TRAVELERS STATION

PROJECT APPENDICES:

- 1. Hydrological Report
- 2. Water Testing Results
- 3. Traffic Impact Analysis
- 4. Preliminary Biological Assessment
- 5. Geotechnical / Soils Evaluation
- 6. Septic / Percolation Test Results
- 7. Greenhouse Gas Analysis
- 8. Cultural Resource Evaluation
- 9. Project Site Photo
- **10.** Architectural Plans / Elevations

TRAVELERS STATION:

Hydrological Report

Kelley Engineering & Surveying

June, 2021

HYDROLOGIC AND HYDRAULIC CALCULATIONS

JOB No. 19019 San Benito Traveler's Station PLN 200017 San Benito County, CA

June 2021



6/22/2021

KELLEY

ENGINEERING & SURVEYING 400 PARK CENTER DR, STE #4, HOLLISTER, CA 95023 OFFICE: (831) 636-1104 FAX (831) 636-1837

Introduction

Site Location:

The site is located east of Searl Road at its north end, south of Highway 129, and west of the 101 on-ramp.

Site Description:

Existing topography can be described as a pear-shaped basin that falls north to south with an average slope of 0.8 percent. Embankment slopes from Searl Road vary from 6:1 to 3.5:1. The ground slopes away from the 101 on-ramp into the site at a range of 2% to 6%.

There are no existing drainage facilities on-site, but there are culverts that terminate just outside the property to the south.

Proposed Project Description:

The project is a fuel station and fast food restaurant serving motorists and diesel trucks traveling along the 101 and 129 corridors.

Existing Drainage System

Characteristics:

The existing drainage system consists of overland sheet flow and shallow concentrated flow from north to south leading to a number of ditches and culverts within Caltrans' jurisdiction that carry runoff in a counter-clockwise route back to the north where is confluences with tributaries to the Pajaro River.

Proposed Drainage System

On-site drainage is conveyed to a detention pond via sheet flow, curb & gutter, valley gutter, catch basins and storm pipes.

Hydrologic Method:

The SCS unit-hydrograph method is used to calculate peak flows for use in sizing the drainage facilities, and to develop the 10-year predevelopment peak flow. In accordance with the County Subdivision Ordinance, post development runoff is limited to this 10-year predevelopment rate during a 100-year storm event. Storm events are simulated by the SCS unit hydrograph procedure provided in HydroCAD 10 storm water modeling software. Pond routing is accomplished by the Storage-Indication method also provided in HydroCAD 10. Rainfall depths used in the calculations are from the San Benito County Subdivision Ordinance.

Storm Frequencies Analyzed:

In accordance with Section 1.1, Chapter 3 of the County Subdivision Ordinance all on-site closed conduit systems and minor channel sections are designed with a capacity sufficient to handle the 10-year storm event. Detentions ponds are designed to accommodate the 100-year storm event. Allowable discharge for developed areas is limited to the 10-year pre-development rate.

Proposed Flow Patterns:

As the existing ground slopes north to south so does the finish grade. Storm waters are conveyed to a detention pond located at the south end of the site via sheet flow, curb & gutter, valley gutter, catch basins and storm pipes.

Hydraulic Controls for Drainage Outfall:

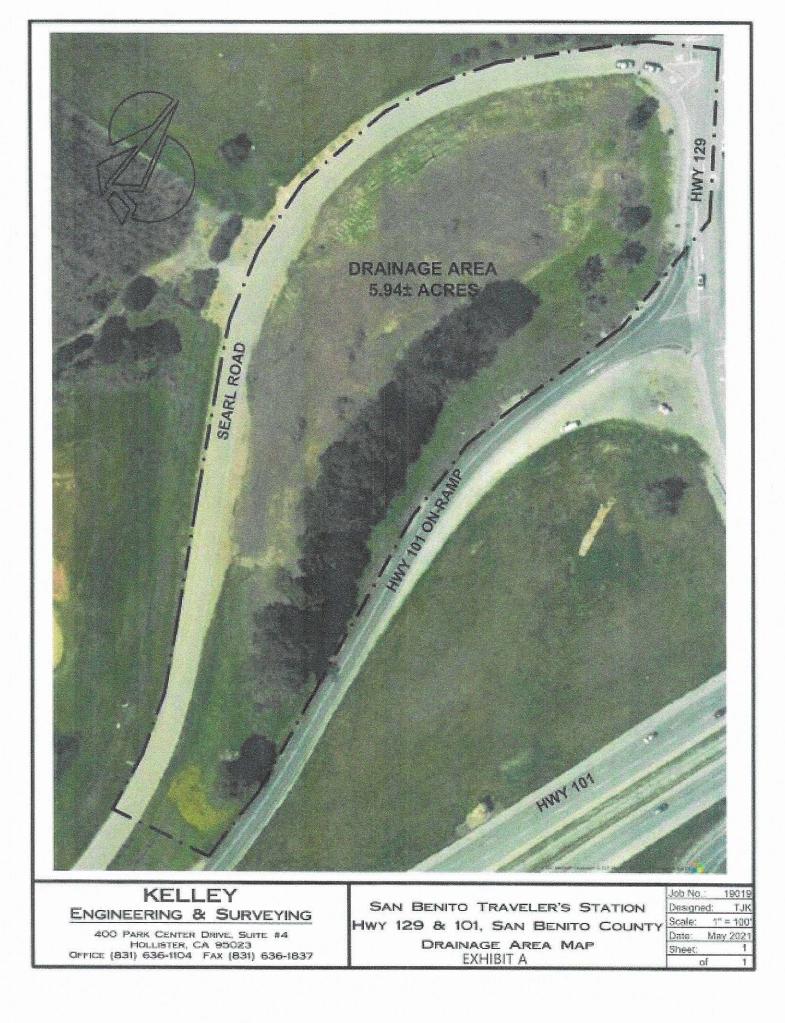
The outlet of the pond is a sharp crested weir. The weir releases storm flows into an earthen ditch that leads to an existing culvert located south of the property line.

Conclusions

All on-site runoff is directed to the on-site detention pond located at the south end of the site. The shape of the basin is trapezoidal and measures roughly 40 feet wide at the south end, 60 feet wide at the north end and spans roughly 164 feet. Pond capacity is just over 26,000 cubic feet. The impact of the development is a net increase in rainfall runoff. This net increase is mitigated by attenuating the 100-year post-development storm to the level of a 10-year pre-development storm. This is accomplished by routing the storm through a detention pond. The calculations in exhibit C-1 show that the 10-year pre-developed runoff is 4.21 CFS. The 100-year post developed runoff is calculated to be 10.81 CFS and is shown on exhibit D-1. When this 100-year post-developed storm is routed through the detention pond the result is a peak runoff release at the rate of 4.17 CFS as shown on exhibit E-1.

Attachments

- A Drainage Area Map
- B Rainfall Volume Calculations
- C-1 Pre-developed Runoff Summary 10-year event
- C-2 Pre-developed Runoff Hydrograph 10-year event
- D-1 Post-developed Runoff Summary 100-year event
- D-2 Post-developed Runoff Hydrograph 100-year event
- E-1 Post-developed Results Summary 100-year event
- E-2 Post-developed Results Hydrograph 100-year event.
- E-3 Post-developed Results Tabulated Hydrograph 100-year event



KELLEY ENGINEERING & SURVEYING	SHEETNO.	0F
400 Park Center Drive, Suite #4 Hollister, CA 95023		DATE 5/21/202
831-636-1104/Fax 831-636-1837	CHECKED BY	DATE
SBC VOLUME	The second statement of	
TC = ~ 19 MW.	SHALLOW	TT S=0.0078
MAP= 18"	FIGUE	63-1
10 YEAR INTENSINY	3	
0.6× 1.8= 1.08"/HR	FIGU	e 3-2
IDD YEARS INTENSITY		,
0.9×1.8= 1.62 /HR	FIGU	LE '3-2
VOLUME		
10 YEAR	FIGU	LE 3-5
1		
100 VENIL 1.09×2.22× 1.8=4.36 IN	FIGU	ke 3-5

Summary for Subcatchment 3S: Predeveloped

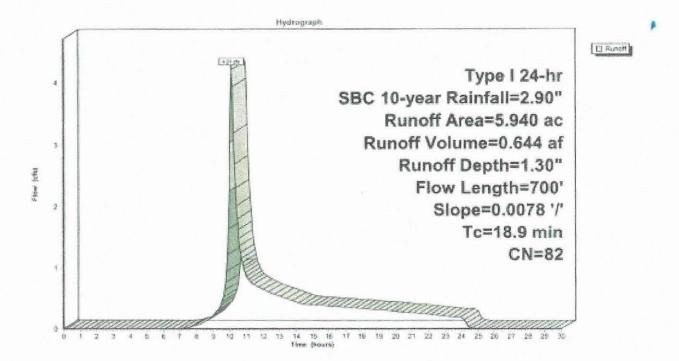
Runoff = 4.21 cfs @ 10.12 hrs, Volume= 0.644 af, Depth= 1.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs Type I 24-hr SBC 10-year Rainfall=2.90"

10000	Area	(ac)	CN	Desc	ription		
4		020 920	98 79		1 Road, Po 5% Grass	ortion 129 cover, Fair,	, HSG C
Links	4	940 920 020	82	82.8	ghted Aver 3% Pervio 7% Imperv	us Area	
	Tc (min)	Lengt (feel		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	18.9	70	0 0.	0078	0.62		Shallow Concentrated Flow, Shallow Concentrated Flow Short Grass Pasture Kv= 7.0 fps

Subcatchment 3S: Predeveloped

Printed 5/21/2021



Prepared by Kelley Engineering & Surveying HydroCAD® 10.00-25 s/n 05395 © 2019 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: Proposed Developemnt

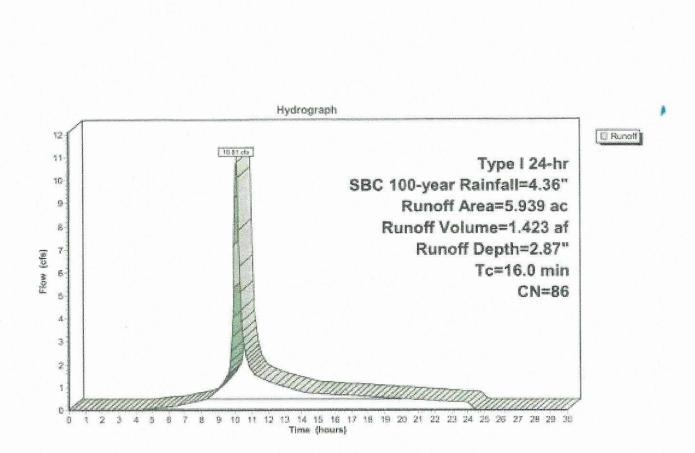
Runoff = 10.81 cfs @ 10.08 hrs, Volume= 1.423 af, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs Type I 24-hr SBC 100-year Rainfall=4.36"

Area	(ac)	CN	Desc	ription		
2.	987	74	>75%	6 Grass co	over, Good,	, HSG C
2	952	98	Pave	d parking.	HSG C	
2	.939 .987 .952	86	50.2	ghted Aver 9% Pervio 1% Imperv		
Tc (min)	Lengt (fee		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0						Direct Entry, Direct Entry - Minimum TC

Subcatchment 1S: Proposed Developemnt

Printed 5/21/2021



19019 preliminary pond design

Prepared by Kelley Engineering & Surveying HydroCAD® 10.00-25 s/n 05395 © 2019 HydroCAD Software Solutions LLC

Summary for Pond 2P: Proposed Pond

 Inflow Area =
 5.939 ac, 49.71% Impervious, Inflow Depth =
 2.87" for SBC 100-year event

 Inflow =
 10.81 cfs @
 10.08 hrs, Volume=
 1.423 af

 Outflow =
 4.20 cfs @
 10.37 hrs, Volume=
 1.076 af, Atten= 61%, Lag= 17.6 min

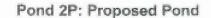
 Primary =
 4.20 cfs @
 10.37 hrs, Volume=
 1.076 af

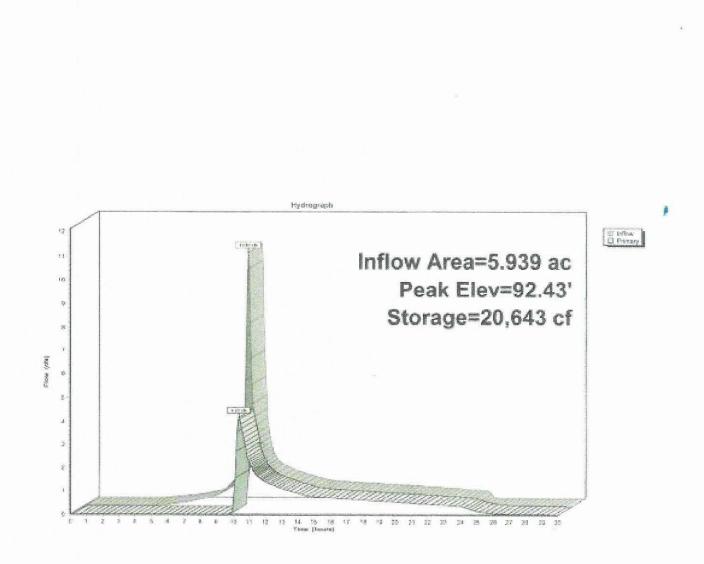
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 92.43' @ 10.37 hrs Surf.Area= 8,616 sf Storage= 20,643 cf

Plug-Flow detention time= 242.1 min calculated for 1.074 af (76% of inflow) Center-of-Mass det. time= 117.9 min (902.7 - 784.8)

Volume	Invert	Avail.	Storage	Storage Description	1		
辞1	88.00*	2	6,014 cf	Custom Stage Dat	a (Irregular) Listed	l below (Recalc)	
Elevation (feet)		f.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	-terms
88.00		51	30.0	0	0	51	
89.00		2,275	272.0	889	889	5,869	
90.00		5,350	439.0	3,705	4,593	15,324	
91.00		6,189	494.0	5,764	10,358	19,434	
92.00		7,492	813.0	6,830	17,188	52,619	
93.00	4	0,232	921.0	8,826	26,014	67,547	
Device Ro	outing	Inv	ert Outl	et Devices			
#1 Pr	imary	91.'	100 C	0 deg x 1.0' long x.1 2.48 (C= 3.10)	1.25' rise Sharp-Cr	ested Vee/Trap Weir	

Primary OutFlow Max=4.17 cfs @ 10.37 hrs HW=92.43' (Free Discharge) 1=Sharp-Crested Vee/Trap Weir (Weir Controls 4.17 cfs @ 2.33 fps)





 19019 preliminary pond design
 Type I 24-I

 Prepared by Kelley Engineering & Surveying
 HydroCAD® 10.00-25 s/n 05395 © 2019 HydroCAD Software Solutions LLC

Hydrograph for Pond 2P: Proposed Pond

Time	Inflow	Storage	Elevation	Primary
(hours)	(cfs)	(cubic-feet)	(feet)	(cfs)
0.00	0.00	0	88.00	0.00
1.00	0.00	0	88.00	0.00
2.00	0.00	0	88.00	0.00
3.00	0.00	0	88.00	0.00
4.00	0.00	0	88.00	0.00
5.00	0.06	91	88.38	0.00
8.00	0.13	438	88.75	0.00
7.00	0.26	1,117	89.10	0.00
8.00	0.41	2,342	89.50	0.00
9.00	0.94	4,570	90.00	0.00
10.00	9.23	12,976	91.41	0.00
11.00	1.74	19,028	92.24	2.27
12.00	1.27	18,085	92.12	1.40
13.00	1.03	17,714	92.07	1.11
14.00	0.81	17,411	92.03	0.90
15.00	0.73	17,191	92.00	0.76
16.00	0.69	17,103	91.99	0.71
17.00	0.64	17,027	91.98	0.66
18.00	0.60	16,951	91.97	0.62
19.00	0.55	16.874	91,96	0.58
20.00	0.51	16,794	91.95	0.53
21.00	0.46	16,703	91,93	0.49
22.00	0.42	16,608	91.92	0.44
23.00	0.37	16,511	91.91	0.40
24.00	0.32	16.411	91.90	0.35
25.00	0.00	15,799	91.81	0,14
26.00	0.00	15,468	91.77	0.06
27.00	0.00	15,311	91.74	0.03
28.00	0.00	15,214	91.73	0.02
29.00	0.00	15,147	91.72	0.02
30.00	0.00	15,101	-91.71	0.01

ş

TRAVELERS STATION

WATER TESTING RESULTS

Maggiora Brothers February, 2021

595 Airport Blvd. Watsonville, CA 95076 (831) 724-1338

MAGGIORA BROS. DRILLING, INC.

2001 Shelton Drive Hollister, CA 95023 (831) 637-8228

WELL TEST REPORT

Α.	Customer:	Royal Oaks Market			Telephone: 8	831-431-033	33	
	Mail address:	12 Maher Rd, Wats	onville, CA 95076		-			
	Well Location	:101 & 129 Corner, \$	San Juan Bautista, CA		APN:			
	Drilled By:			-	Date:			
В.		h of Well: eter of Casing:	8"-STEEL				X NM X NM	
	Dept Type	h of Perforation:				CR OR CR OR	X NM X NM	
	and the second sec	p Type and HP: h Pump Set:	2HP/60-GPM			CR OR OR	NM NM	
ce co	odes:MDT=Measur	ed During Testing;CR=Comp	any Records;OR=Owner Records	;NM=Not	Measured, requires	addition testing l	beyond th	e scope of report)
C.	Well Test:		Date of Te	st:	2/25/2	2021		
	(1) Water Lev	el at Start:	44	ft.	(2) Sustained	d Pumping L	evel:	44
	(3) Drawdowr	n (1-2):	0	ft.	(4) Test Pum	ping Duratio	on:	24-HRS
	(7) Final Obse (8) Pumping I	field for Pumping Du Constant Pumping erved Yield Rate: Duration at Final Observed Yield Pro	Level Test: erved Yield Rate:		72	gpm gpm min. gal.		
	Title Bact	p Broke Suction Dur 22 Report Attached: eriological Analysis mical Analysis Attach	Attached:	X X	Yes	No No	Not Sa Not Sa	mpled in Testi mpled in Testi mpled in Testi mpled in Testi
	Chei	Incal Analysis Allaci		L	Yes			
D.		m Visual Inspection		L	Yes			
D.			: on:	X X	Yes Functional Functional Functional Functional Functional	Deficient Deficient Deficient Deficient Deficient Deficient	t t t t X	Not Observed Not Observed Not Observed Not Observed Not Observed Not Observed
		Well Pump Operation Electrical Equip.: Pressure Tanks: Water Pipes: Storage Tanks:	: on:	X X	Functional Functional Functional Functional Functional	Deficient Deficient Deficient Deficient Deficient	t t t t X	Not Observed Not Observed Not Observed Not Observed
E.	Water Syster	Well Pump Operation Electrical Equip.: Pressure Tanks: Water Pipes: Storage Tanks:	: on:		Functional Functional Functional Functional Functional	Deficient Deficient Deficient Deficient Deficient	t t t t X	Not Observed Not Observed Not Observed Not Observed

PLEASE SEE DEFINITIONS AND ADDITIONAL TERMS AT THE REVERSE

WELL TEST REPORT DEFINITIONS AND ADDITIONAL TERMS

<u>Sustained yield</u>. Sustained yield is the pumping rate at which long-term pumping can be maintained, and is the rate normally used to compare wells. If the test is of sufficient duration (and assuming the aquifer has a large storage capacity), sustained yield is the best indicator of long term well production during regular operation. As used in this report, sustained yield is the production rate measured at the conclusion of a test in which the pumping level in the well is held constant for the period of time indicated.

Average yield. In many wells, especially wells with small diameter casings, water levels cannot be monitored during pumping, and sustained yield can only be approximated by calculating average yield (which is total volume pumped divided by total pumping time including any period in which the pump breaks suction). Since the pumping level may be declining while testing, and the measured water production may include water in storage in the well and surrounding formation at the start of the test, average yield calculations may be significantly higher than the true sustained yield (particularly where the total pumping time is less than four hours).

<u>Unusual pumping conditions</u>. Wells that break suction while pumping or have high drawdowns in relation to the standing water level are often indicative of marginal long term water producers. These wells should always have protective shutoff devices on the pumps to prevent pump burnout from lack of water. A smaller capacity pump may improve electrical efficiency and sustain less wear by enabling longer pumping cycles. Conversely in stronger wells, the pump itself may be too small to pump the full well capacity, and thus the real sustained (or average) yield may be higher than that observed in this test.

<u>Sole report</u>. This report contains the sole observations and conclusions of the company pertaining to the testing of the Customer's well. Any prior statements of the agents or employees of the company which are not contained herein are superseded by this report. Such prior statements shall be relied upon at the Customer's own sole voluntary risk.

Test limitations. The data and conclusions provided are based upon the tests and measurements of the company using standard and accepted practices of the groundwater industry. However, conditions in water wells are subject to dramatic changes in even short periods of time. Additionally, the techniques employed may be subject to considerable error due to factors within the well and groundwater formation that are beyond the company's immediate control and/or observation. Therefore, the data are valid only as of the date of test and to the extent of the observational limitations of the test or installation indicated.

<u>Use of test</u>. The test conclusions are intended for general comparison of the well in its present condition against known water well standards or guidelines, and should not be relied upon to predict either the future quantity or quality of water that the well will produce. Wells should be periodically re-tested to show both seasonal and long-term production fluctuations or declines.

Disclaimers. In presenting the data and conclusions, the company makes no warranties, either express or implied, as to future water production of the well. Further, the company, unless expressly stated to the contrary, does not represent (1) that the well or pump system is in any particular condition or state of repair, or (2) that the test results will satisfy cognizant governmental ordinances or regulations, or (3) that the test duration or methodology is sufficient to meet local water system or new construction permit standards (these usually require 24 hour or longer test measurement), or (4) that the water is adequate for a particular purpose contemplated by Customer, (5) the accuracy and reliability of the report for any purpose more than one year after the date of the test.

<u>Customer's release</u>. In accepting this report, the Customer releases and holds the company harmless from liability for consequential or incidental damages arising (1) out of the breach of an express or implied warranty of future water production, or (2) in any manner through the further dissemination of this report, or its conclusions, by either Customer or third parties, except as the dissemination is required to complete the project or other activity for which the report was originally prepared.

ANALYTICAL CHEMISTS and BACTERIOLOGISTS Approved by State of California

TEL: 831-724-5422 FAX: 831-724-3188

1020703

Reporting Date: March 17, 2021

Work Order #:

TROLLAB 42 HANGAR WAY

WATSONVILLE CALIFORNIA 95076

Maggiora Bros. 595 Airport Blvd. Watsonville, CA 95076 Attn: Mike Maggiora

Date Received: Project # / Name: Water System #: Sample Identification: Sampler Name / Co.: Matrix:

February 25, 2021 None / P13990 NA

101& 129 Corner-Information Only do not send to State-Royal Oak Market, sampled 2/25/2021 11:45:00AM Josh Franz / Maggiora Bros **Drinking Water**

State

Laboratory #:	1020703-01	Results	Units	RL	Drinking Water Limits 1	Analysis Method	Date Analyzed	Flags
General Mineral		and the second second second second second	ut <u> </u>		hard and a second s			Read Provide State Street Street
Nitrate as N		ND	mg/L	0.10	10	EPA 300.0	02/28/21	-
рH		7.6	pH Units	0.1	-	SM4500-H+ B	02/25/21	
Specific Conductance (EC)		450	uS/cm	1.0	1600	SM2510B	02/25/21	
Hydroxide as OH		ND	mg/L	2.0	-	SM 2320B	02/25/21	
Carbonate as CO3		ND	mg/L	2.0	-	SM 2320B	02/25/21	
Bicarbonate as HCO3		230	mg/L	2.0	-	SM 2320B	02/25/21	
Total Alkalinity as CaCO3		190	mg/L	14	-	SM 2320B	02/25/21	
Hardness		170	mg/L	5.0	-	SM 2340 B	03/16/21	
Total Dissolved Solids		300	mg/L	10	1000	SM2540C	03/03/21	
Chloride		16	mg/L	1.0	500	EPA 300.0	02/28/21	
Sulfate as SO4		47	mg/L	0.50	500	EPA 300.0	02/28/21	
Fluoride		0.23	mg/L	0.10	2	EPA 300.0	02/28/21	
Calcium		28	mg/L	0.50	-	EPA 200.7	03/16/21	
Magnesium		25	mg/L	0.50	-	EPA 200.7	03/16/21	
Potassium		1.0	mg/L	0.50	-	EPA 200.7	03/16/21	
Sodium		37	mg/L	0.50	-	EPA 200.7	03/16/21	
* Iron		770	ug/L	50	300	EPA 200.7	03/16/21	
* Manganese		230	ug/L	20	50	EPA 200.7	03/16/21	
Copper		ND	ug/L	50	1000	EPA 200.7	03/16/21	
Zinc		ND	ug/L	50	5000	EPA 200.7	03/16/21	
inorganics								
Nitrate+Nitrite as N		ND	mg/L	0.10	10	EPA 300.0	02/28/21	
Arsenic		ND	ug/L	2.0	10	EPA 200.8	03/04/21	
Barium		ND	ug/L	100	1000	EPA 200.7	03/16/21	

RL - are levels down to which we can quantify with reliability, a result below this level is reported as "ND" for Not Detected.

State Drinking Water Limits, - as listed by California Administrative Code, Title 22.

* - a * in the left hand margin of the report means that particular constituent is above the California Drinking Water Limits.

Mike Galloway

ANALYTICAL CHEMISTS and BACTERIOLOGISTS Approved by State of California

TEL: 831-724-5422 FAX: 831-724-3188

March 17, 2021

Work Order #: 1020703

Reporting Date:

SOIL CONTROL LAB

February 25, 2021

WATSONVILLE CALIFORNIA 95876 USA

Maggiora Bros. 595 Airport Blvd. Watsonville, CA 95076 Attn: Mike Maggiora

Date Received: Project # / Name: Water System #: Sample Identification: Sampler Name / Co.: Matrix: Laboratory #:

None / P13990 NA 101& 129 Corner-Information Only do not send to State-Royal Oak Market, sampled 2/25/2021 11:45:00AM Josh Franz / Maggiora Bros

Matrix: Laboratory #:	Drinking Water 1020703-01				State Drinking Water	Analysis	Date	
		Results	Units	RL	Limits 1	Method	Analyzed	Flags
Inorganics	_	Allocate of the data of the		waard to grow the section of a sec		- It is go a car is from the second	ne an a dh' chuir inn an a	
Boron		120	ug/L	100		EPA 200.7	03/16/21	*
Cadmium		ND	ug/L	1.0	5	EPA 200.8	03/04/21	
Chromium		ND	ug/L	1.0	50	EPA 200.8	03/04/21	
Cyanide (total)		ND	ug/L	100	200	SM 4500-CN F	03/02/21	
Lead		ND	ug/L	5.0	15	EPA 200.8	03/04/21	
Mercury		ND	ug/L	1.0	2	EPA 245.1	03/04/21	
Selenium		ND	ug/L	5.0	50	EPA 200.8	03/04/21	
Silver		ND	ug/L	10	100	EPA 200.8	03/04/21	
MBAS (Surfactants)		ND	mg/L	0.025	0.5	SM5540C	02/26/21	
Aluminum		ND	ug/L	50	1000	EPA 200.7	03/16/21	
Antimony		ND	ug/L	6.0	6	EPA 200.8	03/04/21	
Beryllium		ND	ug/L	1.0	4	EPA 200.7	03/16/21	
Nickel		ND	ug/L	10	100	EPA 200.7	03/16/21	
Thallium		ND	ug/L	1.0	2	EPA 200.8	03/04/21	
Nitrite as N		ND	mg/L	0.10	1	EPA 300.0	02/28/21	
General Physical								
Color		ND	Color Units	3.0	-	SM 2120B	02/25/21	
Threshold Odor No.		ND	T.O.N.	1.0	-	SM 2150B	02/25/21	
Turbidity		5.0	NTU	0.10	-	SM 2130B	02/25/21	

RL - are levels down to which we can quantify with reliability, a result below this level is reported as "ND" for Not Detected. State Drinking Water Limits: - as listed by California Administrative Code, Title 22.

* - a * in the left hand margin of the report means that particular constituent is above the California Drinking Water Limits.

Mike Gallowry

TEL: 831-724-5422 FAX: 831-724-3188

ANALYTICAL CHEMISTS and BACTERIOLOGISTS

Approved by State of California

SOIL CONTROL LAB WATSONVILLE CALIFORNIA 95076 USA

Maggiora Bros. 595 Airport Blvd. Watsonville, CA 95076 Attn: Mike Maggiora

Work Order #: 1020703 Reporting Date: February 26, 2021

Bacteriological Examination of Water for Coliform Organisms

Date Received:	Water sample(s) r	eceived Fe	bruary 25, 2021		
Project # / Name:	P13990 / None				
Water System #/Name:	NA				
Sampling Type:	Routine		Sampling Period: I	February 2021	
Sampler's Name:	Josh Franz / Mago				
Matrix:	Drinking Water				
Sample		Sampling	Sampling		Total
الما م مانات م الله م م		Date.	There		O - Itte

Sample S	ampling	Sampling	Total	
Identification	Date	Time	Coliforms	E. coli
101& 129 Corner-Information Only do not send to State-Rr 0	2/25/21	11:45	Absent	Absent

Date/Time Analyzed: 02/25/21 17:07 Method of Analysis: SM 9223 B

CA ELAP Certificate #1494 (This identifies our Laboratory to the Health Department)

Mike Gallowry