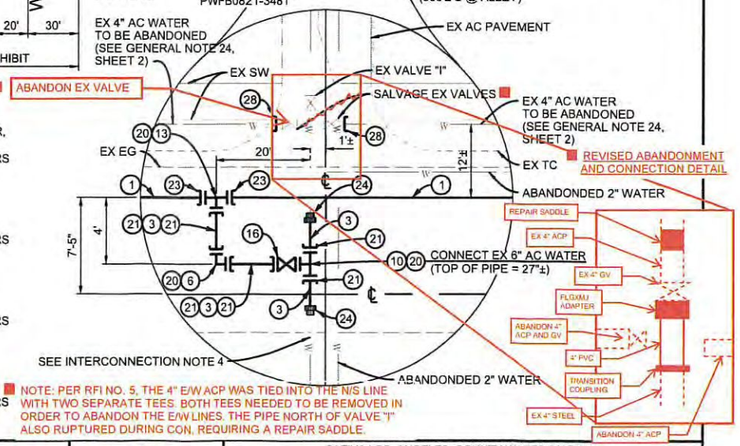






PLAN
SCALE 1"=40'





NOTE: PER RFI NO. 4, THE BYPASS LATERAL WAS NOT INSTALLED DUE TO THE POOR CONDITION OF THE EX 4" STEEL PIPE. THE 4" STEEL PIPE RUPTURED DURING CON AND IT WAS DECIDED TO NOT PROCEED WITH THE BYPASS CONNECTION.

NOTE: PER RFI NO. 5, THE 4" E/W ACP WAS TIED INTO THE N/S LINE WITH TWO SEPARATE TEES. BOTH TEES NEEDED TO BE REMOVED IN ORDER TO ABANDON THE E/W LINES. THE PIPE NORTH OF VALVE "I" ALSO RUPTURED DURING CON, REQUIRING A REPAIR SADDLE.

INTERCONNECTION NOTE:

1. AFTER COMPLETION OF THE WATERMAIN INSTALLATION, SATISFACTORILY COMPLETING BACTERIOLOGICAL AND PRESSURE TESTS IN ACCORDANCE WITH SECTION W OF THE SPECIAL PROVISIONS, AND AFTER VALVES A, B, C, K, AND L HAVE BEEN CLOSED BY AGENCY PERSONNEL, THE CONTRACTOR, UNDER AGENCY OVERSIGHT, SHALL REMOVE INTERFERING PORTION OF 6" A.C. PIPE PER GENERAL NOTE 23, INSTALL TRANSITION COUPLINGS, AND COMPLETE THE INTERCONNECTION AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED AGENCY CUSTOMERS AND THE FIRE DEPARTMENT NO LESS THAN 24 HOURS PRIOR TO LOSS OF SERVICE. MAXIMUM SHUTDOWN SHALL NOT EXCEED 3 HOURS.
2. AFTER COMPLETION OF THE WATERMAIN INSTALLATION, SATISFACTORILY COMPLETING BACTERIOLOGICAL AND PRESSURE TESTS IN ACCORDANCE WITH SECTION W OF THE SPECIAL PROVISIONS, AND AFTER VALVES HAVE BEEN CLOSED BY AGENCY PERSONNEL, THE CONTRACTOR, UNDER AGENCY OVERSIGHT, SHALL REMOVE INTERFERING PORTION OF 4" A.C. PIPE PER GENERAL NOTE 23, INSTALL TRANSITION COUPLINGS, AND COMPLETE THE INTERCONNECTION AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED AGENCY CUSTOMERS AND THE FIRE DEPARTMENT NO LESS THAN 24 HOURS PRIOR TO LOSS OF SERVICE. MAXIMUM SHUTDOWN SHALL NOT EXCEED 3 HOURS.
3. AFTER COMPLETION OF THE WATERMAIN INSTALLATION, SATISFACTORILY COMPLETING BACTERIOLOGICAL AND PRESSURE TESTS IN ACCORDANCE WITH SECTION W OF THE SPECIAL PROVISIONS, AND AFTER VALVES G AND H HAVE BEEN CLOSED BY AGENCY PERSONNEL, THE CONTRACTOR, UNDER AGENCY OVERSIGHT, SHALL REMOVE INTERFERING PORTION OF 4" A.C. PIPE PER GENERAL NOTE 23, INSTALL TRANSITION COUPLINGS, AND COMPLETE THE INTERCONNECTION AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED AGENCY CUSTOMERS AND THE FIRE DEPARTMENT NO LESS THAN 24 HOURS PRIOR TO LOSS OF SERVICE. MAXIMUM SHUTDOWN SHALL NOT EXCEED 3 HOURS.
4. AFTER COMPLETION OF THE WATERMAIN INSTALLATION, SATISFACTORILY COMPLETING BACTERIOLOGICAL AND PRESSURE TESTS IN ACCORDANCE WITH SECTION W OF THE SPECIAL PROVISIONS, AND AFTER VALVES G AND H HAVE BEEN CLOSED BY AGENCY PERSONNEL, THE CONTRACTOR, UNDER AGENCY OVERSIGHT, SHALL REMOVE INTERFERING PORTION OF 4" A.C. PIPE PER GENERAL NOTE 23, INSTALL TRANSITION COUPLINGS, AND COMPLETE THE INTERCONNECTION AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED AGENCY CUSTOMERS AND THE FIRE DEPARTMENT NO LESS THAN 24 HOURS PRIOR TO LOSS OF SERVICE. MAXIMUM SHUTDOWN SHALL NOT EXCEED 3 HOURS.

CONSTRUCTION NOTE:

1. SIZE OF TEMPORARY JACKING BORE PIT AND RECEIVING BORE PIT TO BE DETERMINED BY THE CONTRACTOR BASED ON THE SIZE OF THE DRILL EQUIPMENT.

COUNTY SANITATION DISTRICTS (CSD) NOTES:

1. NOTIFY CSD AT (626) 962-8605 AT LEAST TWO WORKING DAYS PRIOR TO THE START OF CONSTRUCTION NEAR CSD TRUNK SEWERS.

DATE	MARK	DESCRIPTION
7/14/20	■	AS-BUILT REVISIONS

REVISIONS

CHARLES CHEN C 63209 CIVIL REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA
PROJECT ENGINEER 11/19/2019 DATE

SATIVA LOS ANGELES COUNTY WATER DISTRICT

SATIVA - LUCIEN WATERLINE

PROJECT ID NO. DES0003233

PLAN
STA. 10+00 TO STA. 21+81

PCA SATIVA13 | JOC 1812-002.01B1 | SHEET 3 OF 8

AS-BUILT DRAWINGS

CADD PROJECT FILE NAME: DES0003233_Sativa_Lucien_Waterline.dgn
CHECKER: R. GINDI
DESIGNER: C. CHEN
DRAFTER: R. ORTIZ

DATE: $DATE$ TIME: $TIME$ FILE: $FILE$

APPENDIX S

WEST SIDE INTERCONNECT SCENARIO (LIBERTY UTILITIES)

Legend

Junction

AVAIL_FLOW

- less than 1,250
- 1,250 ~ 2,093

Pipe

DIAMETER

- less than 2
- 2 ~ 2
- 2 ~ 4
- 4 ~ 6
- greater than 6

1,965 gpm
2,001 gpm
2,012 gpm
2,025 gpm
1,872 gpm
2,058 gpm
2,094 gpm
2,043 gpm
2,031 gpm
2,042 gpm
2,040 gpm
1,957 gpm
2,031 gpm
2,007 gpm
2,016 gpm
1,639 gpm
1,773 gpm
1,960 gpm
2,005 gpm
2,025 gpm
1,968 gpm
1,885 gpm
2,014 gpm
1,897 gpm
1,520 gpm
1,960 gpm
1,871 gpm
1,881 gpm
1,829 gpm
1,853 gpm
1,802 gpm
1,728 gpm
1,748 gpm
1,748 gpm
1,881 gpm
1,767 gpm
1,681 gpm
1,986 gpm
1,953 gpm
1,903 gpm
1,674 gpm
1,964 gpm
1,945 gpm
1,930 gpm
1,873 gpm
1,660 gpm
1,133 gpm
1,929 gpm
1,913 gpm
1,735 gpm
1,730 gpm

RES-3
RES-5
INTERCONNECT_WEST

E 130th St
W 131st St
E 131st St
E 132nd St
E 133rd St
E 134th St
E 135th St
W 134th Pl
W Stockwell St
E Stockwell St
W Nord St
W 137th St
W 138th St
W Pear St
W Peach St
W Cressey St
E Cressey St
E Mealy St
E Orris St
E Winona St
W Winona St
W Fig St
E Bliss St
E Hatchway St
E Pine St
E Lucien St
E Lutgen St
E Knoph St
E Ohio St
W 119th St

N Wilmington Ave
N Anzac Ave
N Grape Ave
N Paulsen Ave
N Holmes Ave
N Bandera Ave
N Alameda St
S Alameda St
S Willowbrook Ave
N Willowbrook Ave
S Vesta Ave
S Orchard Ave
S Lario Ave
S Mona Blvd
N Mona Blvd
N Culver Ave
N Largo Ave
N Tamarind Ave
N Arabe Ave
N Matthis
N Oleander Ave
N Acacia Ave

Anderson (Marian) Elementary School
Jefferson Elementary School

N
0 0.04 0.08 0.16 Miles

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community

WATER DISTRICT
CIVILTEC engineering inc.
118 W Lime Ave.
Monrovia, CA 91016
Phone: 626.357.0588
Fax: 626.303.7957
Web: www.civiltec.com

SATIVA LA COUNTY WATER DISTRICT
FIRE FLOW ANALYSIS

INTERCONNECT WEST

FIGURE 1

P:\X2018\2018181.00-Sativa-Water System Modeling and Analysis\GIS\Sativa_GIS_2019_update.mxd D 3/14/2019

APPENDIX T

GROUNDWATER WELLS MONITORING MATRIX: 2020-2022 VULNERABILITY ASSESSMENT AND MONITORING FREQUENCY GUIDELINES FOR WELLS 3 AND 5

State Water Resources Control Board
Division of Drinking Water

December 30, 2019

Russ Bryden
Sativa-L.A. CWD
2015 East Hatchway Street
Compton, CA 90222

Dear Russ Bryden:

SYSTEM NO. 1910147: FIRST PERIOD VULNERABILITY ASSESSMENTS (January 1, 2020 through December 31, 2022)

The 1st three-year compliance period (from January 1, 2020 to December 31, 2022) of the fourth nine-year compliance cycle (from January 1, 2020 to December 31, 2028) is around the corner.

Fourth Compliance Cycle									Fifth Compliance Cycle								
1st Period			2nd Period			3rd Period			1st Period			2nd Period			3rd Period		
2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037

In August 2019, the State Water Resources Control Board, Division of Drinking Water (Division) sent a letter to all community and non-transient non-community water systems requesting that each water system return a completed application in order to receive contaminant monitoring waivers for the 1st Period of the Fourth Compliance Cycle. 1,2,3-Trichloropropane was not included in this waiver application process as we had informed you in July 2019 of the next monitoring frequency based on the review of the initial monitoring data.

Based on the applications we received, an evaluation was conducted, and monitoring frequencies were adjusted for the contaminants that the waiver request was granted. We have assigned the following classification(s) for your existing source(s) of supply:

LGLJ

The list of your source(s) and the designated source class code(s) is provided in Enclosure 1.

The monitoring frequencies for the 1st Period of the Fourth Compliance Cycle are outlined in the attached Vulnerability Assessment and Monitoring Frequency Guidelines (VAMFG) (Enclosure 2). You may receive multiple VAMFGs, if you have sources assigned to different source classes. Each VAMFG provides a summary and outlines the general Title 22 monitoring requirements for your quick reference. The VAMFG(s) does not thoroughly address the specific Title 22 monitoring requirements pertaining to initial monitoring, follow-up sampling after detection, reduced monitoring, etc. For clarification on these issues, please consult the applicable regulations or contact our office. In addition, the monitoring frequencies indicated in the VAMFG(s) do not apply to sources that exceed an MCL, or those sources subject to additional monitoring as required by the Division due to treatment operations or detections of constituents at levels of concern.

The following are some highlights of the monitoring requirements for the 1st Period of the Fourth Compliance Cycle:

- **ASBESTOS**

  Distribution System – If your water system has asbestos-cement pipes and has applied for an asbestos waiver for the 1st Period of the Fourth Compliance Cycle, you will be informed of the Division's decision in a separate letter shortly.

  If your water system has asbestos cement pipes and did not apply for an asbestos waiver for 1st Period of the Fourth Compliance Cycle, you will need to collect an asbestos sample by December 31, 2022.

- **SYNTHETIC ORGANIC CHEMICALS (SOCs)**

  Groundwater – For those SOCs that were granted a waiver, monitoring is not required during the 1st Period of the Fourth Compliance Cycle. *For any SOCs that were not granted a waiver, monitoring will be required by collecting **two quarterly samples in one year during 2020-2022** for large water systems (serving > 3,300 people) or **one sample during the same period** for small water systems (serving ≤ 3,300 people).*

  Standby Sources – For those SOCs that were granted a waiver, monitoring is not required during the 1st Period of the Fourth Compliance Cycle. For any SOCs that were not granted a waiver, monitoring will be required by sampling once during this nine-year cycle (January 2020 to December 2028).

- **THIOBENCARB**

Groundwater – The letter the Division sent in August 2019 also included information to allow water systems to apply for a Thiobencarb waiver for the 1st Period of the Fourth Compliance Cycle. The Division has completed the review of all Thiobencarb waiver requests. Please see the Thiobencarb Table attached to the VAMFG(s) to see which source(s) received a monitoring waiver. If your waiver request was approved, you do not need to conduct Thiobencarb monitoring for that particular source during 2020-2022. Otherwise, please refer to the VAMFG(s) for the monitoring frequency.

- **PERCHLORATE**

Groundwater – After completion of the initial monitoring and if not detected, the minimum monitoring frequency for perchlorate is one sample every three years. However, based on an extensive history of perchlorate monitoring showing widespread detections in Los Angeles County, the monitoring frequency for some areas was/will be increased to one sample every year. The Perchlorate Table attached to the VAMFG(s) indicates which source(s) needs annual perchlorate monitoring. You are not required to conduct annual monitoring if a Perchlorate Table is not attached to the VAMFG(s).

- **RADIONUCLIDE RULE**

Compliance determinations with the radionuclide maximum contaminant levels (MCLs) and monitoring requirements should be conducted in accordance with Section 64442, Title 22, California Code of Regulations. Each applicable regulated radionuclide must be monitored in accordance with the minimum monitoring frequencies of the standardized monitoring framework (i.e., 9-year cycle consisting of three 3-year periods). Therefore, uranium, radium-226 (Ra-226), radium-228 (Ra-228), and combined radium 226 and 228 must be monitored **at least once per 9-year cycle**. You are required to monitor for radionuclides in accordance with the enclosed VAMFG(s) for your sources.

General Notes 1 and 2 apply to Community Water Systems only

General Note 1: The MCL of 5 pCi/L applies to combined radium 226 and 228. It is recommended that if radium-226 and radium-228 are on different monitoring frequencies, the specific radium isotope that requires monitoring the soonest should dictate that the other isotope be monitored at the same time.

General Note 2: When using a gross alpha particle activity measurement in lieu of a radium-226 and/or uranium measurement, the gross alpha particle activity analytical result should be used to determine the future monitoring frequency for radium-226 and/or uranium. If the gross alpha particle activity result is less than

detection, use ½ the detection limit (DLR) to determine compliance and the future monitoring frequency for radium-226 and/or uranium.

General Note 3 applies to NTNC water systems only

General Note 3: Section 64442(b)(3) states that NTNCs "shall monitor for compliance with the combined radium MCL" using EPA method 903.0, the method used to determine Total Alpha Radium (A-080). Further, Section 64442(h)(3)(c) discusses the compliance determinations with the radionuclide MCLs. It states that when gross alpha is being used in lieu of combined radium and/or uranium, ½ the DLR shall be used to calculate the annual average. The same method of using ½ the DLR is to be used in determining subsequent monitoring requirements for combined radium and/or uranium.

Regulations for new chemicals are frequently being adopted. As this occurs, we will notify you. If you have any questions, please contact Ofelia Oracion at 818-551-2020 or me at 818-551-2045. You may also obtain additional information from the Division's website http://www.waterboards.ca.gov/drinking_water/programs.

Sincerely,

Shu-Fang Orr

Shu-Fang Orr, P.E.
District Engineer
Angeles District

Enclosures (2): Source Class Code List
Vulnerability Assessment & Monitoring Frequency Guidelines

CC: Russ Bryden
General Manager

Jose Molina
Chief Operator

Pedro Campos
Field Supervisor

California State Water Resources Control Board - Division of Drinking Water
Enclosure 1 - **Source Class List**
First Period of the Fourth Compliance Cycle (2020-2022)

Water System Number	Water System Name	PS CODE	Source Name	Source Class Code
1910147	SATIVA-L.A. CWD	1910147-002	WELL 03	LGLJ
1910147	SATIVA-L.A. CWD	1910147-005	WELL 05	LGLJ

STATE WATER RESOURCES CONTROL BOARD, DIVISION OF DRINKING WATER (DDW)
Vulnerability Assessment and Monitoring Frequency Guidelines
Source Class Code: LGLJ, Community Water System, Groundwater, Population > 3300
Monitoring Period: January 1, 2020 to December 31, 2022

INORGANIC CHEMICALS Table 64431-A	MCL (mg/L)	Vulnerability	Monitoring Frequency
Aluminum (See Also Secondary Standards)	1.	N/A	Every Three Years
Antimony	0.006	N/A	Every Three Years
Arsenic	0.010	N/A	Every Three Years
Asbestos	7 MFL*	Non-Vulnerable Vulnerable	Waived Once during this period if your source(s) is listed in the Asbestos Table[1]
Barium	1.	N/A	Every Three Years
Beryllium	0.004	N/A	Every Three Years
Cadmium	0.005	N/A	Every Three Years
Chromium	0.05	N/A	Every Three Years
Cyanide	0.15	Vulnerable	Every Three Years
Fluoride	2.0	N/A	Every Three Years
Mercury	0.002	N/A	Every Three Years
Nickel	0.1	N/A	Every Three Years
Nitrate (as Nitrogen)	10.	N/A	Annually if < 1/2 MCL Quarterly if ≥ 1/2 MCL but ≤ MCL
Nitrite (as Nitrogen)	1.0	N/A	Every Three Years if < 1/2 MCL Quarterly if ≥ 1/2 MCL but ≤ MCL
Perchlorate	0.006	N/A	Every Three Years Annually if your source(s) is listed in the Perchlorate Table[2] Quarterly if ≥ DLR but ≤ MCL
Selenium	0.05	N/A	Every Three Years
Thallium	0.002	N/A	Every Three Years

*MFL - Million fibers per liter; MCL for fibers exceeding 10 um in length

[1]DDW has determined certain sources to be vulnerable to asbestos contamination due to a review of USGS information. The enclosed Asbestos Table indicates which source is vulnerable to asbestos. You do not need to conduct monitoring if an Asbestos Table is not enclosed.

[2]DDW requires some sources to have annual perchlorate monitoring due to known contamination. The enclosed Perchlorate Table indicates which source needs annual perchlorate monitoring. You do not need to conduct annual monitoring if a Perchlorate Table is not enclosed.

[3]If you submitted a waiver request for Thiobencarb, please refer to the enclosed Thiobencarb Table for monitoring requirements.

GENERAL MINERAL Section 64449 (b)(2)	MCL (mg/L)	Vulnerability	Monitoring Frequency
Bicarbonate Alkalinity	—	N/A	Every Three Years
Calcium	—	N/A	Every Three Years
Carbonate Alkalinity	—	N/A	Every Three Years
Hydroxide Alkalinity	—	N/A	Every Three Years
Magnesium	—	N/A	Every Three Years
Sodium	—	N/A	Every Three Years
Total Hardness	—	N/A	Every Three Years
pH	—	N/A	Every Three Years
SECONDARY STANDARDS Tables 64449-A	**MCL (mg/L)**	**Vulnerability**	**Monitoring Frequency**
Aluminum	0.2 mg/L	N/A	Every Three Years
Color	15 Units	N/A	Every Three Years
Copper	1.0 mg/L	N/A	Every Three Years
Foaming Agents (MBAS)	0.5 mg/L	N/A	Every Three Years
Iron	0.3 mg/L	N/A	Every Three Years
Manganese	0.05 mg/L	N/A	Every Three Years
Odor - Threshold	3 Units	N/A	Every Three Years
Silver	0.1 mg/L	N/A	Every Three Years
Thiobencarb	0.001 mg/L	N/A	Follow monitoring requirement in Table 64444-A Part (b)
Turbidity	5 NTU	N/A	Every Three Years
Zinc	5.0 mg/L	N/A	Every Three Years
Methyl-*tert*-butyl ether (MTBE)	0.005 mg/L	N/A	Follow monitoring requirement in Table 64444-A Part (a)
SECONDARY STANDARDS Tables 64449-B	**MCL (mg/L)**	**Vulnerability**	**Monitoring Frequency**
Total Dissolved Solids (TDS)	500-1000 mg/L	N/A	Every Three Years
Specific Conductance	900 - 1600 umhos	N/A	Every Three Years
Chloride	250-500 mg/L	N/A	Every Three Years
Sulfate	250-500 mg/L	N/A	Every Three Years
RADIONUCLIDES Sections 64442 and 64443	**MCL (pCi/L)**	**Vulnerability**	**Monitoring Frequency**
Gross Alpha Particle Activity	15	**At a minimum all regulated isotopes must be monitored at least once per 9-year cycle.** Based on your last round of monitoring results • < DLR, collect 1 sample in 9 years • ≥ DLR but ≤ 1/2 MCL, collect 1 sample in 6 years • > 1/2 MCL but ≤ MCL, collect 1 sample in 3 years	
Combined Radium-226 and Radium-228	5		
Uranium	20		
Tritium	20,000	Non-Vulnerable, unless notified by DDW	Waived, unless notified by DDW
Strontium	8		
Beta/photon emitters	4 millirem/year		

VOLATILE ORGANIC CHEMICALS (VOCs) Table 64444-A Part (a)	MCL (mg/L)	Vulnerability	Monitoring Frequency
Benzene	0.001	Vulnerable	**Annually** **Quarterly if ≥ DLR but ≤ MCL** **Monthly if > MCL**
Carbon Tetrachloride	0.0005	Vulnerable	As Above
1,2-Dichlorobenzene	0.6	Vulnerable	As Above
1,4-Dichlorobenzene	0.005	Vulnerable	As Above
1,1-Dichloroethane	0.005	Vulnerable	As Above
1,2-Dichloroethane	0.0005	Vulnerable	As Above
1,1-Dichloroethylene	0.006	Vulnerable	As Above
cis-1,2-Dichloroethylene	0.006	Vulnerable	As Above
trans-1,2-Dichloroethylene	0.01	Vulnerable	As Above
Dichloromethane	0.005	Vulnerable	As Above
1,2-Dichloropropane	0.005	Vulnerable	As Above
1,3-Dichloropropene	0.0005	Vulnerable	As Above
Ethylbenzene	0.3	Vulnerable	As Above
Methyl-*tert*-butyl ether (MTBE)	0.013	Vulnerable	As Above
Monochlorobenzene	0.07	Vulnerable	As Above
Styrene	0.1	Vulnerable	As Above
1,1,2,2-Tetrachloroethane	0.001	Vulnerable	As Above
Tetrachloroethylene	0.005	Vulnerable	As Above
Toluene	0.15	Vulnerable	As Above
1,2,4-Trichlorobenzene	0.005	Vulnerable	As Above
1,1,1-Trichloroethane	0.200	Vulnerable	As Above
1,1,2-Trichloroethane	0.005	Vulnerable	As Above
Trichlorofluoromethane	0.15	Vulnerable	As Above
1,1,2-Trichloro-1,2,2-trifluoroethane	1.2	Vulnerable	As Above
Trichloroethylene	0.005	Vulnerable	As Above
Vinyl Chloride	0.0005	Vulnerable	As Above
Xylenes	1.750	Vulnerable	As Above

SYNTHETIC ORGANIC CHEMICALS (SOCs) Table 64444-A Part (b)	MCL (mg/L)	Vulnerability	Monitoring Frequency
Alachlor	0.002	Non-Vulnerable	Waived
Atrazine	0.001	Non-Vulnerable	Waived
Bentazon	0.018	Non-Vulnerable	Waived
Benzo (a) pyrene	0.0002	Non-Vulnerable	Waived
Carbofuran	0.018	Non-Vulnerable	Waived
Chlordane	0.0001	Non-Vulnerable	Waived
2,4-D	0.07	Non-Vulnerable	Waived
Dalapon	0.2	Non-Vulnerable	Waived
1,2-Dibromo-3-chloropropane (DBCP)	0.0002	Non-Vulnerable	Waived
Di (2-ethylhexyl) adipate	0.4	Non-Vulnerable	Waived
Di (2-ethylhexyl) phthalate (DEHP)	0.004	Vulnerable	Two quarterly samples in one year during this period
Dinoseb	0.007	Non-Vulnerable	Waived
Diquat	0.02	Non-Vulnerable	Waived
Endothall	0.1	Non-Vulnerable	Waived
Endrin	0.002	Non-Vulnerable	Waived
Ethylene Dibromide (EDB)	0.00005	Non-Vulnerable	Waived
Glyphosate	0.7	Non-Vulnerable	Waived
Heptachlor	0.00001	Non-Vulnerable	Waived
Heptachlor Epoxide	0.00001	Non-Vulnerable	Waived
Hexachlorobenzene	0.001	Non-Vulnerable	Waived
Hexachlorocyclopentadiene	0.05	Non-Vulnerable	Waived
Lindane	0.0002	Non-Vulnerable	Waived
Methoxychlor	0.03	Non-Vulnerable	Waived
Molinate	0.02	Non-Vulnerable	Waived
Oxamyl (Vydate)	0.05	Non-Vulnerable	Waived
Pentachlorophenol	0.001	Non-Vulnerable	Waived
Picloram	0.5	Non-Vulnerable	Waived
Polychlorinated Biphenyls (PCBs)	0.0005	Non-Vulnerable	Waived
Simazine	0.004	Non-Vulnerable	Waived
Thiobencarb	0.07	Refer to "Thiobencarb Table"[3]	Vulnerable-Two quarterly samples in one year during this period Waived-No Samples required in this period
Toxaphene	0.003	Non-Vulnerable	Waived
2,3,7,8-TCDD (Dioxin)	$3x10^{-8}$	Non-Vulnerable	Waived
2,4,5-TP (Silvex)	0.05	Non-Vulnerable	Waived
1,2,3-Trichloropropane (1,2,3-TCP)	0.000005	Vulnerable	Refer to the July 2019 1,2,3-TCP Letter or contact your assigned engineer

California State Water Resources Control Board - Division of Drinking Water

Thiobencarb Monitoring

First Period of Fourth Compliance Cycle (2020-2022)

If the source is eligible for a Thiobencarb waiver (as noted with a "**YES**" in the table below), then no samples are required for this period (2020-2022).

If the source is not eligible a Thiobencarb waiver (as noted with a "**NO**" in the table below), please refer to your VAMFG.

Water System Number	Water System Name	PS Code	Source Name	Source Class Code	Source Waived for Thiobencarb Monitoring
1910147	SATIVA-L.A. CWD	1910147-002	WELL 03	LGLJ	YES
1910147	SATIVA-L.A. CWD	1910147-005	WELL 05	LGLJ	YES

California State Water Resources Control Board - Division of Drinking Water

Perchlorate Monitoring

First Period of the Fourth Compliance Cycle (2020-2022)

- The source(s) listed on this table must be sampled at least once annually.
- Quarterly sampling is required if a sample result is ≥ DLR but ≤ MCL.
- More frequent monitoring may be required per your permit condition, or if instructed to do so by the Division.

System Number	System Name	PS Code	Source Name	Source Class Code	Minimum Perchlorate Monitoring Sampling
1910147	SATIVA-L.A. CWD F	1910147-002	WELL 03	LGLJ	ANNUAL
1910147	SATIVA-L.A. CWD F	1910147-005	WELL 05	LGLJ	ANNUAL

APPENDIX U

SUMMARY OF MONITORING DATA FROM THE DIVISION'S WATER QUALITY DATABASE FROM JANUARY 1, 1994 TO NOVEMBER 30, 2020 FOR WELLS 3 AND 5

TITLE 22 WATER QUALITY MONITORING REVIEW

SYSTEM NAME:	**Sativa Water System**	SYSTEM NUMBER:	**1910147**
SOURCE NAME:	**Well 3**	PS CODE:	**1910147-002**
SOURCE CLASS:	**LGLJ**	STATUS:	**Active**
PERIOD FROM:	**January 1, 1994**	PERIOD TO:	**November 30, 2020**
PREPARED BY:	**Ofelia Oracion**	DATE:	**December 11, 2020**

1. INORGANIC CHEMICALS (Table 64431-A)

Constituents	MCL[1] (mg/L)	DLR[2] (mg/L)	Concentration Ranges (mg/L)	Monitoring Information				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due by	
Aluminum	1	.05	NDs[3] - .067	10/2019	ND	3	10/2022	1 data >DLR (9/1996)
Antimony	0.006	0.006	NDs	10/2019	ND	3	10/2022	
Arsenic	0.01	0.002	ND – 0.0026	10/2019	0.0023	3	10/2022	1st >DLR (9/1996)
Asbestos	7 MFL	0.2 MFL	ND	10/2016	ND	-	TBD[4]	Waived.[5]
Barium	1	0.1	0.11 – 0.12	10/2019	0.11	3	10/2022	
Beryllium	0.004	0.001	NDs	10/2019	ND	3	10/2022	
Cadmium	0.005	0.001	NDs	10/2019	ND	3	10/2022	
Chromium, Total	0.05	0.01	NDs – 0.0107	10/2019	ND	3	10/2022	I data >DLR (7/1999)
Chromium VI	-	0.001	NDs	10/2014	ND	-	-	
Cyanide	0.15	0.1	NDs	10/2019	ND	3	10/2022	
Fluoride	2	0.1	0.31 – 0.44	10/2019	0.34	3	10/2022	
Lead	-	0.005	NDs	10/2019	ND	-	-	
Mercury	0.002	0.001	ND - <1.0	10/2019	ND	3	10/2022	
Nickel	0.1	0.01	NDs	10/2019	ND	3	10/2022	
Nitrate (as NO_3)	45	2	ND – 5.1	10/2015	3.2	-	-	
Nitrate (as N)	1	0.4	NDs – 0.73	7/2020	0.45	1[6]	7/2021	
Nitrite (as N)	1	0.4	NDs	10/2019	ND	3[6]	10/2022	
Nitrate + Nitrite (as N)	10	-	0.78 – 0.91	10/2013	0.91	-	-	
Perchlorate	0.006	0.004	NDs	7/2020	ND	1[7]	7/2021	
Selenium	0.05	0.005	NDs	10/2019	ND	3	10/2022	
Thallium	0.002	0.002	NDs	10/2019	ND	3	10/2022	

1 MCL – maximum contaminant level
2 DLR – detection limit for purposes of reporting
3 ND - non-detect
4 To be determined
5 Monitoring for asbestos is waived during the first period (2020-2022) of the fourth compliance cycle (2020-2028).
6 Increase to quarterly monitoring if ≥ ½ MCL.
7 Increase to quarterly monitoring if ≥ DLR.

2. GENERAL MINERAL (Section 64449 (c)(2))

Constituents	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due by	
Aggressive Index	-	-	12 – 13	10/2019	12.4	-	-	
Alkalinity as $CaCO_3$	-	-	160 - 200	10/2019	190	-	-	
Bicarbonate Alkalinity	-	-	160 –240	10/2019	230	3	10/2022	
Calcium	-	-	69 – 85.9	10/2019	77	3	10/2022	
Carbonate Alkalinity	-	-	NDs - <2.4	10/2019	ND	3	10/2022	
Hydroxide Alkalinity	-	-	NDs - <1.4	10/2019	ND	3	10/2022	
Magnesium	-	-	14 – 18.7	10/2019	17	3	10/2022	
Sodium	-	-	38 – 43.1	10/2019	39	3	10/2022	
Total Hardness	-	-	230 – 291	10/2019	260	3	10/2022	
pH, Laboratory	-	-	7.52 – 8.08	10/2019	7.84	3	10/2022	

3. SECONDARY STANDARDS (Tables 64449-A and B)

Constituents	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due by	
Aluminum[1]	0.2	0.05	ND - .067	-	-	-	-	See Table 64431-A
Color	15 Units	-	NDs	10/2019	ND	3	10/2022	
Copper	1	0.05	NDs	10/2019	ND	3	10/2022	
Foaming Agents (MBAS)	0.5	-	NDs	10/2019	ND	3	10/2022	
Iron	0.3	0.1	ND – 0.17	10/2019	ND	3	10/2022	
Manganese	0.05	0.02	NDs	10/2020	ND	3	10/2023	
Odor-Threshold	3 Units	1	ND - 1	10/2019	1	3	10/2022	>DLR (1996, 1999 & 2002)
Silver	0.1	0.01	NDs	10/2019	ND	3	10/2022	
Thiobencarb[2]	0.001	-	NDs	-	-	-	-	See Table 64444-A part b
Turbidity	5 NTU	-	ND – 0.57	10/2019	ND	3	10/2022	
Zinc	5	0.05	NDs	10/2019	ND	3	10/2022	
MTBE[3]	0.005	0.003	NDs	-	-	-	-	See Table 64444-A part a
Total Dissolved Solids	500-1000	-	310 – 450	10/2019	360	3	10/2022	
Specific Conductance	900-1600 µS/cm	-	630 – 690	10/2019	680	3	10/2022	
Chloride	250-500	-	36 - 43	10/2019	49	3	10/2022	
Sulfate	250-500	-	86 - 100	10/2019	99	3	10/2022	

1 Monitoring frequency for aluminum follows the monitoring requirement for primary MCL
2 Monitoring frequency for thiobencarb follows the monitoring requirement for primary MCL.
3 Methyl-*tert*-butyl ether. Monitoring frequency for MTBE follows the monitoring requirement for primary MCL.

4. RADIONUCLIDES (Sections 64441 and 64443)

Constituents	MCL (pCi/L)	DLR (pCi/L)	Concentration Ranges (pCi/L)	Monitoring				REMARKS
				Last	Result (pCi/L)	Frequency (Years)	Next Due by	
Gross Alpha	15	3	3.7 – 10.1	1/2015	5.94	6	1/2021	
Radium-226	5[1]	1	NDs	1/2015	ND	9	1/2024	Monitor when triggered.[2]
Radium-228	5[1]	1	NDs	1/2015	ND	9	1/2024	Monitor when triggered.[3]
Uranium	20	2	3.04 – 6.9	1/2015	5.5	6	1/2021	
Tritium	20000	1000	-	-	-	-	-	Waived
Strontium	8	2	-	-	-	-	-	Waived

1 Combined radium-226 & -228
2 Sample the well if gross alpha particle activity (GA + 0.84 x counting error) minus uranium exceeds 5-pCi/L. Otherwise, follow monitoring frequency.
3 When the source calls to sample for Rad-226, sample for Rad-228 should be collected at the same time.

5. VOLATILE ORGANIC CHEMICALS (Table 64444-A part a)

Constituents	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due by	
Benzene	0.001	0.0005	NDs	7/2020	ND	1	7/2021	
Carbon Tetrachloride	0.0005	0.0005	NDs	7/2020	ND	1	7/2021	
1,2-Dichlorobenzene	0.6	0.0005	NDs	7/2020	ND	1	7/2021	
1,4-Dichlorobenzene	0.005	0.0005	NDs	7/2020	ND	1	7/2021	
1,1-Dichloroethane	0.005	0.0005	NDs	7/2020	ND	1	7/2021	
1,2-Dichloroethane	0.0005	0.0005	NDs	7/2020	ND	1	7/2021	
1,1-Dichloroethylene	0.006	0.0005	NDs	7/2020	ND	1	7/2021	
cis-1,2-Dichloroethylene	0.006	0.0005	NDs	7/2020	ND	1	7/2021	
trans-1,2-Dichloroethylene	0.01	0.0005	NDs	7/2020	ND	1	7/2021	
Dichloromethane	0.005	0.0005	NDs	7/2020	ND	1	7/2021	

Constituents	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due by	
1,2-Dichloropropane	0.005	0.0005	NDs	7/2020	ND	1	7/2021	
1,3-Dichloropropene	0.0005	0.0005	NDs	7/2020	ND	1	7/2021	
Ethylbenzene	0.3	0.0005	NDs	7/2020	ND	1	7/2021	
MTBE	0.013	0.003	NDs	7/2020	ND	1	7/2021	
Monochlorobenzene	0.07	0.0005	NDs	7/2020	ND	1	7/2021	
Styrene	0.1	0.0005	NDs	7/2020	ND	1	7/2021	
1,1,2,2-Tetrachloroethane	0.001	0.0005	NDs	7/2020	ND	1	7/2021	
Tetrachloroethylene (PCE)	0.005	0.0005	NDs – 0.0014	10/2020	0.0008	Quarterly	1st Quarter 2021	Quarterly monitoring was initiated in 8/2009. PCE has been >DLR.
Toluene	0.15	0.0005	NDs	7/2020	ND	1	7/2021	
1,2,4-Trichlorobenzene	0.005	0.0005	NDs	7/2020	ND	1	7/2021	
1,1,1-Trichloroethane	0.2	0.0005	NDs	7/2020	ND	1	7/2021	
1,1,2-Trichloroethane	0.005	0.0005	NDs	7/2020	ND	1	7/2021	
Trichlorofluoromethane	0.15	0.005	NDs	7/2020	ND	1	7/2021	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.2	0.01	NDs	7/2020	ND	1	7/2021	
Trichloroethylene	0.005	0.0005	NDs	10/2020	ND	Quarterly	1st Quarter 2021	
Vinyl Chloride	0.0005	0.0005	NDs	7/2020	ND	1	7/2021	
Xylenes	1.75	0.0005	NDs	7/2020	ND	1	7/2021	

6. SYNTHETIC ORGANIC CHEMICALS (Table 64444-A part b)

Constituents	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due	
Alachor	0.002	0.001	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Atrazine	0.001	0.0005	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Bentazon	0.018	0.002	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Benzo (a)pyrene	0.0002	0.0001	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Carbofuran	0.018	0.005	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Chlordane	0.0001	0.0001	NDs	7/2011	ND	-	TBD[1]	Waived[2]
2,4-D	0.07	0.01	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Dalapon	0.2	0.1	NDs	7/2011	ND		TBD[1]	Waived[2]
1,2-Dibromo-3-chloropropane (DBCP)	0.0002	0.00001	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Di (2-ethylhexyl) adipate	0.4	0.005	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Di (2-ethylhexyl) phthalate (DEHP)	0.004	0.003	NDs	7/2018 10/2018	ND ND	2 quarters in one year every 3 years	2021	
Dinoseb	0.007	0.002	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Diquat	0.02	0.004	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Endothall	0.1	0.045	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Endrin	0.002	0.0001	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Ethylene Dibromide (EDB)	0.00005	0.00002	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Glyphosate	0.7	0.025	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Heptachlor	0.00001	0.00001	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Heptachlor Epoxide	0.00001	0.00001	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Hexachlorobenzene	0.001	0.0005	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Hexachlorocyclopentadiene	0.05	0.001	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Lindane	0.0002	0.0002	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Methoxychlor	0.03	0.01	NDs	7/2011	ND	-	TBD[1]	Waived[2]

Constituents	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due	
Molinate	0.02	0.002	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Oxamyl (Vydate)	0.05	0.02	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Pentachlorophenol	0.001	0.0002	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Picloram	0.5	0.001	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Polychlorinated Biphenyls (PCBs) (as decachlorobiphenyl)	0.0005	0.0005	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Simazine	0.004	0.001	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Thiobencarb	0.07	0.001	NDs	7/2018 10/2018	ND ND	-	TBD[1]	Waived[3]
Toxaphene	0.003	0.001	NDs	7/2011	ND	-	TBD[1]	Waived[2]
1,2,3-Trichloropropane	0.000005	0.000005	NDs	7/2019	ND	2 quarters in one year every 3 years	2021	Initial monitoring completed in 10/2018.
2,3,7,8-TCDD (Dioxin)	$3x10^{-8}$	$5x10^{-9}$	NDs	7/2011	ND	-	TBD[1]	Waived[2]
2,4,5-TP (Silvex)	0.05	0.001	NDs	7/2011	ND	-	TBD[1]	Waived[2]

1 To be determined

2 Monitoring is waived during the first period (2020-2022) of the fourth compliance cycle (2020-2028).

7. TRIHALOMETHANES

Constituents	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring Information				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due	
Total Trihalomethanes	0.08	-	ND – 0.0049	7/2020	ND	-	-	

8. UNREGULATED CHEMICALS WITH MONITORING REQUIREMENTS (Table 64450)

Monitoring for unregulated chemicals listed in the table below had been phased out in December 2003. However, if monitoring requirements were not met, the water systems were given the chance to complete the monitoring in December 2007. Monitoring consists of two consecutive samples five to seven months apart in a single year.

Constituents	NL[1] (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring Information				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due	
Boron[2]	1	0.10	0.10 -0.11	12/2001	0.11	-	-	
Vanadium[2]	0.05	0.003	0.003 - 0.0032	12/2001	0.003	-		
Dichlorodifluoromethane (Freon 12)[2]	1	0.0005	NDs	7/2020	ND	-	-	
Ethlyl-*Tert*-Butly Ether (ETBE)[3]	N/A	0.003	NDs	7/2020	ND	-	-	Waived.
Tert-Amyl Methyl Ether (TAME)[3]	N/A	0.003	NDs	7/2020	ND	-	-	Waived.
Tert-Butyl Alcohol (TBA)[3]	0.012	0.002	NDs	2/2008	ND	-	-	Waived.

1 NL – notification level

2 Monitoring requirement was completed

3 Monitoring was walved If MTBE was non-detected.

9. OTHER UNREGULATED CHEMICALS WITH NOTIFICATION LEVELS

The following table provides for list of contaminants with notification levels. When concentrations are found greater than these levels, certain requirement and recommendations apply.

Constituents	NL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring Information				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due	
N-Butylbenzene	0.26	0.0005	NDs	7/2020	ND	-	-	
Sec-Butylbenzene	0.26	0.0005	NDs	7/2020	ND	-	-	
Tert-Butylbenzene	0.26	0.0005	NDs	7/2020	ND	-	-	

Constituents	NL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring Information				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due	
Carbon disulfide	0.16	0.0005	ND	8/2006	ND	-	-	
Chlorate	0.8	-	-	-	-	-	-	No record.
2-Chlorotoluene	0.14	0.0005	NDs	7/2020	ND	-	-	
4-Chlorotoluene	0.014	0.0005	NDs	7/2020	ND	-	-	
Diazinon	0.0012	0.0012	ND	12/1995	ND	-	-	
1,4-Dioxane	0.001	0.001	ND - **0.0074**[1]	10/2020	ND	Quarterly	1st Quarter 2021	
Ethylene glycol	14	-	-	-		-	-	No record.
Formaldehyde	0.1	-	-	-	-	-	-	No record.
HMX	0.35	-	-	-	-	-	-	No record.
Isopropylbenzene	0.77	0.0005	NDs	7/2020	ND	-	-	
Methyl isobutyl ketone (MIBK)	0.12	0.005	NDs	7/2020	ND	-	-	
Naphthalene	0.017	0.0005	NDs	7/2020	ND	-	-	
N-Nitrosodiethyamine (NDEA)	0.00001	-	-	-	-	-	-	No record.
N-Nitosodimethlamine (NDMA)	0.00001	-	-	-	-	-	-	No record.
N-Nitrosodi-n-propylamine (NDPA)	0.00001	-	-	-	-	-	-	No record.
Propachlor	0.09	-	-	-	-	-	-	No record.
N-Propylbenzene	0.26	0.0005	NDs	7/2020	ND	-	-	
RDX	0.0003	-	-	-	-	-	-	No record.
1,2,4-Trimethylbenzene	0.33	0.0005	NDs	7/2020	ND	-	-	
1,3,5-Trimethlybenzene	0.33	0.0005	NDs	7/2020	ND	-	-	
2,4,6-Trinitrotoluene (TNT)	0.001	-	-	-	-	-	-	No record.

[1] Public notification is required.

10. OTHER PHASED-OUT UNREGULATED CHEMICALS

Table 64450 A Unregulated VOCs	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring Information				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due	
Bromobenzene	-	0.0005	NDs	7/2020	ND	-	-	
Bromodichlormethane (THM)	0.08	0.001	NDs	7/2020	ND	-	-	
Bromoform (THM)	0.08	0.001	NDs – 0.0021	7/2020	ND	-	-	
Bromomethane	-	0.0005	NDs	7/2020	ND	-	-	
Chlorodibromomethane (THM)	0.08	0.001	NDs – 0.0014	7/2020	ND	-	-	
Chloroethane	-	0.0005	NDs	7/2020	ND	-	-	
Chloroform (THM)	0.08	0.001	NDs – 0.0032	7/2020	ND	-	-	
Chloromethane	-	0.0005	NDs	7/2020	ND	-	-	
Dibromomethane	-	0.0005	NDs	7/2020	ND	-	-	
1,3-Dichlorobenzene	-	0.0005	NDs	7/2020	ND	-	-	
1,3-Dichloropropane	-	0.0005	NDs	7/2020	ND	-	-	
2,2-Dichloropropane	-	0.0005	NDs	7/2020	ND	-	-	
1,1-Dichloropropene	-	0.0005	NDs	7/2020	ND	-	-	
1,1,1,2-Tetrachloroethane	-	0.0005	NDs	7/2020	ND	-	-	

Table 64450 B Unregulated VOCs	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring Information				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due	
Bromochloromethane	-	0.0005	NDs	7/2020	ND	-	-	
Hexachlorobutadiene	-	0.0005	NDs	7/2020	ND	-	-	
P-Isopropyltoluene	-	0.0005	NDs	7/2020	ND	-	-	
1,2,3-Trichlorobenzene	-	0.0005	NDs	7/2020	ND	-	-	

Table 64450 B Unregulated SOCs	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring Information				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due	
Bromacil	-	0.0005	-	-	-	-	-	No record.
Chlorothalonil	-	0.0005	-		-	-	-	No record.
Dimethoate	-	0.0005	-	-	-	-	-	No record.
Diuron	-	0.001	-	-	-	-	-	No record.
Phthalates	-	-	-	-	-	-	-	No record.
Plycyclic Acrylic Hydrocarbons (PAHs)	-	0.0005	-	-	-	-	-	No record.
Prometryn	-	0.0005	-	-	-	-	-	No record.
2,4,5-T	-	-	-	-	-	-	-	No record.

Table 64450 C Unregulated SOCs	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring Information				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due	
Aldrin	-	0.0005	-	-	-	-	-	No record.
Aldicarb	-	0.003	NDs	7/2011	ND	-	-	
Aldicarb Sulfone	-	0.004	NDs	7/2011	ND	-	-	
Aldicarb Sulfoxide	-	0.003	NDs	7/2011	ND	-	-	
Bromacyl	-	0.01	-	-	-	-	-	No record.
Butachlor	-	0.0005	-	-	-	-	-	No record.
Carbaryl	-	0.005	NDs	7/2011	ND	-	-	One record.
Dicamba	-	0.0015	NDs	7/2011	ND	-	-	
Dieldrin	--	-	-	-	-	-	-	No record.
3-Hydroxycarbofuran	-	0.003	NDs	7/2011	ND	-	-	
Methomyl	-	0.002	NDs	7/2011	ND	-	-	
Metribuzin	-	0.003	-	-	-	-	-	No record.

11. OTHER CHEMICALS WITH MONITORING RECORDS

Chemicals	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring Information				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due	
Langalier Index@60C	-	-	0.60	9/1996	0.60	-	-	
Langelier Index@source	-	-	0.269	11/1998	0.269	-	-	
Source Temp C	-	-	17.8 - 22	10/2013	19.7	-	-	
Nitrate, Nitrogen (NO_3-N)	10	0.40	0.79	11/2007	0.79	-	-	
Potassium	-	-	2.7 – 4.0	10/2016	3.40	-	-	
M,P-Xylene	1.7	0.0005	NDs	7/2020	ND	-	-	
M- Xylene	1.7	0.0005	NDs	7/2002	ND	-	-	
P-Xylene	1.7	0.0005	NDs	7/2002	ND	-	-	
O-Xylene	1.7	0.0005	NDs	7/2020	ND	-	-	
Methyl Ethyl Ketone	-	0.005	NDs	7/2020	ND	-	-	
Cis-1,3-Dichloropropene	-	0.0005	NDs	7/2020	ND	-	-	
Trans-1,3-Dichloropropene	0.0005	0.0005	NDs	7/2020	ND	-	-	
Diisoprophyl Ether	-	0.003	NDs	7/2020	ND	-	-	
2-Chloroethylvinyl Ether	-	0.001	NDs	7/2018	ND	-	-	
Bis (2-chloethyl) Ether	-	0.005	NDs	7/2001	ND	-	-	
Hexachloroethane	-	0.005	ND	8/2006	ND	-	-	
Paraquat	-	0.020	NDs	7/2011	ND	-	-	
PCB – 1016	-	0.0005	ND	7/2011	ND	-	-	
PCB – 1242	-	0.0005	NDs	7/2011	ND	-	-	
PCB – 1248	-	0.0005	NDs	7/2011	ND	-	-	
PCB – 1254	-	0.0005	NDs	7/2011	ND	-	-	
PCB - 1260	-	0.0005	NDs	7/2011	ND	-	-	
Dacthal	-	0.0001	ND	12/2007	ND	-	-	
4-Nitophenol	-	0.005	ND	12/2007	ND	-	-	
DCPA	-	0.001	0.002	7/2011	0.002	-	-	

TITLE 22 WATER QUALITY MONITORING REVIEW

SYSTEM NAME:	**Sativa Water System**	SYSTEM NUMBER:	**1910147**
SOURCE NAME:	**Well 5**	PS CODE:	**1910147-005**
SOURCE CLASS:	**LGLJ**	STATUS:	**Active**
PERIOD FROM:	**January 1, 1994**	PERIOD TO:	**November 30, 2020**
PREPARED BY:	**Ofelia Oracion**	DATE:	**December 11, 2020**

1. INORGANIC CHEMICALS (Table 64431-A)

Constituents	MCL[1] (mg/L)	DLR[2] (mg/L)	Concentration Ranges (mg/L)	Monitoring Information				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due by	
Aluminum	1	.05	NDs[3]	7/2020	ND	3	7/2023	
Antimony	0.006	0.006	NDs	7/2020	ND	3	7/2023	
Arsenic	0.01	0.002	ND – 0.002	7/2020	ND	3	7/2023	1st >DLR in 10/2010
Asbestos	7 MFL	0.2 MFL	ND	6/2020	ND	-	TBD[4]	Waived[5]
Barium	1	0.1	0.11 – 0.13	7/2020	0.11	3	7/2023	
Beryllium	0.004	0.001	NDs	7/2020	ND	3	7/2023	
Cadmium	0.005	0.001	NDs	7/2020	ND	3	7/2023	
Chromium, Total	0.05	0.01	NDs	7/2020	ND	3	7/2023	
Chromium VI	-	0.001	NDs	7/2020	ND	-	-	
Cyanide	0.15	0.1	NDs	7/2020	ND	3	7/2023	
Fluoride	2	0.1	0.33 – 0.39	7/2020	0.38	3	7/2023	
Lead	-	0.005	NDs	7/2020	ND	-	-	
Mercury	0.002	0.001	NDs	7/2020	ND	3	7/2023	
Nickel	0.1	0.01	NDs	7/2020	ND	3	7/2023	
Nitrate (as NO_3)	45	2	ND – <4	10/2015	ND	-	-	
Nitrate (as N)	1	0.4	NDs	7/2020	ND	1[6]	7/2021	
Nitrite (as N)	1	0.4	NDs	7/2020	ND	3[6]	7/2023	
Nitrate + Nitrite (as N)	10	-	ND – 0.66	10/2013	0.64	-	-	
Perchlorate	0.006	0.004	NDs	7/2020	ND	1[7]	7/2021	
Selenium	0.05	0.005	NDs	7/2020	ND	3	7/2023	
Thallium	0.002	0.002	NDs	7/2020	ND	3	7/2023	

1 MCL – maximum contaminant level
2 DLR – detection limit for purposes of reporting
3 ND - non-detect
4 To be determined.
5 Monitoring for asbestos is waived during the first period (2020-2022) of the fourth compliance cycle (2020-2028).
6 Increase to quarterly monitoring if ≥ ½ MCL.
7 Increase to quarterly monitoring if ≥ DLR.

2. GENERAL MINERAL (Section 64449 (c)(2))

Constituents	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due by	
Aggressive Index	-	-	11.8 – 13	7/2020	12.3	-	-	
Alkalinity as $CaCO_3$	-	-	170 - 200	7/2020	190	-	-	
Bicarbonate Alkalinity	-	-	170 –240	7/2020	230	3	7/2023	
Calcium	-	-	64 – 74	7/2020	67	3	7/2023	
Carbonate Alkalinity	-	-	NDs - <2.4	7/2020	ND	3	7/2023	
Hydroxide Alkalinity	-	-	NDs - <1.4	7/2020	ND	3	7/2023	
Magnesium	-	-	13 – 18.4	7/2020	14	3	7/2023	
Sodium	-	-	35 – 44.1	7/2020	35	3	7/2023	
Total Hardness	-	-	210 – 261	7/2020	230	3	7/2023	

Constituents	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due by	
pH, Laboratory	-	-	7.71 – 8.14	7/2020	7.8	3	7/2023	

3. SECONDARY STANDARDS (Tables 64449-A and B)

Constituents	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due by	
Aluminum[1]	0.2	0.05	NDs	-	-	-	-	See Table 64431-A
Color	15 Units	-	NDs – 3	7/2020	ND	3	7/2023	
Copper	1	0.05	NDs	7/2020	ND	3	7/2023	
Foaming Agents (MBAS)	0.5	-	NDs	7/2020	ND	3	7/2023	
Iron	0.3	0.1	NDs	7/2020	0.11	3	7/2023	
Manganese[2]	0.05	0.02	NDs – **0.13**[3]	11/2020	0.023	Quarterly[4]	1st Quarter 2021	RAA for the 4th quarter 2020 is 0.049 mg/L<MCL
Odor-Threshold	3 Units	1	ND – 1	7/2020	ND	3	7/2023	
Silver	0.1	0.01	NDs	7/2020	ND	3	7/2023	
Thiobencarb[5]	0.001	-	NDs	-	-	-	-	See Table 64444-A part b
Turbidity	5 NTU	-	ND – 0.78	7/2020	0.4	3	7/2023	
Zinc	5	0.05	NDs	7/2020	ND	3	7/2023	
MTBE[6]	0.005	0.003	NDs	-	-	-	-	See Table 64444-A part a
Total Dissolved Solids	500-1000	-	360 – 440	7/2020	360	3	7/2023	
Specific Conductance	900-1600 µS/cm	-	580 – 660	7/2020	610	3	7/2023	
Chloride	250-500	-	25 – 37.6	7/2020	35	3	7/2023	
Sulfate	250-500	-	82 - 95	7/2020	88	3	7/2023	

1 Monitoring frequency for aluminum follows the monitoring requirement for primary MCL.
2 Notification Level is 0.05 mg/L. Compliance is based on running annual average (RAA).
3 Above the secondary MCL. The highest level was from a sample collected in 5/2008.
4 Because manganese concentrations fluctuate, Sativa initiated monthly monitoring to track down the concentration trend. The well is proposed to equip with manganese treatment in the future.
5 Monitoring frequency for thiobencarb follows the monitoring requirement for primary MCL.
6 Methyl-*tert*-butyl ether. Monitoring frequency for MTBE follows the monitoring requirement for primary MCL.

4. RADIONUCLIDES (Sections 64441 and 64443)

Constituents	MCL (pCi/L)	DLR (pCi/L)	Concentration Ranges (pCi/L)	Monitoring				REMARKS
				Last	Result (pCi/L)	Frequency (Years)	Next Due	
Gross Alpha	15	3	2.02 – 5.1	6/2020	6.96	6	6/2026	
Radium-226	5[1]	1	NDs	6/2020	ND	9	6/2029	Monitor when triggered.[2]
Radium-228	5[1]	1	ND – 1.81	6/2020	ND	9	6/2029	Monitor when triggered.[3]
Uranium	20	1	3.04 – 6.9	6/2020	4.2	6	6/2026	
Tritium	20000	1000	-	-	-	-	-	Waived
Strontium	8	2	-	-	-	-	-	Waived

1 Combined radium-226 & -228
2 Sample the well for Rad-226 if gross alpha particle activity (GA + 0.84 x counting error) minus uranium exceeds 5-pCi/L. Otherwise, follow monitoring frequency.
3 When the source calls to sample for Rad-226, sample for Rad-228 should be collected at the same time.

5. VOLATILE ORGANIC CHEMICALS (Table 64444-A part a)

Constituents	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due by	
Benzene	0.001	0.0005	NDs	7/2020	ND	1	7/2021	
Carbon Tetrachloride	0.0005	0.0005	NDs	7/2020	ND	1	7/2021	

Constituents	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due by	
1,2-Dichlorobenzene	0.6	0.0005	NDs	7/2020	ND	1	7/2021	
1,4-Dichlorobenzene	0.005	0.0005	NDs	7/2020	ND	1	7/2021	
1,1-Dichloroethane	0.005	0.0005	NDs	7/2020	ND	1	7/2021	
1,2-Dichloroethane	0.0005	0.0005	NDs	7/2020	ND	1	7/2021	
1,1-Dichloroethylene	0.006	0.0005	NDs	7/2020	ND	1	7/2021	
cis-1,2-Dichloroethylene	0.006	0.0005	NDs	7/2020	ND	1	7/2021	
trans-1,2-Dichloroethylene	0.01	0.0005	NDs	7/2020	ND	1	7/2021	
Dichloromethane	0.005	0.0005	NDs	7/2020	ND	1	7/2021	
1,2-Dichloropropane	0.005	0.0005	NDs	7/2020	ND	1	7/2021	
1,3-Dichloropropene	0.0005	0.0005	NDs	7/2020	ND	1	7/2021	
Ethylbenzene	0.3	0.0005	NDs	7/2020	ND	1	7/2021	
MTBE	0.013	0.003	NDs	7/2020	ND	1	7/2021	
Monochlorobenzene	0.07	0.0005	NDs	7/2020	ND	1	7/2021	
Styrene	0.1	0.0005	ND – 0.0006	7/2020	ND	1	7/2021	
1,1,2,2-Tetrachloroethane	0.001	0.0005	NDs	7/2020	ND	1	7/2021	
Tetrachloroethylene (PCE)	0.005	0.0005	ND – 0.00078	10/2020	ND	Quarterly	1st Quarter 2021	Four consecutive quarters from 10/2018 – 7/2019 have results of NDs.
Toluene	0.15	0.0005	NDs	7/2020	ND	1	7/2021	
1,2,4-Trichlorobenzene	0.005	0.0005	NDs	7/2020	ND	1	7/2021	
1,1,1-Trichloroethane	0.2	0.0005	NDs	7/2020	ND	1	7/2021	
1,1,2-Trichloroethane	0.005	0.0005	NDs	7/2020	ND	1	7/2021	
Trichlorofluoromethane	0.15	0.005	NDs	7/2020	ND	1	7/2021	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.2	0.01	NDs	7/2020	ND	1	7/2021	
Trichloroethylene	0.005	0.0005	NDs	10/2020	ND	Quarterly	1st Quarter 2021	
Vinyl Chloride	0.0005	0.0005	NDs	7/2020	ND	1	7/2021	
Xylenes	1.75	0.0005	NDs	7/2020	ND	1	7/2021	

6. SYNTHETIC ORGANIC CHEMICALS (Table 64444-A part b)

Constituents	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due	
Alachor	0.002	0.001	ND	6/2020	ND	-	TBD[1]	Waived[2]
Atrazine	0.001	0.0005	NDs	6/2020	ND	-	TBD[1]	Waived[2]
Bentazon	0.018	0.002	ND	6/2020	ND	-	TBD[1]	Waived[2]
Benzo (a)pyrene	0.0002	0.0001	ND	6/2020	ND	-	TBD[1]	Waived[2]
Carbofuran	0.018	0.005	ND	6/2020	ND	-	TBD[1]	Waived[2]
Chlordane	0.0001	0.0001	NDs	6/2020	ND	-	TBD[1]	Waived[2]
2,4-D	0.07	0.01	NDs	6/2020	ND	-	TBD[1]	Waived[2]
Dalapon	0.2	0.1	ND	6/2020	ND	-	TBD[1]	Waived[2]
1,2-Dibromo-3-chloropropane (DBCP)	0.0002	0.00001	NDs - <0.0005[3]	6/2020	ND	-	TBD[1]	Waived[2].
Di (2-ethylhexyl) adipate	0.4	0.005	ND	6/2020	ND	-	TBD[1]	Waived[2]
Di (2-ethylhexyl) phthalate (DEHP)	0.004	0.003	ND	4/2018 7/2018 6/2020	ND ND ND	2 quarters in one year every 3 years	4/2021 7/2021	
Dinoseb	0.007	0.002	ND	6/2020	ND	-	TBD[1]	Waived[2]
Diquat	0.02	0.004	NDs	7/2011	ND	-	TBD[1]	Waived[2]
Endothall	0.1	0.045	ND	6/2020	ND	-	TBD[1]	Waived[2]
Endrin	0.002	0.0001	ND	6/2020	ND	-	TBD[1]	Waived[2]
Ethylene Dibromide (EDB)	0.00005	0.00002	NDs - <0.0005	6/2020	ND	-	TBD[1]	Waived[2].

Constituents	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due	
Glyphosate	0.7	0.025	NDs	6/2020	ND	-	TBD[1]	Waived[2]
Heptachlor	0.00001	0.00001	ND	6/2020	ND	-	TBD[1]	Waived[2]
Heptachlor Epoxide	0.00001	0.00001	ND	6/2020	ND	-	TBD[1]	Waived[2]
Hexachlorobenzene	0.001	0.0005	ND	6/2020	ND	-	TBD[1]	Waived[2]
Hexachlorocyclopentadiene	0.05	0.001	ND	6/2020	ND	-	TBD[1]	Waived[2]
Lindane	0.0002	0.0002	ND	6/2020	ND	-	TBD[1]	Waived[2]
Methoxychlor	0.03	0.01	ND	6/2020	ND	-	TBD[1]	Waived[2]
Molinate	0.02	0.002	ND	6/2020	ND	-	TBD[1]	Waived[2]
Oxamyl (Vydate)	0.05	0.02	ND	6/2020	ND	-	TBD[1]	Waived[2]
Pentachlorophenol	0.001	0.0002	ND	6/2020	ND	-	TBD[1]	Waived[2]
Picloram	0.5	0.001	ND	6/2020	ND	-	TBD[1]	Waived[2]
Polychlorinated Biphenyls (PCBs) (as decachlorobiphenyl)	0.0005	0.0005	ND	6/2020	ND	-	TBD[1]	Waived[2]
Simazine	0.004	0.001	NDs	6/2020	ND	-	TBD[1]	Waived[2]
Thiobencarb	0.07	0.001	NDs	6/2020	ND ND	-	TBD[1]	Waived[4]
Toxaphene	0.003	0.001	ND	6/2020	ND	-	TBD[1]	Waived[2]
1,2,3-Trichloropropane	0.000005	0.000005	NDs	6/2020	ND	2 quarters in one year every 3 years	2021	Initial monitoring completed in 10/2018.
2,3,7,8-TCDD (Dioxin)	$3x10^{-8}$	$5x10^{-9}$	ND	6/2020	ND	-	TBD[1]	Waived[2]
2,4,5-TP (Silvex)	0.05	0.001	ND	6/2020	ND	-	TBD[1]	Waived[2]

1 To be determined

2 Monitoring is waived during the first period (2020-2022) of the fourth compliance cycle (2020-2028).

7. TRIHALOMETHANES

Constituents	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring Information				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due	
Total Trihalomethanes	0.08	-	ND – 0.001	7/2020	ND	-	-	

8. UNREGULATED CHEMICALS WITH MONITORING REQUIREMENTS (Table 64450)

Monitoring for unregulated chemicals listed in the table below had been phased out in December 2003. However, if monitoring requirements were not met, the water systems were given the chance to complete the monitoring in December 2007. Monitoring consists of two consecutive samples five to seven months apart in a single year.

Constituents	NL[1] (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring Information				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due	
Boron[2]	1	0.10	0.10 -0.12	12/2001	0.12	-	-	
Vanadium[2]	0.05	0.003	NDs	12/2001	ND	-	-	
Dichlorodifluoromethane (Freon 12)[2]	1	0.0005	NDs	7/2020	ND	-	-	
Ethlyl-*Tert*-Butly Ether (ETBE)[3]	N/A	0.003	NDs	7/2020	ND	-	-	Waived.
Tert-Amyl Methyl Ether (TAME)[3]	N/A	0.003	NDs	7/2020	ND	-	-	Waived.
Tert-Butyl Alcohol (TBA)[3]	0.012	0.002	NDs	2/2008	ND	-	-	Waived.

1 NL – notification level

2 Monitoring requirement was completed.

3 Monitoring was waived if MTBE was non-detected.

9. OTHER UNREGULATED CHEMICALS WITH NOTIFICATION LEVELS

The following table provides for list of contaminants with notification levels. When concentrations are found greater than these levels, certain requirement and recommendations apply.

Constituents	NL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring Information				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due	
N-Butylbenzene	0.26	0.0005	NDs	7/2020	ND	-	-	
Sec-Butylbenzene	0.26	0.0005	NDs	7/2020	ND	-	-	
Tert-Butylbenzene	0.26	0.0005	NDs	7/2020	ND	-	-	
Carbon disulfide	0.16	0.0005	NDs	8/2006	ND	-	-	
Chlorate	0.8	-	-	-	-	-	-	No record.
2-Chlorotoluene	0.14	0.0005	NDs	7/2020	ND	-	-	
4-Chlorotoluene	0.014	0.0005	NDs	7/2020	ND	-	-	
Diazinon	0.0012	0.0012	NDs	6/2020	ND	-	-	
1,4-Dioxane	0.001	0.001	NDs - **0.0019**[1]	7/2020	ND	Quarterly	4th Quarter 2020	The last 4 samples were NDs.
Ethylene glycol	14	-	-	-		-	-	No record.
Formaldehyde	0.1	-	-	-	-	-	-	No record.
HMX	0.35	-	-	-	-	-	-	No record.
Isopropylbenzene	0.77	0.0005	NDs	7/2020	ND	-	-	
Methyl isobutyl ketone (MIBK)	0.12	0.005	NDs	7/2020	ND	-	-	
Naphthalene	0.017	0.0005	NDs	7/2020	ND	-	-	
N-Nitrosodiethyamine (NDEA)	0.00001	-	-	-	-	-	-	No record.
N-Nitosodimethlamine (NDMA)	0.00001	-	-	-	-	-	-	No record.
N-Nitrosodi-n-propylamine (NDPA)	0.00001	-	-	-	-	-	-	No record.
Propachlor	0.09	-	ND	6/2020	ND	-	-	
N-Propylbenzene	0.26	0.0005	NDs	7/2020	ND	-	-	
RDX	0.0003	-	-	-	-	-	-	No record.
1,2,4-Trimethylbenzene	0.33	0.0005	NDs	7/2020	ND	-	-	
1,3,5-Trimethlybenzene	0.33	0.0005	NDs	7/2020	ND	-	-	
2,4,6-Trinitrotoluene (TNT)	0.001	-	-	-	-	-	-	No record.

[1] Public notification is required.

10. OTHER PHASED-OUT UNREGULATED CHEMICALS

Table 64450 A Unregulated VOCs	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring Information				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due	
Bromobenzene	-	0.0005	NDs	7/2020	ND	-	-	
Bromodichlormethane (THM)	0.08	0.001	NDs	7/2020	ND	-	-	
Bromoform (THM)	0.08	0.001	NDs	7/2020	ND	-	-	
Bromomethane	-	0.0005	NDs	7/2020	ND	-	-	
Chlorodibromomethane (THM)	0.08	0.001	NDs	7/2020	ND	-	-	
Chloroethane	-	0.0005	NDs	7/2020	ND	-	-	
Chloroform (THM)	0.08	0.001	NDs	7/2020	ND	-	-	
Chloromethane	-	0.0005	NDs	7/2020	ND	-	-	
Dibromomethane	-	0.0005	NDs	7/2020	ND	-	-	
1,3-Dichlorobenzene	-	0.0005	NDs	7/2020	ND	-	-	
1,3-Dichloropropane	-	0.0005	NDs	7/2020	ND	-	-	
2,2-Dichloropropane	-	0.0005	NDs	7/2020	ND	-	-	
1,1-Dichloropropene	-	0.0005	NDs	7/2020	ND	-	-	
1,1,1,2-Tetrachloroethane	-	0.0005	NDs	7/2020	ND	-	-	

Table 64450 B	MCL	DLR	Concentration	Monitoring Information	REMARKS

Unregulated VOCs	(mg/L)	(mg/L)	Ranges (mg/L)	Last	Result (mg/L)	Frequency (Years)	Next Due	
Bromochloromethane	-	0.0005	NDs	7/2020	ND	-	-	
Hexachlorobutadiene	-	0.0005	NDs	7/2020	ND	-	-	
P-Isopropyltoluene	-	0.0005	NDs	7/2020	ND	-	-	
1,2,3-Trichlorobenzene	-	0.0005	NDs	7/2020	ND	-	-	

Table 64450 B Unregulated SOCs	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring Information				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due	
Bromacil	-	0.0005	ND	4/2018	ND	-	-	
Chlorothalonil	-	0.0005	ND	6/2020	-	-	-	
Dimethoate	-	0.0005	NDs	6/2020	ND	-	-	
Diuron	-	0.001	-	-	-	-	-	No record.
Phthalates	-	-	-	-	-	-	-	No record.
Plycyclic Acrylic Hydrocarbons (PAHs)	-	0.0005	-	-	-	-	-	No record.
Prometryn	-	0.0005	ND	6/2020	ND	-	-	
2,4,5-T	-	-	-	-	-	-	-	No record.

Table 64450 C Unregulated SOCs	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring Information				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due	
Aldrin	-	0.0005	ND	6/2020	ND	-	-	
Aldicarb	-	0.003	NDs	6/2020	ND	-	-	
Aldicarb Sulfone	-	0.004	NDs	6/2020	ND	-	-	
Aldicarb Sulfoxide	-	0.003	NDs	6/2020	ND	-	-	
Bromacyl	-	0.01	NDs	6/2020	ND	-	-	
Butachlor	-	0.0005	NDs	6/2020	ND	-	-	
Carbaryl	-	0.005	NDs	6/2020	ND	-	-	
Dicamba	-	0.0015	NDs	6/2020	ND	-	-	
Dieldrin	--	0.00002	ND	6/2020	ND	-	-	
3-Hydroxycarbofuran	-	0.003	NDs	6/2020	ND	-	-	
Methomyl	-	0.002	NDs	6/2020	ND	-	-	
Metribuzin	-	0.003	NDs	6/2020	ND	-	-	

11. OTHER CHEMICALS WITH MONITORING RECORDS

Table 64450 C Unregulated SOCs	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring Information				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due	
Cis-1,3-dichloropropene	-	0.0005	NDs	6/2020	ND	-	-	
Trans-1,3-Dichloropropoene	0.0005	0.0005	NDs	6/2020	ND	-	-	
M,P-xylene	1.7	0.0005	NDs	6/2020	ND	-	-	
M- Xylene	1.7	0.0005	NDs	7/2002	ND	-	-	
P-Xylene	1.7	0.0005	NDs	7/2002	ND	-	-	
O-xylene	1.7	0.0005	NDs	7/2020	ND	-	-	
Potassium	-	-	2.9 – 3.9	7/2020	3.2	-	-	
Paraquat	-	0.02	ND	7/2011	ND	-	-	
PCB – 1016	-	0.0005	NDs	6/2020	ND	-	-	
PCB – 1221	-	0.0005	ND	6/2020	ND	-	-	
PCB – 1232	-	0.0005	ND	6/2020	ND	-	-	
PCB – 1242	-	0.0005	NDs	6/2020	ND	-	-	
PCB – 1248	-	0.0005	NDs	6/2020	ND	-	-	
PCB – 1254	-	0.0005	NDs	6/2020	ND	-	-	
PCB - 1260	-	0.0005	NDs	6/2020	ND	-	-	
Source Temp C	-	-	17.4 – 22.6	10/2013	19.3	-	-	
Paraquat	-	0.020	NDs	7/2011	ND	-	-	

Table 64450 C Unregulated SOCs	MCL (mg/L)	DLR (mg/L)	Concentration Ranges (mg/L)	Monitoring Information				REMARKS
				Last	Result (mg/L)	Frequency (Years)	Next Due	
DCPA	-	0.001	ND - 0.002	6/2020	ND	-	-	
Bis (2-chloethyl) Ether	-	0.005	NDs	7/2001	ND	-	-	
Cis-1,3-Dichloropropene	-	0.0005	NDs	3/2016	ND	-	-	
Trans-1,3-Dichloropropene	0.0005	0.0005	NDs	3/2016	ND	-	-	
Diisoprophyl Ether	-	-	NDs -0.0035	6/2020	ND	-	-	
Hexachloroethane	-	0.005	NDs	8/2006	ND	-	-	
Langelier Index@source	-	-	0.135	11/1998	0.135	-	-	
Methyl Ethyl Ketone	-	0.005	NDs	6/2020	ND	-	-	
Nitrate, Nitrogen (NO_3-N)	10	0.40	ND	11/2007	ND	-	-	
2-Chloroethylvinyl Ether	-	0.001	NDs	4/2018	ND	-	-	
Radium 228 MBAS	-	-	0.394	7/2010	0.394	-	-	
Terbacil	-	-	<2	6/2020	<2	-	-	
Metolachlor	-	-	<1	6/2020	<1	-	-	
4,4-DDE	-	0.00005	ND	6/2020	ND	-	-	
EPTC	-	-	<0.0001	6/2020	<0.0001	-	-	
Prometon	-	-	<0.0001	6/2020	<0.0001	-	-	
2,4-DB	-	-	<0.002	6/2020	<0.002	-	-	
4,4-DDD	-	0.00002	ND	6/2020	ND	-	-	
4,4-DDT	-	0.00002	ND	6/2020	ND	-	-	
Aciflurifen	-	-	<0.0004	6/2020	<0.0004	-	-	
Alpha-BHC	-	0.00001	ND	6/2020	ND	-	-	
Beta-BHC	-	0.00005	ND	6/2020	ND	-	-	
Captan	-	0.0001	ND	6/2020	ND	-	-	
Carbophenothion	-	-	<0.0001	6/2020	<0.0001	-	-	

APPENDIX V

SATIVA WATER SYSTEM'S DISTRIBUTION SYSTEM CLASSIFICATION SHEET

Water System: Sativa Water System
System No. 1910147
Classification: **D2**

Distribution Classification

Date: October 2, 2020

Section 64413.3. Distribution System Classification
Table 64413.3-A

Population	Class
1,000 or less	D1
1,001 through 10,000	**D2**
10,001 through 50,000	D3
50,001 through 5 million	D4
Greater than 5 million	D5

Section 64413.3 (b) The class determined above shall be upgraded by one level if the sum of all points (1) through (6) below exceeds 20.
INSTRUCTIONS - For "system characteristics" that apply to your system, place the proper Point Value in the calculation box. For system characteristics (1) through (4) select one calculation only (whichever is higher). Total your calculations and adjust your system's classification if required.

System Characteristics	Point Value	Calculation
(1) Pressure Zones = 1 to 3	0	**0**
Pressure Zones = 4 to 10	4	
Pressure Zones = greater than 10	6	
(2) Single Disinfectant Added	5	**5**
Multiple Disinfectants*	8	
(3) Pump Station(s) up to 50 HP	4	
Pump Station(s) greater than 50 HP	6	**6**
(4) Distribution Reservoirs = 1 to 5	4	0
Distribution Reservoirs greater than 5	6	
(5) One or More Uncovered Reservoirs	10	
(6) Customers Served Non-Potable Water	6	
System Characteristics Total =		**11**

APPENDIX W

SATIVA WATER SYSTEM'S SUPERVISORY CONTROL AND DATA ACQUISITION SYSTEM NARRATIVE SHEET

Sativa SCADA Narrative

Sativa water system is a Hydro Pneumatic System which is automatically controlled based on customer demand.

Well 5 system major components:

- Well pump
- Variable Frequency Drive (VFD).
- CL2 Injection Pump
- CL2 Analyzer
- Supervisory Control and Data Acquisition (SCADA)
- Local controls with failsafe SCADA Off commands for both the well pump and the CL2 injection pump.

The Local control sequence is as follow:

- A Hand/Off/Auto (HOA) switch which is set on Auto. The Auto command activates a pressure switch adjusted to turn on at 52 PSI and turn off at 65 PSI.
- When the system is activated, the water lubrication for the pump shaft turns on, after 90 seconds, the pump VFD is activated and the well pump starts running.
- When the SCADA receives a signal that the well pump is running, a second timer is activated, after 60 seconds, the CL2 injection pump (Liquid 12.5%), Or the Gas CL2 circulating pump is turned on.
- The liquid CL2 pump has an analog input which is tied into the Banner node analog output signal. This signal uses the Speed of the well pump motor as a reference to decrease or increase the CL2 dosage.
- The Banner node communicates with the Banner gateway at the main Sativa office. This in turn communicates with the Modicon M340 Master PLC unit.
- The speed reference analog value internally of the master unit, either increases or decreases the dosage of the CL2 injector pump which has been set by the operator on SCADA.
- The SCADA can shut down the CL2 injection analog signal to 0, if the CL2 analyzer shows a reading above a set value of 2.5 PPM or higher.
- The VFD runs the well pump motor, uses a 65 PSI downstream pressure as a reference to control the pump motor speed, which changes the flow of water to match the demand of the system, and the CL2 injection pump will match the dosage to the pump motor speed.

- The Banner units act as communication links to tie the Modicon M340 to each site.

- The Modicon M340 PLC unit does convert the speed signal into a CL2 injector pump driver signal.
- The CL2 analyzer is completely independent of the system. It samples at 1 per minute. Yes, the Banner does take the signal from the Analyzer and sends it to the Modicon. The Signal is used as a failsafe for the CL2 injection pump, it will shut it off.

Important Notes and Failsafe System:

- Due to the fluctuations of the flow meter, this reference is not being used to drive the CL2 injection pump. As Demand on the system decreases, the speed of the motor will drop to slow to move water, as a safeguard, when the speed of the well pump motor runs at 1450 RPM's for more than 60 seconds, The Well goes into sleep mode. At this time, the CL2 is turned off, the Hydro tank supplies the low demand, and the system pressure will slowly drop. When the pressure in the system reaches 55 PSI, the well start up timer is reactivated, and the process is started all over again.
- There are Safeguards on the local controls. The VFD unit does use the Ground water depth to limit the speed of the well. The CL2 injection pump will not run until there is confirmation that the welling is running.

Well 3 system major components:

- Well pump
- CL2 Injection Pump
- CL2 Analyzer
- Supervisory Control and Data Acquisition (SCADA)
- Local controls with failsafe SCADA Off commands for both the well pump and the CL2 injection pump.

The Local control sequence is as follow:

- A Hand/Off/Auto (HOA) switch which is set on Auto. The Auto command activates a pressure switch adjusted to turn on at 50 PSI and turn off at 60 PSI.
- When the system is activated after 60 seconds, the pump is activated, and the well pump starts running.
- When the well is running a report, back is generated then a second timer is activated, after 60 seconds, the CL2 injection pump (Liquid 12.5%), Or the Gas CL2 circulating pump is turned on.
- The liquid CL2 pump has been set with manual controls to Chlorinate the system.
- The Banner node communicates with the Banner gateway at the main Sativa office. This in turn communicates with the Modicon M340 Master PLC unit.

- The SCADA can shut down the CL2 injection pump or well with the override off command.
- The Banner node communicates with the Banner gateway at the main Sativa office. This in turn communicates with the Modicon M340 Master PLC unit.
- There are limited safeguards on this well. The well runs at full speed when turned on, only the Lock out commands for the well and CL2 pump are on the list.

APPENDIX X

NO-DES FLUSHING OPERATION AND MONITORING PLAN FOR SATIVA WATER SYSTEM

APPENDIX ~~Y~~ X

NO-DES FLUSHING OPERATION AND MONITORING PLAN FOR SATIVA

Sativa Water District

NO-DES Flushing Operations and Monitoring Plan

The Sativa Water District (SWD) distribution system is comprised of approximately 15 miles of water mains 12-inch and smaller. The SWD has allocated funding to begin a system-wide unidirectional flushing (UDF) program for fiscal year 2018-19. Prior to beginning the flushing program, the SWD researched and evaluated two methods of UDF. The two methods evaluated were the traditional UDF and the Neutral Output Discharge Elimination System (NO-DES) technology. This plan is specific to the implementation of the NO-DES technology for the purpose of monitoring and ensuring water quality in the distribution system. Although the NO-DES standard operating procedures include procedures for boosting chlorine residuals within the distribution system, the SWA does not intend to do so.

Pre-connection Criteria

NO-DES Equipment shall be disinfected and sampled prior to initial connection to Authority distribution system (Refer to Section 1 pages 7-10 of the NO-DES SOP).

- ✓ Equipment shall be disinfected per AWWA Standard C651-14
- ✓ Bacti sample results shall show the absence of coliform bacteria (Colilert P/A test)*
- ✓ Heterotrophic Plate Count results will measure <500 CFU/ml*

*Results will be reviewed before connection to the Authority's distribution system

Day of Flushing Requirements

- ✓ Ensure new filtration bags are used
- ✓ Filtration unit and hoses are clean via swab and slug method
- ✓ Certified Distribution Operator (D3-D5)

Flushing Sequence Protocols

- ✓ Traditional unidirectional flushing will be required if the residual becomes too low (<0.5 ppm)
- ✓ Turbidity will be monitored and recorded throughout each flushing sequence
- ✓ Total chlorine, turbidity, and color samples shall be taken on the inlet and outlet of the filter with results recorded at the beginning and end of each flushing sequence
- ✓ Total chlorine shall be monitored using a pocket colorimeter
- ✓ Turbidity shall be monitored using an online turbidity nephelometer on the influent and effluent of the NO-DES equipment
- ✓ Distribution system pressure to be monitored to ensure distribution system maintains pressure between forty (40) psi and one hundred twenty (120) psi. If at any time fire flow is required, flushing activities shall cease until conditions improve.
- ✓ Each flushing sequence will be terminated when the inlet water turbidity is less than 5.0 NTU and the chlorine residual is, at a minimum, not less than 0.5 ppm

Additional Distribution Sampling After Flushing Sequence

Samples will be collected from the effluent side of the NO-DES system upon completion of each flushing sequence and recorded upon receiving results.

- ✓ Bacti - Results will be available when complete (24 hour turnaround time)
- ✓ Turbidity (field measurement)

- Hach 1720E with SC200 controller; calibrated weekly per manufactures standards.
- Logged on a flash drive at intervals no less than 10 minutes.

✓ Total/Free Chlorine Residual (field measurement)

- **<u>If at any time, water quality parameters fall below operating standards, Authority field personnel will flush the system until the water quality is back to the initial numbers or better.</u>**

Minimum Water Quality Standards

Parameter	Sample Location	Action --------->					
Turbidity >5 NTU	NO-DES Effluent	Continue flushing	Check filter differential pressure	Check filter condition/replace filters	If NO-DES flushing activities are unable to achieve target turbidity levels, perform traditional UDF		
Color >15 units	NO-DES Effluent	Continue flushing	Check filter differential pressure	Check filter condition/replace filters	If NO-DES flushing activities are unable to achieve target color levels, perform traditional UDF		
Total Chlorine <0.5 ppm	NO-DES Effluent	Determine ambient system residual	If ambient residual is <0.5 ppm, continue flushing	Check filter condition/replace filters	If NO-DES flushing activities are unable to achieve target residual, perform traditional UDF		
Total Coliform (+)	NO-DES Effluent	Resample a service connection nearest to flushing activity and two additional samples downstream.	If the repeat sample is total coliform (+), perform a traditional UDF and resample as in the previous column.	Repeat the previous two steps until the testing result is total coliform (-)			
E. Coli (+)	NO-DES Effluent	Take the NO-DES system offline.	**Notify DDW and prepare a boil water advisory (BWA) for the impacted area.**	Resample a service connection nearest to flushing activity and two additional samples downstream. To be completed on the same day that the Authority becomes aware of the E.coli (+).	If any of the repeat samples are E. coli (+) OR total coliform (+), the water main will be isolated and disinfected.	The water main will not be returned to service and the BWA will not be lifted until two sets of test results indicate the absence of total coliform and E.coli.	Disinfect the No-DES system per the "initial connection to the distribution system" procedures in the NO-DES Standard Operating Procedures (SOP manual).

Sativa Water District

NO-DES Flushing Report

Project Name: Sativa Water District													*Operators:*													*Week:*				
Run #	Date	QS#	Start Time	End Time	Total Run Time (Min)	Inlet Hydrant ID#	Outlet Hydrant ID#	Target Main Size/Type	Target Main Length (FT)	Target Flow (GPM)	Actual Flow (GPM)	Pump PSI MAX	System Pressure	Max Inlet Turbidity	Initial Turbidity	Final Turbidity	Filter #1 Start PSI dif	Filter #1 Stop PSI dif	# Runs on Filter #1	Filter #2 Start PSI dif	Filter #2 Stop PSI dif	# Runs on Filter #2	Change Filter? (1, 2, or N/A)	Inlet Intitial Color	Outlet Final Color	Inlet Initial CL2	Outlet Final CL2	Sample ID	Bacti Results P/A	Comments
Ex:	*12/22/19*	*147*	*7:32*	*7:56*	*24*	*FHC4509*	*FHC4589*	*8" AC*	*2501*	*1500*	*1358*	*70*	*75*	*2.1*	*1*	*0.4*	*7*	*11*	*2*	*4*	*8*	*2*	*1*	*10*	*2.5*	*1.3*	*1.6*	*1*	*P*	
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APPENDIX Y

CALIFORNIA ENVIRONMENTAL QUALITY ACT DOCUMENTATION

NOTICE OF EXEMPTION

To:	From:
__ Office of Planning and Research PO Box 3044, Room 113 Sacramento, CA 95812 – 3044 state.clearinghouse@opr.ca.gov X County Clerk County of Los Angeles 12400 Imperial Highway Norwalk, CA 90650	Los Angeles County Public Works 900 S. Fremont Avenue Alhambra, CA 91803

PROJECT TITLE: Liquid Sodium Hypochlorite Disinfectant Systems for Groundwater Wells

PROJECT APPLICANT: Los Angeles County Public Works

PROJECT LOCATION – Specific: Sativa Water System is a community public water system serving service connections in the Willowbrook and Compton communities. The wells involved in this project are located at 13320 S Willowbrook Ave (Well 3) and 2083 Stockwell St (Well 5), Compton, CA 90222.

PROJECT LOCATION – City: County unincorporated area (Willowbrook) | **PROJECT LOCATION – County:** Los Angeles

DESCRIPTION OF NATURE, PURPOSE, AND BENEFICIARIES OF PROJECT: This project includes replacing existing chlorine gas disinfectant systems with safer liquid chlorine disinfectant systems near two groundwater wells in the Sativa Water System.

NAME OF PUBLIC AGENCY APPROVING PROJECT: Los Angeles County Public Works

NAME OF PERSON OR AGENCY CARRYING OUT PROJECT: Los Angeles County Public Works

EXEMPT STATUS:

_____ Ministerial (Sec. 21080(b)(1); 15268).
_____ Declared Emergency (Sec 21080(b)(3); 15269(a))
_____ Emergency Project (Sec 21080(b)(4); 15269(b)(c))
__X__ Categorical Exemption: State type and section number: CEQA § 15302(c)
_____ Statutory Exemption. State code number: _____

1. **REASONS WHY PROJECT IS EXEMPT:**
The proposed project is exempt from CEQA per Section 15302(c). The exemptions provide for replacement of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced, including replacement of existing utility systems involving negligible or no expansion of capacity.

LEAD AGENCY CONTACT PERSON: Bing Hua **AREA CODE/TELEPHONE/EXTENSION:** (626) 300-3337

IF FILED BY APPLICANT:

1. Attach certified document of exemption finding.
2. Has a notice of exemption been filed by the public agency approving the project? __X__ Yes ___ No

Signature: _____ **Date:** 9/28/2020 **Title:** Associate Civil Engineer
__X__ **Signed by Lead Agency**
_____ **Signed by Applicant**

Authority cited: Section 15302, California Code of Regulations. Date Received for filing at OPR: _____

THIS NOTICE WAS POSTED
ON October 15 2020
UNTIL November 16 2020
REGISTRAR – RECORDER/COUNTY CLERK

2020 163623
FILED
Oct 15 2020
Dean C. Logan, Registrar – Recorder/County Clerk
Electronically signed by MAXINE CARRASCO

April 2019

This is a true and certified copy of the record
if it bears the seal, imprinted in purple ink,
of the Registrar-Recorder/County Clerk

OCT 26 2020

Dean C. Logan REGISTRAR-RECORDER/COUNTY CLERK
LOS ANGELES COUNTY, CALIFORNIA

Environmental Concurrence for CEQA Exempt Projects
Water Supply Permits
State Water Resource Control Board
Division of Drinking Water

Water System Number:	CA1910147	**Lead Agency:**	LOS ANGELES WATERWORKS DISTRICTS
Water System Name:	SATIVA-LACWD	**Date NOE Filed:**	08/24/2020
County:	LOS ANGELES	**State Clearinghouse #:**	

Project Title: OPERATION OF LIQUID CHLORINE SYSTEM AT SATIVA-LAC WATERWORKS DISTRICTS
Project Location (Address, City): 2015 EAST HATCHWAY STREET, COMPTON
Project Description: MODIFICATION OF DISINFECTANT SYSTEM AT SATIVA WELL 3 AND 5 FROM GAS TO LIQUID

CEQA Exemptions: Check all exemptions the project meets per California Code of Regulations Title 14, Division 6, Chapter 3:

☐ **Article 19, Section 15301: Class 1 Existing Facilities**	Operation, repair, maintenance and/or minor alteration of an existing structure
☒ **Article 19, Section 15302: Class 2 Replacement or Reconstruction**	Replacement or reconstruction of an existing structure where the new or replacement structure is located on the same site
☐ **Article 19, Section 15303: Class 3 New Construction or Conversion of Small Structures**	Construction or remodification of a limited number of new or existing small structures
☐ **Article 19, Section 15304: Class 4 Minor Alteration to Land**	Minor alteration to the condition of land, water and or vegetation with no negative impact to existing scenic trees
☐ **Article 19, Section 15306: Class 6 Information Collection**	Basic data collection and research with no disturbance to an environmental resource
☐ **Article 18, Section 15262: Feasibility and Planning Studies**	A project involving only feasibility or planning studies
☐ **Article 18, Section 15269: Emergency Projects**	A project that is deemed an emergency as described in Section 15269
☐ **Other**	Provide Section number and description:

Exceptions to NOE: Please mark box indicating whether statement applies.
If you mark "yes" then the NOE does not apply – call your District Office.

Yes	No	
☐	☒	Location – Is the project located in a particularly sensitive environment where location exception applies? (for class 3,4,6)
☐	☒	Cumulative Impact – Will there or have there been successive projects of the same type in the same place, and over time it is becoming environmentally significant?
☐	☒	Significant Effect – Is there a reasonable possibility that the project will have a significant effect on the environment due to unusual circumstances?
☐	☒	Scenic Highway – Could the project cause damage to the environment within a highway officially designated as a state scenic highway?
☐	☒	Hazardous Waste Site – Is the project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code?
☐	☒	Historical Resources – Could the project cause a substantial adverse change in the significance of a historical resource?

I certify to the best of my knowledge the information in this form is correct, the project is exempt from CEQA, and it will not result in any significant effect on the environment:

Water System Representative:

Print:	Signature:	Date:
SAM KABAR		11-2-2020

The State Water Board concurs with the water system's CEQA determination listed above:

Division of Drinking Water District Engineer:

Notice of Exemption

To:
Office of Planning and Research
P.O. Box 3044, Room 113
Sacramento, CA 95812-3044

From:
State Water Resources Control Board
Division of Drinking Water
Angeles District, 500 North Central Avenue, #500
Glendale CA 91203
Shu-Fang Orr
Phone: (818) 551-2045

Lead Agency: Los Angeles County Public Works

Lead Agency Contact: Sami Kabar

Lead Agency Phone Number: (626) 300-3338

State Clearinghouse Number:

Project Title: Sativa Water System - New Sodium Hypochlorite Chlorination Systems for Wells 3 and 5 (Project)

Project Address: 13320 S. Willobrook Avenue (Well 3) and 2083 Stockwell Street (Well 5), Compton, CA 90222

Project Description:

The project involves replacement of existing gas chlorinations systems at Wells 3 and 5 of Sativa Water System (System No. 1910147) with 12.5 percent sodium hypochlorite chlorination systems.

Name of Public Agency Approving Project: State Water Resources Control Board (State Water Board)

This is to advise that the State Water Board has issued a domestic water supply permit for the described Project on 12/16/2020. A record of approval for the Project is available to the general public at the State Water Board, Division of Drinking Water District Office noted above.

Exempt Status:

Categorical Exemption(s)

California Code of Regulations, Title 14, Division 6, Chapter 3, Article 19, Section 15302: Class 2. Replacement or Reconstruction.

Reasons why project is exempt:

The proposed project is exempt from CEQA per Section 15302, Class 2. The exemption provides for replacement of existing structures (gas chlorinations systems) where the new structure (12.5 percent sodium hypochlorite chlorination systems) will be installed on the same sites (Well 3 and 5 sites).

Signature: Date: 12/16/20

Name: Shu-Fang Orr Title: District Engineer

Authority cited: Sections 21083 and 21110, Public Resources Code. Reference: Sections 21108, 21152, and 21152.1, Public Resources Code.

Date Received for filing at Office of Planning and Research:

Revised 2020

State Water Resources Control Board
Division of Drinking Water

September 30, 2022

Mr. Gregory Galindo
Vice President Field Operations
Suburban Water Systems
2015 E. Hatchway Street
Compton, CA 90222

Dear Mr. Galindo:

SYSTEM NO. 1910147: SATIVA WATER SYSTEM SANITARY SURVEY (2022)

This letter is to advise the Suburban Water Systems (Suburban WS), on behalf of Los Angeles County (LA County), of the findings during the recent Sanitary Survey of the domestic water supply system of Sativa Water System (Sativa). The survey consists of the review of water system files and water quality monitoring records, and a field inspection. Eight elements evaluated during this sanitary survey include:

1) Source
2) Treatment (Disinfection only)
3) Distribution system
4) Finished water storage (hydro-pneumatic tanks only)
5) Pumps, pump facilities, and controls
6) Monitoring, reporting, and data verification
7) System management and operation
8) Operator compliance with state requirements

The last sanitary survey was conducted in December 2019 and last full domestic water supply permit was issued by the Division of Drinking Water (Division) on December 23, 2020 to LA County. In June 2021, the LA County contracted with Suburban WS to operate Sativa water system. Beginning July 1, 2021, Suburban WS has been operating the Sativa water system. On August 18, 2022, Ms. Ofelia Oracion, a sanitary engineer with the Division met with you, Mr. Sami Kabar of LA County, Mr. Ken Reich, Ms. Sandy Nimat and Mr. Michael Rodriguez of Suburban WS, and other LA County and Suburban WS staff. You all assisted Ms. Oracion during her field inspection of the sources (Wells 3 and 5), chlorination facilities, hydro-pneumatic tanks, sampling stations, among others.

In addition to the Sanitary Survey, Ms. Oracion is working on a revised full permit to document the change of ownership of Sativa from the LA County to Suburban WS. On August 13, 2021, Suburban WS filed an application seeking authorization from the California Public Utilities Commission (CPUC) to purchase Sativa from LA County. The application was posted on CPUC's calendar on August 18, 2021. No protests or responses were received. The

application was approved on April 7, 2022. The decision authorizing the purchase of Sativa by Suburban WS was issued on April 15, 2022. The permit engineering report will be issued to Suburban WS soon.

Overall, the Division finds that Sativa's water system is being operated and maintained satisfactorily by Suburban WS. The facilities were clean and orderly. The Suburban WS has adequate number of certified operators to operate the Sativa water system. The following paragraphs summarize issues/deficiencies noted during the 2022 survey which require your attention:

Water System Facilities

1. Table 1 summarizes the water system facility deficiencies noted during the field inspection.

1: List of Water System Facility Deficiencies

Facilities	Deficiencies	Recommendations
Site 3 Facilities: • Well 3 (Active) *Backup Source* • Hydropneumatic Tanks (2 units) • Sodium Hypochlorite Chlorination System	Well 3 • The well is 78 years old and may be reaching the end of its useful life. It has history of sand pumping. The well has no annular seal.	• Evaluate the integrity of this well to determine the next step (rehabilitate, drill a replacement well, or obtain another source of supply).
	Hydro-pneumatic Tanks • The two pressure vessels are due for inspection. The last inspection and cleaning were performed in 2011.	• Schedule to perform professional inspections.
Site 5 Facilities: • Well 5 (Active) *Currently Offline* • Hydropneumatic Tank • Sodium Hypochlorite Chlorination System	Well 5 • The well produces water with elevated level of manganese.	• Continue the Well 5 Manganese Treatment Facility Project.
	Hydro-pneumatic Tank • The pressure vessel is due for inspection. The last inspection and cleaning were performed in 2011.	• Schedule to perform professional inspection.
Service Connections	• All service connections are not metered.	• Plan to install water meters to all service connections to encourage conservation.
Distribution System Facilities	Old and Undersized Water Mains • The distribution system is composed of undersized and old pipes. The pipes have legacy sediments. The sediments are occasionally released during hydraulic	• Plan to replace undersized and old pipes. Prioritize based on the hydraulic evaluation outcome, to resolve system pressure and fire flow issues.

Facilities	Deficiencies	Recommendations
	disturbances such as changing in flow direction or velocity, causing discolored water.	
	Dead ends • The distribution system has 10 dead-ends.	• Plan to eliminate dead ends by construction of connecting pipes.

The above deficiencies are the same deficiencies identified in the 2019 Sanitary Survey. Please provide the Division with the timeline to address and correct these deficiencies.

2. Well 2 has been inactive since July 2017 and cannot be utilized as a water supply source. The well was removed from service in December 2015 due to the detection of *E. Coli*. Because this well cannot be activated, the well must be properly destroyed. Suburban WS must plan to destroy the well to prevent the well from becoming a conduit of groundwater contamination. Please provide the Division with the timeline to properly destroy this well.

3. Sativa water system has no storage facility to provide reserve for emergency conditions. The hydropneumatic tanks are pressure maintenance facilities and do not provide much of storage capacity. It cannot be counted on for firefighting. In addition, facilities without backup storage may lose system pressure in the event of power outage. Suburban WS has included in their five-year improvement plan the construction of storage facility for Sativa. The engineering plans and specifications for the proposed storage facility should be submitted to the Division for reviews and approval prior to construction.

Permits

4. Full Permit. On July 8, 2022, the Division received from Suburban WS via emails the permit application for the change of ownership of Sativa, from LA County to Suburban WS, along with the TMF documentations. The documents are currently being reviewed. The Division may need additional information in the future from Suburban WS to complete the permit investigation.

5. Permit Amendment. Well 5 was removed from service in October 2020 due to elevated level of manganese exceeding the secondary MCL of 50 ppb. The LA County, in collaboration with the Water Replenishment District of Southern California (WRD), has proposed to install a manganese treatment facility for Well 5. In April 2021, the Division received the 60 percent engineering plans and specifications for the proposed treatment facility. The plans and specifications were prepared by Tetra Tech. The Division has reviewed the documents and comments were provided via email on April 23, 2021. In February 2022, the 100 percent plans and specifications were submitted to the Division by LA County. On March 23, 2022, a meeting between representatives of LA County and the Division was virtually conducted. During the meeting, the Division provided LA County with additional comments.

   Please note that the proposed treatment facility cannot be placed into service until a permit amendment is issued to Sativa. **The engineering plans and specifications must be re-submitted to the Division for further reviews and approval**. To process the permit, the following documents must be submitted to the Division:

- Permit Amendment Application
- Operation, Monitoring and Maintenance Plan
- NSF International/American National Standard Institute (NSF/ANSI) Standard 60 certifications for direct additives and Standard 61 certifications for indirect additives (chemicals, materials, lubricants, protective materials, pipe and related products, mechanical devices, etc.) that will result in its contact with the drinking water, including process media.
- Completed Filtration Data Sheet
- CEQA Documentation

Please provide the Division with a status update of this project.

Water Quality Monitoring

6. The Title 22 Water Quality Monitoring Review Sheets in Enclosure 1 summarize water quality monitoring records reported to the Division up to July 30, 2022 for Sativa's active wells (Wells 3 and 5). The constituents requiring more frequent monitoring (raw water) include:

   - Manganese. Well 5 produces water with elevated level of manganese exceeding the secondary MCL of 50 ppb. The highest manganese concentration was 340 ppb from a sample collected in October 2020. The running annual average (RAA) for manganese was exceeded during the first, second and third quarters of 2021. The last sample with manganese concentration exceeding the secondary MCL was in January 2022 with result of 54 ppb.

     Well 5 was last sampled for manganese in July 2022 with result of 16 ppb. The RAA in July 2022 was 33.6 ppb. Because manganese concentration in the well water fluctuates and the well remains active, Well 5 must be monitored at least quarterly.

     Manganese is not detected in Well 3. The manganese monitoring frequency for the well must be at least once every three years. Wells 3 and 5 are sampled monthly for manganese.

   - PCE and TCE. Wells 3 and 5 withdraw water from the Central Basin with a known PCE and TCE plume. The wells must be monitored for these constituents quarterly. The wells are detected for PCE but the concentrations are below the MCL of 5 ppb. TCE has not been detected in the wells.

   - 1,4-Dioxane. 1,4-Dioxane concentrations in Wells 3 and 5 exceed the notification level of 1 ppb. The wells are sampled for 1,4-dioxane quarterly. After the initial notification of the governing body (in this case Los Angeles Board of Supervisors and CPUC), Sativa should notify the governing body of these exceedances periodically. Please provide the Division with a copy of the last notice.

7. About 75 percent of Sativa's distribution pipelines are asbestos cement pipes. The water system is required to collect one sample at a tap served by asbestos cement pipe, under conditions where asbestos contamination is most likely to occur, during the first period of the nine-year compliance cycle and analyze the sample for asbestos. The last asbestos sample was collected in June 2011 (first period of 2011 – 2019 compliance cycle). The result was non-detect. The next round of asbestos monitoring must be completed by December 31, 2022 (first period of 2020 – 2028 compliance cycle).

Operation and Maintenance

8. The Sativa Water System has a valve maintenance program that was established in 2015. The goal is to exercise all valves yearly. By the end of 2020, there were 214 valves in the distribution system with sizes ranging from 4 to 8 inches. In 2021, no additional valves were installed. Table 2 summarizes the valve exercising records for the period of 2012 through 2021.

Table 2: Valve Exercising Records (2012 – 2021)

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total Number of Valves	97	109	109	111	111	111	181	194	214	214
Total Number Exercised	97	36	95	111	111	111	12	194	214	0

Source: 2012-2021 eARs

Ideally, all valves should be exercised every year. As shown in the above table, all valves were exercised in 2015, 2016, 2017, 2019 and 2020, except in 2018 when only 12 out of 181 valves were exercised. In 2021, none of the 241 valves were exercised. In the 2021 eAR, the frequency of valve exercising was reported to be on as needed basis instead of yearly. Suburban WS should exercise all valves on a yearly basis. By March 30, 2023, all valves must be exercised, and report submitted to the Division.

9. Sativa water system has 10 dead-ends in the distribution system reported in the 2020 and 2021 eARs. Out of the 10 dead-ends, four are equipped with blow-off valves and rest are with the fire hydrants. So far, all the 10 dead-ends are flushed on a monthly basis. The Division recommends eliminating as many dead-ends as possible by looping the system. Table 3 summarizes the water system's flushing activities.

Table 3: Dead-Ends Flushing Records (2012 – 2021)

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total Number of Dead-Ends	6	7	7	7	5	5	8	11	10	10
Total Number Flushed	6	7	7	7	5	5	8	11*	10*	10*

Source: 2012-2021 eARs

*From 2019 through 2021, all dead-ends were flushed monthly.

Please indicate your intention in addressing the above issues in writing within 15 days of receipt of this letter.

Information Request

1. The enclosed data sheets (Enclosure 2) for the wells, disinfection facilities, hydropneumatics tanks and distribution system have been updated based on the field inspection findings and the information provided by Suburban WS. Please check if the information contained in the data sheets is accurate. Please make corrections, if necessary, and submit the corrected/updated data sheets as soon as possible.

Climate Change Impact

The effects of extreme weather on community water system facilities and operations are a concern and priority of the SWRCB, which is documented by the SWRCB in its Comprehensive Climate Change Resolution No. 2017-12, adopted in March 2017. The Division is reviewing each water system's level of resiliency and preparedness for changing climate conditions and extreme weather increase awareness to the potential effects to facilities and operations.

Beginning with the eAR in 2017, community water systems were asked to identify their vulnerabilities in the eAR, and rank them as either high, medium, or low sensitivity, and proposed or implemented projects to prepare for the impacts from climate change each year. LA County PW did provide responses to these questions. In the 2021 eAR, the Sativa water system facilities were identified to be vulnerable (medium sensitivity) to groundwater depletion due to drought and peak demand volume surges due to extreme heat and high temperature during the summer. The water system has implemented, or is considering implementing, the following projects to address current identified needs and which also reduce the impacts to these vulnerabilities:

- Install new and deeper drinking water wells or modify existing wells to increase pump capacity (Completed - Well 5 rehabilitation)
- Develop local supplemental water supply, enhanced treatment, or increased storage capacity (Plan to Implement – Well 5 Manganese Treatment Facility)
- Interconnection with other utilities (Completed – Liberty Utilities Interconnection)
- Relocate facilities, construct, or install facilities (Plan to Implement)
- Conservation measures (Plan to Implement)
- Fire prevention (Plan to Implement)
- Alternative or backup energy supply (Completed)
- Enhance monitoring program, budget for additional testing and treatment, chemicals (Plant to Implement)

The Division strongly encourages utilities to evaluate infrastructure and operational vulnerabilities to extreme weather and other emergency conditions using tools such as the USEPA's Climate Resilience Evaluation and Awareness Tool (CREAT) and engaging in a conversation both within the water system's organization and with customers on how to plan and prepare for being resilient to provide clean and safe water reliably and adequately under all current and future conditions. Please check USEPA website at the link below to obtain more information.

https://www.epa.gov/crwu/climate-resilience-evaluation-and-awareness-tool-creat-risk-assessment-application-water

The courtesy extended to Ms. Oracion during her field visit is greatly appreciated. If you have any questions, please contact Ms. Oracion at (818) 551-2020.

Sincerely,

Jeff O'Keefe, P.E.
Southern California Section Chief

Enclosures (2)

CC: Mr. Sami Kabar
Area Manager, Waterworks Division
Los Angeles County Department of Public Works

Ms. Sandy Nimat, MPA
Water Quality Manager
Suburban Water Systems

Mr. Ken Reich
Manager, Quality Assurance Reporting
Suburban Water Systems

From: Joon Young Jang
To: Jorge Lopez
Subject: Re: Treatment Plant Cost Estimate
Date: Thursday, December 15, 2022 10:32:06 AM
Attachments: image003.png

Hi Jorge,

Sorry for the delayed response. I believe that would be paid by Suburban as part of the cost above the grant amount.

Joon Jang, P.E.
Senior Mechanical Engineering Assistant
Los Angeles County Public Works
(626) 300-3371

From: Jorge Lopez <jlopez@swwc.com>
Date: Monday, December 12, 2022 at 15:06
To: Joon Young Jang <JJang@dpw.lacounty.gov>
Subject: RE: Treatment Plant Cost Estimate

Joon,

Who is responsible for the $225,000 for bidding and construction assistance?

Jorge Lopez, P.E.
Vice President, Engineering | Suburban Water Systems
1325 N. Grand Avenue, Suite 100 | Covina, CA 91724-4044
Phone 626.543.2518 | Fax 626.331.4848 | E-mail jlopez@swwc.com
Visit us at www.swwc.com/suburban/

Please consider the environment before printing.

From: Joon Young Jang <JJang@dpw.lacounty.gov>
Sent: Monday, December 12, 2022 8:10 AM
To: Jorge Lopez <jlopez@swwc.com>
Subject: RE: Treatment Plant Cost Estimate

Hi Jorge,

Of the $2,250,000 total grant amount, there is $1,860,000 in the grant for construction. So using the latest cost estimate of $3,430,000, Suburban would pay approximately $1,570,000.
Tetra Tech's design costs came out to about $180,000, which is covered by the grant.
I don't believe the County will have any overhead costs that will be added, but the new contract with Tetra Tech for bidding & construction assistance will be an estimated $225,000 which is not covered by the grant.
Please let me know if you have any additional questions. Thank you.

Joon Jang, P.E.
Senior Mechanical Engineering Assistant
Los Angeles County Public Works
Office: (626) 300-3371
Mobile: (302) 220-9503

From: Jorge Lopez <jlopez@swwc.com>
Sent: Friday, December 9, 2022 5:50 AM
To: Joon Young Jang <JJang@dpw.lacounty.gov>
Subject: RE: Treatment Plant Cost Estimate

One more thing. Does LA County have additional overhead costs that will be added to the project?

Jorge Lopez, P.E.
Vice President, Engineering | Suburban Water Systems
1325 N. Grand Avenue, Suite 100 | Covina, CA 91724-4044
Phone 626.543.2518 | Fax 626.331.4848 | E-mail jlopez@swwc.com
Visit us at www.swwc.com/suburban/

Please consider the environment before printing.

From: Jorge Lopez
Sent: Friday, December 9, 2022 5:48 AM
To: Joon Young Jang <JJang@dpw.lacounty.gov>
Subject: RE: Treatment Plant Cost Estimate

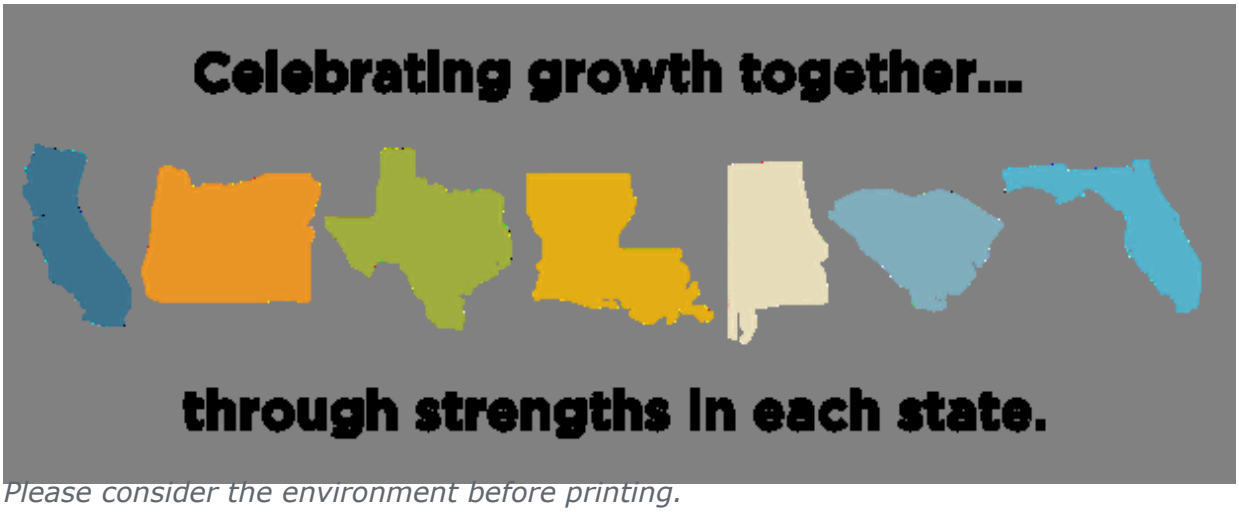
Thanks Joon,

I'm trying to figure out the amount that Suburban will need to pay above and beyond the grant amount.

Do you know Tetra Tech's costs? Can you confirm that the grant is covering Tetra Tech's cost?

Please let me know if you have any questions.

Jorge Lopez, P.E.
Vice President, Engineering | Suburban Water Systems
1325 N. Grand Avenue, Suite 100 | Covina, CA 91724-4044
Phone 626.543.2518 | Fax 626.331.4848 | E-mail jlopez@swwc.com
Visit us at www.swwc.com/suburban/



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From: Joon Young Jang <JJang@dpw.lacounty.gov>
Sent: Thursday, December 8, 2022 3:25 PM
To: Jorge Lopez <jlopez@swwc.com>
Subject: Re: Treatment Plant Cost Estimate

Hi Jorge,

Yes, that is the latest cost estimate.

Joon Jang, P.E.
Senior Mechanical Engineering Assistant
Los Angeles County Public Works
(626) 300-3371

From: Jorge Lopez <jlopez@swwc.com>
Date: Thursday, December 8, 2022 at 15:23
To: Joon Young Jang <JJang@dpw.lacounty.gov>
Subject: Treatment Plant Cost Estimate

Good Afternoon, Joon,

Is this the latest cost estimate for the Sativa Treatment Plant?

Jorge Lopez, P.E.
Vice President, Engineering | Suburban Water Systems
1325 N. Grand Avenue, Suite 100 | Covina, CA 91724-4044
Phone 626.543.2518 | Fax 626.331.4848 | E-mail jlopez@swwc.com
Visit us at www.swwc.com/suburban/

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LA County Dept of Public Works / Water Replenishment District
Sativa Well #5 Treatment Project
100% Submittal - Engineer's Opinion of Probable Construction Cost
Summary Sheet
Date: 02/17/2022

Item Description	Subtotal	Totals
Greensand Filter System		**$ 768,000**
Greensand Pressure Vessel, Valves, Pipes, BR Pump, BR Appurtenances	$ 572,000	
Surface Wash Pump	$ 9,000	
Backwash Recycle Tank - bolted steel	$ 88,000	
Air Compressor Package	$ 9,000	
Piping and Equipment Finish Painting	$ 26,000	
Excavation	$ 4,000	
Fill	$ 2,000	
Concrete and Reinforced Steel	$ 58,000	
Product Water Booster System		**$ 238,000**
48,000 bolted steel tank	$ 106,000	
Booster Pumps - 750 gpm	$ 35,000	
Piping and Equipment Finish Painting	$ 29,000	
Excavation	$ 3,000	
Fill	$ 1,100	
Concrete and Reinforced Steel	$ 64,000	
Chemical Feed Systems		**$ 160,000**
Sodium Hypochlorite XLPE Storage Tank with Ladder and Level Sensor	-	Not part of this bid
Sunshade	$ 56,000	
SHC Metering Pumps - skid mounted	$ 77,000	
Static Mixer	$ 14,000	
Eyewash/Shower	$ 3,000	
Excavation	$ 700	
Fill	$ 300	
Concrete and Reinforced Steel	$ 9,000	
Sound Enclosure		**$ 41,000**
PW Booster Pumps Sound Enclosure	$ 41,000	
Yard Piping		**$ 379,000**
Pipe, Fittings and Valves	$ 309,000	
Connect to Existing Piping System	$ 12,000	
Connect to Existing Sewer	$ 12,000	
Pipe Supports	$ 46,000	

LA County Dept of Public Works / Water Replenishment District
Sativa Well #5 Treatment Project
100% Submittal - Engineer's Opinion of Probable Construction Cost
Summary Sheet
Date: 02/17/2022

Item Description	Subtotal	Totals
Paving, Grading, Drainage, & Sitework		**$ 61,000**
Remove and Dispose Existing Pressure Tank	$ 11,000	
Site Improvements	$ 30,000	
Pre-cast Concrete Structures	$ 20,000	
Site Electrical and Utility Power		**$ 751,000**
Electrical Equipment, Controls, Conduit, Wiring, Panels	$ 630,000	
Lighting	$ 12,000	
Miscellaneous	$ 40,000	
Programming and Testing	$ 69,000	
Total Direct Cost		$ 2,398,000
Contractor's Overhead and Profit	15%	Included in Subtotal
General Requirements, Bonding, Ins.	3%	$ 72,000
Bidding Climate	30%	$ 720,000
Contingency	5%	$ 120,000
Mobilization and Demobilization (5% of Total Direct Cost)	5%	$ 120,000
Total		**$ 3,430,000**