



BRACEWELL ENGINEERING, INC.

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January 10, 2022

Mr. Eric Lacy
State Water Resources Control Board-Division of Drinking Water
850 Marina Bay Parkway, Building P, 2nd Floor
Richmond, CA 94804

Re: December 2021 Monthly Report to the Office of Drinking Water
La Honda Water System (County Service Area No. 7), No. W4100509

Dear Mr. Lacy:

Attached are the monitoring report, the Coliform Reporting Form, and the Monthly Summary of Monitoring for Surface Water Treatment Regulations for the La Honda Water System.

Disinfection Byproducts

The quarterly disinfection byproducts monitoring was completed and the TTHM running annual average of 59.3 ug/L was in compliance with its MCL of 80 ug/L and the HAA5 running annual average of 34.8 ug/L was in compliance with its MCL of 60 ug/L.

Chlorine residuals were maintained as required. Turbidity levels did not exceed 0.3 NTU when treating water for domestic use. The minimum disinfection CT ratio was 2.0 for a DDW required 1-log removal for Giardia.

Please do not hesitate to contact me if you have any questions.

Respectfully submitted,
BRACEWELL ENGINEERING, INC.

Lloyd W. Bracewell, PhD., RCE
Water System Engineer

cc: San Mateo County, CSA #7
BEI Office

WATER SYSTEM MONITORING REPORT

La Honda Water System (CSA No. 7)
 555 County Center, 5th Floor
 Redwood City, CA 94063
 System No. 4100509

Water Resources Control Board
 Division of Drinking Water
 850 Marina Bay Parkway, Bldg P
 Richmond, CA 98804

Station: Test: Units: Type: Frequency: Date	Finish Wtr FLOW gal/day calculated daily	Finish Wtr TEMP deg C grab weekly	Finish Wtr PH std units grab weekly	Finish Wtr CL2 RESID mg/L continuous daily	ContctPipe CT VALUE min-mg/L calculated daily	Finish Wtr CT REQUIRD min-mg/L calculated daily	ContctPipe CT RATIO ratio calculated daily	Finish Wtr TURBIDITY NTU continuous daily	Raw Water TURBIDITY NTU continuous daily	Finish Wtr TRB/PH/CL2 initials calib check weekly
12/01/21	32450	15.9	7.96	1.27	35.77	18.2	2.0	0.04	0.50	
12/02/21	32450	13.2	7.71	2.48	69.85	22.3	3.1	0.04	0.34	
12/03/21	0									
12/04/21	0									
12/05/21	0									
12/06/21	37600	13.2	7.93	2.61	73.51	24.3	3.0	0.04	1.48	KB
12/07/21	37600	13.2	7.89	2.38	67.04	23.6	2.8	0.04	0.75	
12/08/21	37600	13.2	7.73	2.35	66.19	22.3	3.0	0.04	0.43	
12/09/21	0									
12/10/21	0									
12/11/21	0									
12/12/21	0									
12/13/21	0									
12/14/21	0									
12/15/21	37100	9.7	7.71	2.14	60.28	27.8	2.2	0.05	0.41	KB
12/16/21	0									
12/17/21	0									
12/18/21	0									
12/19/21	0									
12/20/21	48000	12.6	7.47	2.21	62.25	21.0	3.0	0.05	5.54	KB
12/21/21	26900	12.6	7.73	2.19	61.68	23.0	2.7	0.04	3.89	
12/22/21	26900	12.6	7.43	2.12	59.71	20.6	2.9	0.05	2.94	
12/23/21	0									
12/24/21	0									
12/25/21	0									
12/26/21	0									
12/27/21	0									
12/28/21	0									
12/29/21	0									
12/30/21	0									
12/31/21	50033	11.7	7.47	1.73	48.73	21.6	2.3	0.04	7.76	
Average:	11827	12.8	7.70	2.15	60.50	22.5	2.7	0.04	2.40	
High:	50033	15.9	7.96	2.61	73.51	27.8	3.1	0.05	7.76	
Low:	0	9.7	7.43	1.27	35.77	18.2	2.0	0.04	0.34	
Total:	366633									
Method:		SM2550B	SM4500-H+ B	SM4500-C1 G				SM2130B	SM2130B	
Limit1:				mn d >= 0.20		mn d >= 1.0	mx d <= 0.3			
Over/Total:				0/10		0/10	0/10			

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 Division of Drinking Water
 850 Marina Bay Parkway, Bldg P
 Richmond, CA 98804

Station:	Raw Water	Raw Water	Raw Water	APN 240070	APN 240070	APN 240070	APN 240070	01dC12Sta	01dC12Sta	01dC12Sta	01dC12Sta
Test:	SAMPL TYPE	COLIFORM	E. COLI	SAMPL TYPE	COLIFORM	E. COLI	CL2 RESID	SAMPL TYPE	COLIFORM	E. COLI	CL2 RESID
Units:	TYPE	MPN/100mL	MPN/100mL	TYPE	pres./abs.	pres./abs.	mg/L	TYPE	pres./abs.	pres./abs.	mg/L
Type:	observation	grab	grab	observation	grab	grab	grab	observation	grab	grab	grab
Frequency:	as needed	monthly	monthly	Mar/May/Oct	Mar/May/Oct	Mar/May/Oct	Mar/May/Oct	Apr/Jun/Nov	Apr/Jun/Nov	Apr/Jun/Nov	Apr/Jun/Nov
Date											
12/01/21				due 03/22	due 03/22	due 03/22	due 03/22	due 04/22	due 04/22	due 04/22	due 04/22
12/02/21											
12/03/21											
12/04/21											
12/05/21											
12/06/21											
12/07/21	Other	241.5	5.2								
12/08/21											
12/09/21											
12/10/21											
12/11/21											
12/12/21											
12/13/21											
12/14/21											
12/15/21											
12/16/21											
12/17/21											
12/18/21											
12/19/21											
12/20/21											
12/21/21											
12/22/21											
12/23/21											
12/24/21											
12/25/21											
12/26/21											
12/27/21											
12/28/21											
12/29/21											
12/30/21											
12/31/21											
Average:		241.5	5.2								
High:		241.5	5.2								
Low:		241.5	5.2								
DL/RL:		1.0/1.0	1.0/1.0								
Method:		SM9223 B-18	SM9223 B-18		SM9223B-18	SM9223B-18	SM4500-C1 G		SM9223B-18	SM9223B-18	SM4500-C1 G
Limit1:					mx d < 1	mx d < 1	mn d >= 0.05		mx d < 1	mx d < 1	mn d >= 0.05
Over/Total:					0/0	0/0	0/0		0/0	0/0	0/0

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Station:	251 PescCr	251 PescCr	251 PescCr	251 PescCr	460 Pescdr	460 Pescdr	460 Pescdr	460 Pescdr	Raw Water	TreatedWtr
Test:	SAMPL TYPE	COLIFORM	E. COLI	CL2 RESID	SAMPL TYPE	COLIFORM	E. COLI	CL2 RESID	ALUMINUM	ALUMINUM
Units:	TYPE	pres./abs.	pres./abs.	mg/L	TYPE	pres./abs.	pres./abs.	mg/L	ug/L	ug/L
Type:	observation	grab	grab	grab	observation	grab	grab	grab	grab	grab
Frequency:	Jul/Dec	Jul/Dec	Jul/Dec	Jul/Dec	Jan/Aug	Jan/Aug	Jan/Aug	Jan/Aug	every 12 mo	every 3 mo
Date					due 01/22	due 01/22	due 01/22	due 01/22	due 07/22	due 02/22
12/01/21										
12/02/21										
12/03/21										
12/04/21										
12/05/21										
12/06/21										
12/07/21	Routine	Absence	Absence	2.19						
12/08/21										
12/09/21										
12/10/21										
12/11/21										
12/12/21										
12/13/21										
12/14/21										
12/15/21										
12/16/21										
12/17/21										
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12/24/21										
12/25/21										
12/26/21										
12/27/21										
12/28/21										
12/29/21										
12/30/21										
12/31/21										
Average:		0	0	2.19						
High:		0	0	2.19						
Low:		0	0	2.19						
DL/RL:									10/5	10/5
Method:		SM9223B-18	SM9223B-18	SM4500-C1 G		SM9223B-18	SM9223B-18	SM4500-C1 G	EPA 200.8	EPA 200.8
Limit1:		mx d < 1	mx d < 1	mn d >= 0.05		mx d < 1	mx d < 1	mn d >= 0.05		
Over/Total:		0/1	0/1	0/1		0/0	0/0	0/0		

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Station:	400 Ranch	400 Ranch	400 Ranch	400 Ranch	LaHondaRd	LaHondaRd	LaHondaRd	LaHondaRd
Test:	SAMPL TYPE	COLIFORM	E. COLI	CL2 RESID	SAMPL TYPE	COLIFORM	E. COLI	CL2 RESID
Units:	TYPE	pres./abs.	pres./abs.	mg/L	TYPE	pres./abs.	pres./abs.	mg/L
Type:	observation	grab	grab	grab	observation	grab	grab	grab
Frequency:	Feb/Sep	Feb/Sep	Feb/Sep	Feb/Sep	as needed	as needed	as needed	as needed

Date	due 02/22	due 02/22	due 02/22	due 02/22
12/01/21				
12/02/21				
12/03/21				
12/04/21				
12/05/21				
12/06/21				
12/07/21				
12/08/21				
12/09/21				
12/10/21				
12/11/21				
12/12/21				
12/13/21				
12/14/21				
12/15/21				
12/16/21				
12/17/21				
12/18/21				
12/19/21				
12/20/21				
12/21/21				
12/22/21				
12/23/21				
12/24/21				
12/25/21				
12/26/21				
12/27/21				
12/28/21				
12/29/21				
12/30/21				
12/31/21				

Average:
 High:
 Low:

Method:	SM9223B-18	SM9223B-18	SM4500-C1 G	SM9223B-18	SM9223B-18	SM4500-C1 G
Limit1:	mx d < 1	mx d < 1	mn d >= 0.05	mx d < 1	mx d < 1	mn d >= 0.05
Over/Total:	0/0	0/0	0/0	0/0	0/0	0/0

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Station:	LHW	LHW	Raw Water	Raw Water	Raw Water	TreatedWtr	Raw Water
Test:	OPERATOR	ACTIONS	PH	ALKALINITY	IRON	IRON	NITRATE-N
Units:	units	comments	std units	mg/L-CaCO3	ug/L	ug/L	mg/L
Type:	observation	observation	grab	grab	grab	grab	grab
Frequency:	as needed	as needed	weekly	as needed	every 3 mo	every 3 mo	every 3 mo
Date							
12/01/21					due 02/22	due 02/22	due 01/22
12/02/21							
12/03/21							
12/04/21							
12/05/21							
12/06/21	KB		8.14				
12/07/21							
12/08/21							
12/09/21							
12/10/21							
12/11/21							
12/12/21							
12/13/21							
12/14/21							
12/15/21	KB		8.40				
12/16/21							
12/17/21							
12/18/21							
12/19/21							
12/20/21	KB		8.25				
12/21/21							
12/22/21							
12/23/21							
12/24/21							
12/25/21							
12/26/21							
12/27/21							
12/28/21							
12/29/21							
12/30/21							
12/31/21	KB						
Average:			8.26				
High:			8.40				
Low:			8.14				
DL/RL:				3/2	20/20	20/10	0.030/0.40
Method:			SM4500-H+ B	SM2320B	EPA 200.8	EPA 200.8	SM4500-N03 D
Limit1:							mx d <= 10
Over/Total:							0/0

Monthly Summary of Monitoring For Surface Water Treatment Regulations

System Name: La Honda Water System (CSA #7)

System Number: 4100509

Treatment Plant Name: La Honda Water System (CSA #7)

Month: December Year: 2021

Treated Water Turbidities Every Four Hours (NTU)*

Date	Peak Raw Water Turbidity	Peak Settled Water Turbidity	Midnight to 0400	0400 to 0800	0800 to Noon	Noon to 1600	1600 to 2000	2000 to Midnight	Average Treated Water	Minimum Ct. Ratio
1	0.50				0.04	0.04	0.03	0.03	0.04	2.0
2	0.34		0.03	0.03	0.04				0.03	3.1
3										
4										
5										
6	1.48					0.04	0.04	0.03	0.04	3.0
7	0.75		0.03	0.03	0.04	0.04	0.04	0.04	0.04	2.8
8	0.43					0.03	0.03	0.03	0.03	3.0
9										
10										
11										
12										
13										
14										
15	0.41					0.04	0.04		0.04	2.2
16										
17										
18										
19										
20	5.54					0.04	0.04	0.04	0.04	3.0
21	3.89		0.04	0.04	0.04	0.04	0.04	0.04	0.04	2.7
22	2.94		0.04	0.05	0.04				0.04	2.9
23										
24										
25										
26										
27										
28										
29										
30										
31	7.76						0.04	0.04	0.04	2.3
Ave.	2.40								0.04	

*If a continuous monitoring turbidimeter is used, determine discrete turbidity value for the same times during each 24-hour period

Total No. of Samples: 35 No. of Readings ≤ 0.3 NTU: 35

% Readings ≤ 0.3 NTU = [(No. Readings ≤ 0.3 NTU) / (Total No. Samples)] x 100 = 100%

Meets Standard (i.e. more than 95% of readings are ≤ 0.3 NTU) (Y/N)? Y

Percent reduction during the month = $\frac{[(\text{Average Raw NTU} - \text{Average Effluent NTU})]}{(\text{Average Raw NTU})} \times 100 =$ 98%

Meets Standard (i.e. reduction is greater than 80%) (Y/N)? Y

95th Percentile Value of all turbidity readings (95% of all turbidity readings are less than this value): 0.040

Incidents of turbidity greater than 1.0 NTU

Date of Incident				
Value				
Duration				

Total Number of incidents where turbidity is > 1.0 NTU: 0
 Total Number of incidents where turbidity is > 5.0 NTU: 0
 Meets Standards (i.e. NTU is not > 1.0 for more than eight consecutive hours) (Y/N)? Y

After placing a filter back into service after any interruption (e.g. backwashing), did the filter effluent comply with the following criteria:

- a. < 2.0 NTU after all events (Y/N)? Y
- b. < 1.0 NTU after 90% of events (Y/N)? Y
- c. < 0.5 NTU after 4 hours (Y/N)? Y

Indicate the date that the turbidimeters that are used for regulatory monitoring purposes were calibrated

Date	Which Turbidimeter	Standard used (primary/secondary)	Date	Which Turbidimeter	Standard Used (primary/secondary)
5/17/2019	Hach, raw wtr	0/20 Formazin	5/17/2019	Hach, treated	0/20 Formazin
7/15/2019	Hach, raw wtr	0/20 Formazin	7/15/2019	Hach, treated	0/20 Formazin
10/17/2019	Hach, raw wtr	0/20 Formazin	10/17/2019	Hach, treated	0/20 Formazin
4/3/2020	Hach, raw wtr	0/20 Formazin	4/3/2020	Hach, treated	0/20 Formazin
7/2/2020	Hach, raw wtr	0/20 Formazin	7/2/2020	Hach, treated	0/20 Formazin
10/28/2020	Hach, raw wtr	0/20 Formazin	10/28/2020	Hach, treated	0/20 Formazin
1/29/2021	Hach, raw wtr	0/20 Formazin	1/29/2021	Hach, treated	0/20 Formazin
4/22/2021	Hach, raw wtr	0/20 Formazin	4/22/2021	Hach, treated	0/20 Formazin
7/28/2021	Hach, raw wtr	0/20 Formazin	7/28/2021	Hach, treated	0/20 Formazin
10/27/2021	Hach, raw wtr	0/20 Formazin	10/27/2021	Hach, treated	0/20 Formazin

Disinfection Process Data

Disinfectant residual type: free chlorine: X combined chlorine: _____ other (specify) _____

Incidents of chlorine residuals less than 0.2 ppm at the plant effluent:

Date of Incident				
Duration				
Date Dept. Notified				

Total number of incidents where residual is < 0.2 ppm: 0
 Meets standard (i.e. not less than 0.2 ppm for more than four hours) (Y/N)? Y

No. of distribution system residual samples collected:	2
No of distribution system samples for HPC only:	
Total No. residual and/or HPC samples collected:	2
No. of samples with no detectable residual and HPC is not measured:	0
No. of samples with no residual and HPC > 500 CFU/ml:	
No. of samples for HPC only and HPC > 500 CFU/ml:	
Total No. Samples with no residual and/or HPC > 500 CFU/ml:	0

Compute V where $V = [1 - (\text{Total number of samples with no residual and/or HPC} > 500) / (\text{Total number of residual and/or HPC samples collected})] \times 100 =$ 100%

Meets Standard (i.e V > 95%) (Y/N) Y

**Quarterly Report for Disinfectant Residuals Compliance
For Systems Using Chlorine or Chloramines**

System Name: La Honda Water System (CSA #7) System No.: 4100509

Calendar Year: 2021 Quarter: 4


1st Quarter			
Month	Number of Samples Taken	Monthly Ave. Chlorine Level (mg/L)	
7/12/2010	April	0.36	
	May	0.31	
	June	0.12	
	July	1.01	
	August	1.16	
	September	0.69	
	October	0.53	
	November	1.41	
	December	0.23	
	Current Year	January	1
		February	11
		March	1
Running Annual Average (RAA):		0.64	
Meets standard? (i.e. RAA ≤ MRDL of 4.0 mg/L as Cl ₂)		Yes	

2nd Quarter		
Month	Number of Samples Taken	Monthly Ave. Chlorine Level (mg/L)
Previous Year	July	1.01
	August	1.16
	September	0.69
	October	0.53
	November	1.41
	December	0.23
Current Year	January	0.12
	February	0.54
	March	1.14
	April	1
	May	1
	June	16
Running Annual Average (RAA):		0.89
Meets standard? (i.e. RAA ≤ MRDL of 4.0 mg/L as Cl ₂)		Yes

3rd Quarter		
Month	Number of Samples Taken	Monthly Ave. Chlorine Level (mg/L)
Previous Yr	October	0.53
	November	1.41
	December	0.23
Current Year	January	0.12
	February	0.54
	March	1.14
	April	1.94
	May	1.08
	June	0.81
	July	1
	August	1
	September	1
Running Annual Average (RAA):		0.90
Meets standard? (i.e. RAA ≤ MRDL of 4.0 mg/L as Cl ₂)		Yes

4th Quarter		
Month	Number of Samples Taken	Monthly Ave. Chlorine Level (mg/L)
Current Year	January	0.12
	February	0.54
	March	1.14
	April	1.94
	May	1.08
	June	0.81
	July	0.56
	August	1.00
	September	1.45
	October	2
	November	1
	December	1
Running Annual Average (RAA):		1.10
Meets standard? (i.e. RAA ≤ MRDL of 4.0 mg/L as Cl ₂)		Yes

Comments:

Signature: 

Date: 1/10/2022

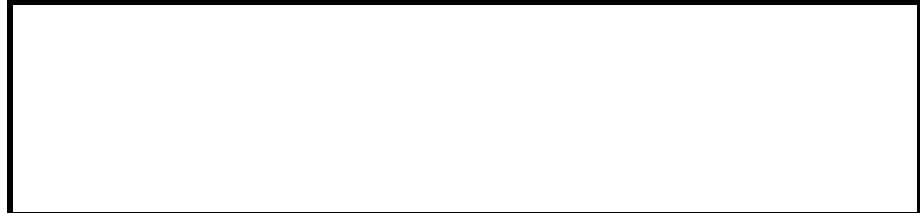
Quarterly TTHM Report for Disinfection Byproducts Compliance (in µg/L or ppb)

System Name: La Honda Water System (CSA #7) System No.: 4100509 Year: 2021 Quarter: 4

Year:	2017				2018				2019				2020				2021			
Quarter:	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Sample Date (month/date):	3/13	6/15	9/25	12/13	3/26	6/13	9/12	12/19	3/5	6/19	9/11	12/17	3/10	6/9	9/8	12/1	3/1	6/14	9/8	12/7
Site 1	86.0	38.7	142.1	98.3	123.4	96.1	56.8	135.1	79.5	62.5	115.2	104.6	61.2	40.0	39.0	67.0	38.0	71.0	53.0	75.1
Quarterly Average	86.0	38.7	142.1	98.3	123.4	96.1	56.8	135.1	79.5	62.5	115.2	104.6	61.2	40.0	39.0	67.0	38.0	71.0	53.0	75.1
Running Annual Average	77.7	79.8	90.2	91.3	100.6	115.0	93.6	102.8	91.8	83.5	98.1	90.5	85.9	80.3	61.2	51.8	46.0	53.8	57.3	59.3
Meets Standard (80 ug/L)?*	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Number of Samples Taken	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Identify the sample locations in the table below.

Site	Sample Location
1	Old Chlorination Station
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	



Signature *Lloyd W. Brumwell* Date 1/10/2022

*If, during the first year of monitoring, any individual quarter's average will cause the running annual average of that system to exceed the standard, then the system is out of compliance at the end of that quarter.


Quarterly HAA5 Report for Disinfection Byproducts Compliance (in µg/L or ppb)

System Name: La Honda Water System System No.: 4100509 Year: 2021 Quarter: 4

Year:	2017				2018				2019				2020				2021			
Quarter:	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Sample Date (month/date):	3/13	6/15	9/25	12/13	3/26	6/13	9/12	12/19	3/5	6/19	9/11	12/17	3/10	6/9	9/8	12/1	3/1	6/14	9/8	12/7
Site 1	66.1	25.0	71.0	40.0	45.6	61.2	24.6	45.9	46.0	44.3	64.0	83.5	101.6	69.0	29.0	32.0	25.0	55.0	19.0	40.0
Site 1 Sample																				
Site 3																				
Site 4																				
Site 5																				
Site 6																				
Site 7																				
Site 8																				
Site 9																				
Site 10																				
Site 11																				
Site 12																				
Quarterly Average	66.1	25.0	71.0	40.0	45.6	61.2	24.6	45.9	46.0	44.3	64.0	83.5	101.6	69.0	29.0	32.0	25.0	55.0	19.0	40.0
Running Annual Average	41.5	42.1	53.0	50.5	45.4	54.5	42.9	44.3	44.4	40.2	50.1	59.5	73.4	79.5	70.8	57.9	38.8	35.3	32.8	34.8
Meets Standard (60 µg/L)?*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes
Number of Samples Taken	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Identify the sample locations in the table below.

Site	Sample Location
1	Old Chlorination Station
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	



 Signature Date 1/10/2022

*If, during the first year of monitoring, any individual quarter's average will cause the running annual average of that system to exceed the standard, then the system is out of compliance at the end of that quarter.