

Technical Assistance Leak Detection

California Rural Water Association



Date

7/18/2017
Abel Silva
Leak Detection Specialist/Resource Development Unit
California Rural Water Association

Water System

Frazier Park Public Utility District Jonnie Allison 4020 Park Drive 93225 661-245-3734 System #1510007/AR# 5406







Water System Inventory

	THE STATE OF STATE OF THE STATE
Water System	Frazier Park Public Utility District
Street	Park Drive
City	Frazier Park
MHI (< \$49,191)	36,156
Population	2,691
Connections	1,300
Year Est.	1939
Flat Rate/Tiered	Flat with consumption
Maps/As-builts/GIS	Yes
Dirt Roads/Paved	Both
Sewer/Septic	Septic
System Operator	Jonnie Allison D2/T2

147 U	Qty.	Av	g. Depth			•			. 51 .	
Wells	4 34		Surface Water			Treatment Plant				
	T						G: 1		2010 (0.000)	CNALC
Main Pipe		Size	activities of	Miles	Asbestos	Ductile Iron	Steel	Cast Iron	PVC (C-900)	CMLC
	2 4	6 8	10 12	25			1		<u> </u>	
Comico		Size		Poly	Copper	Galvanized	HDPE	PVC	Driscoll	Othe
Service	1/2 <	¾ 1	1½ 2	nf.		1				
Value		Size		Qty.	Gate	Butterfly	Globe	Check	Ball	Plug
Valve	2 4	6 8	10 12	200	V					
Lludront		Size		Qty.	Wharf-Head	Blow-Off	Com	mercial	Residential	Mete
Hydrant	2 4 6		60					/		
Matau		Size		Qty.	AMR/AMI	P/D	Smart	Turbine	Compound	Mag
Meter	4 1	1½ 2	2 4 6	1,300		/				
Air Relief	1	Size		Qty.	Booste	r Dumn	Qty.			Qty.
All Relief			ĺ	•		Storage Tanks				
&Vacuum	3/4	1 1	1/2 2	20	& Hydro Pneumatic		6	2101480 141110		12
Backflow Valve		Size		Qty.	Dunanima	Daduain - V	ا ما ده		Size	Qty.
backnow valve	3/4 1 11/2 2 4			Pressure	Reducing V	2 4 6 8		4		

Comments: Frazier Park Public Utility District was established in 1939. The district is at about a 20% water loss to date. The district is mainly on steel pipes except for a section of PVC. Water Meters in district are old and outdated which is an water loss issue due to inaccurate reads. The district has Twelve Water Storage tanks in which two of them are leaking. Each of the two leaking tanks has Calcium deposits on outer tank. Both Harrison and Wolfe Booster pumps are outdated and leaking. Wolfe 2 tank shut off valve is inoperable. Wells 4-5 are leaking at packing, shaft is not online and causing issues. Recommendations:

- 1. Infrastructure replacment of old outdated steel pipes and faulty valves.
- 2. Replace old outdated Water Meters with Preferred Provider Program Kamstupp Smart Meters to insure accurate reads.
- 3. Repair or replace leaking Water Storage Tanks Preferred Provider Program "Superior Tanks".
- 4. Repair or replace old outdated Booster Pumps.
- 5. Repair or replace inoperable shut off valve.
- 6. Recommend additional TA for Wells, and Water storage tank issues.

Daily Log

Water System: Frazier Park Public Utility District

California Rural Water Association

Leak Detection Team Member: Abel Silva

Leak Detection Specialist

Equipment Used:

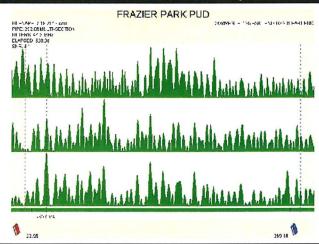
FCS Correlator - FCS Acoustic Ground Mic - Data Loggers - Google Map/System Map

System PSI: 30-180

Pressure Zone: 1-7

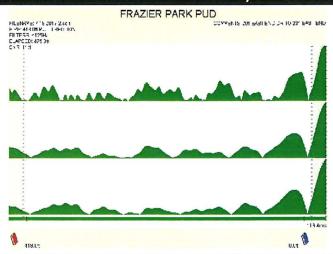
Street Address of both Correlators / Cross Street	Hydrant	System Valve	Curb Stop	Diameter / Material	Length / Footage
125 East End to 201 East End			2	6"/Steel	292/Ft
201 East End to 231 East End			2	6"/Steel	418/Ft
231 East End to 357 East End			2	6"/Steel	597/Ft
357 East End to 417 East End			2	6"/Steel	499/Ft

			Leak	Report				
Date: 7/18/2017								
System:			Frazier Park Public Utility District					
Leak Detec	tion members:			Ak	oel Silva			
Equipment	Used: FCS (Correlator and	FCS Acoustic G	Fround Mic				
Map Refere	ence: Goog	le Map/Syster	т Мар					
Street and/	or Block Numbers:	East End						
Leak	Address of	Utility or Customer	Leak Pinpointed	Leak to be Rechecked	Leak Repaired	Not a Leak? (Date)		
Number	Suspected Leak	(U or C)	(Y or N)	(Y or N)	(Y or N)	Not a Leak. (Date)		
		Meters / Curb Stop	Hydrants	Valves	Test Rods	Other		
Indicate Number of Manual Listening Points Used		8						
Indicate Number of Leak Noise Loggers Listening Points Used								
Miles of Mains Surveyed: .3			42	Survey Time	e: (Hours)	6		
Number of I	eaks Suspected:	(<u> </u>	Rechecked:	(Numbers)			
		,	•					
Number of L	eaks Pinpointed:			Pinpointing	Time: (Hours)			
	o leaks were found	d.		- 000 Promissio E07 10	,			
		40.00						



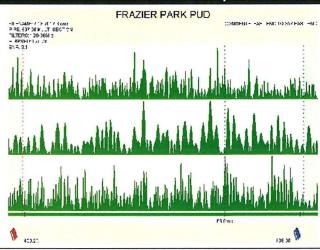
Survey Graph

	The correlation has detected a "Leak(s)".					
	The Correlator displays a peak in all snapshots graphs in the same spot but is not leak due too:					
	□ Water passing through a meter. □ Running pumps.					
	□ Electrical (Transformer). □ Illegal service.					
	The correlation has detected "No leak(s)".					
	The Correlator program snapshots are all differ in graph peaks, this indicates flow due to pumping, pressure surges or momentary use of water through meter(s).					
Χ	The correlation has detected "No leak(s)".					
	The Correlator program displays a " <i>Center Correlation</i> ". The graph peak is in the center of the screen with equal footage on each side indicates the program sensor at a 50/50 point hears no sounds.					
	The correlation has detected "No leaks".					
	<u>Comments:</u> No leak found					



Survey Graph

	The correlation has detected a "Leak(s)".					
		_				
	The Correlator displays a peak in all snapshots graphs in the same spot but is not leak due too:					
	□ Water passing through a meter. □ Running pumps.					
	□ Electrical (Transformer). □ Illegal service.					
	The correlation has detected "No leak(s)".					
X	The Correlator program snapshots all differ in graph peaks, this indicates flow due to pumping, pressure surges or momentary use of water through meter(s).					
	The correlation has detected "No leak(s)".					
	The Correlator program displays a " <i>Center Correlation</i> ". The graph peak is in the center of the screen with equal footage on each side indicates the program sensor at a 50/50 point hears no sounds.					
	The correlation has detected "No leaks".					
	<u>Comments:</u> No leak found					



Survey Graph

The Correlator program allows for a "*Snapshot Option*". When the snapshot button is pressed during a correlation, the snapshot feature effectively enables the operator to compare noise levels at different points during the correlation process. When a leak is detected, the graph will have a peak in the same spot and will be located in the same spot on all snapshots. This will indicate the presence of a leak.

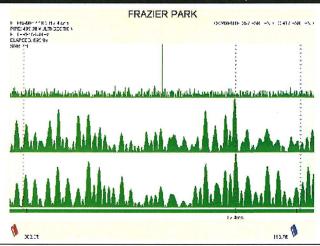
The correlation has detected a "Leak(s)".

The Correlator displays a peak in all snaps	hots graphs in the same spot but is not leak due too:
☐ Water passing through a meter.	□ Running pumps.
□ Electrical (Transformer).	□ Illegal service.
The correlation has detected "No leak(s)"	<u>.</u>
The Correlator program snapshots all different or momentary use of water through meters	er in graph peaks, this indicates flow due to pumping, pressure surges r(s).
The correlation has detected "No leak(s)"	<u>, </u>
	r Correlation". The graph peak is in the center of the screen with program sensor at a 50/50 point hears no sounds.

Comments: No leak found

The correlation has detected "No leaks".

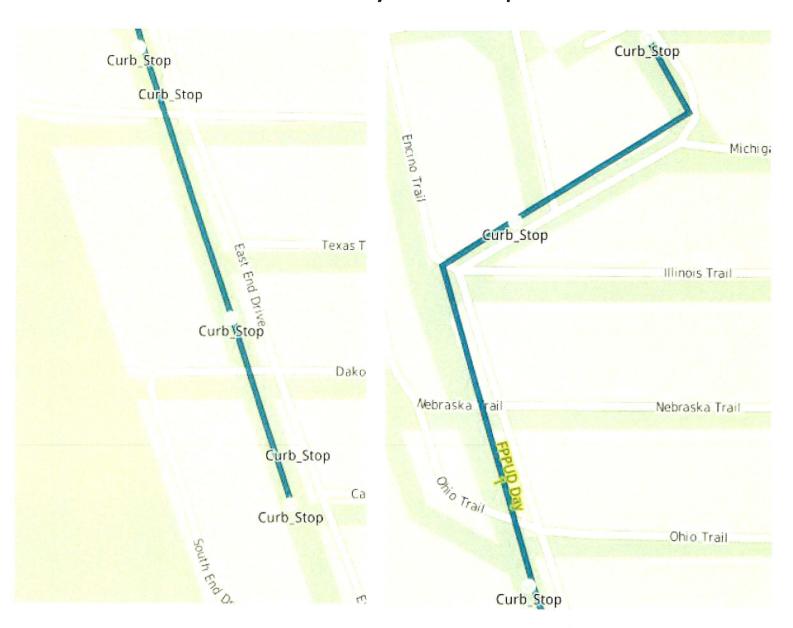
X



Survey Graph

	located in the same spot on all snapshots. This will indicate the presence of a leak.						
	The correlation has detected a "Leak(s)".						
	The Correlator displays a peak in all snaps	shots graphs in the same spot but is not leak due too:					
	☐ Water passing through a meter.	□ Running pumps.					
	□ Electrical (Transformer).	□ Illegal service.					
	The correlation has detected "No leak(s)	<u>"</u>					
	5 332	er in graph peaks, this indicates flow due to pumping, pressure surges					
V	or momentary use of water through meter	er(s).					
Χ							
	The correlation has detected "No leak(s)".						
		r Correlation". The graph peak is in the center of the screen with					
	equal footage on each side indicates the	program sensor at a 50/50 point hears no sounds.					
	The correlation has detected "No leaks".						
	Comments: No leak found						

Water System Map

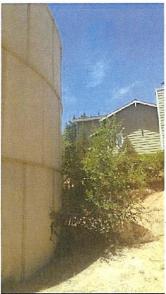


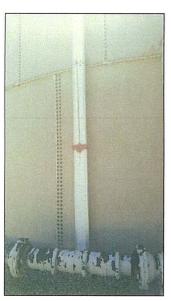
Water System Pictures













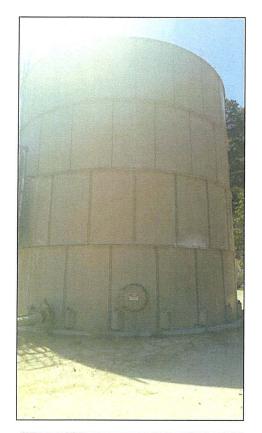


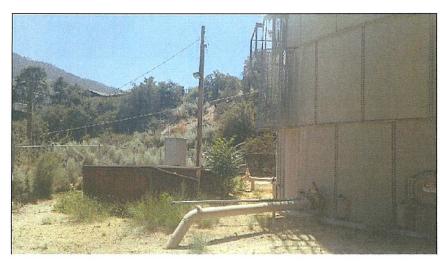




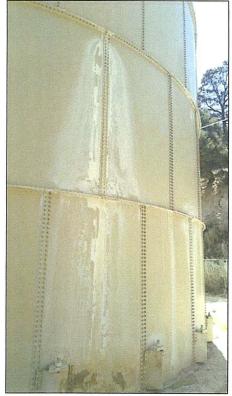


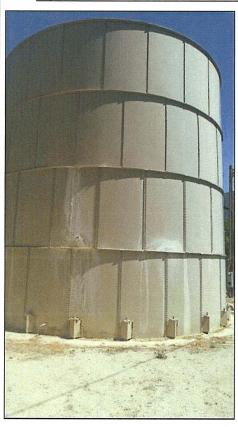
Water System Pictures

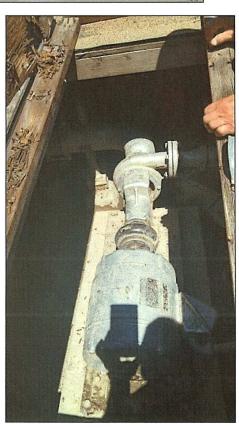












	1000	
Dai	11	ng
Dal	W	$\Gamma05$

Water System: Frazier Park Public Utility District (Day2)

California Rural Water Association

Leak Detection Team Member: Abel Silva

Leak Detection Specialist

Equipment Used:

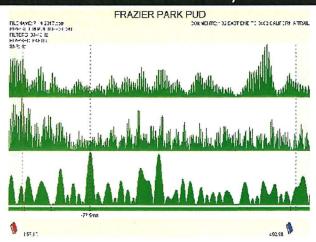
FCS Correlator - FCS Acoustic Ground Mic - Data Loggers – Google Map/System Map

System PSI: 30-180

Pressure Zone:

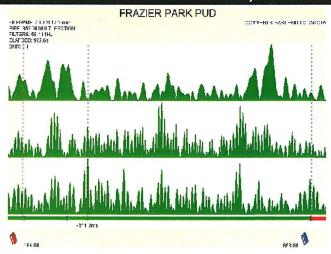
Street Address of both Correlators / Cross Street	Hydrant	System Valve	Curb Stop	Diameter / Material	Length / Footage
32 East End to 3402 California Trail			2	4"/Steel	650/Ft
132 East End to Dakota	1		1	6"/Steel	852/Ft
132 East End to 226 East End			2	4"/Steel	551/Ft
221 Pine Cyn to 241 Pine Cyn			2	6"/Steel	394/Ft
241 Pine Cyn to 3832 Park Dr			2	6"/Steel	899/Ft

			Leak	Report					
Date:				7/19/	2017 Day 2				
System:			Frazier Park Public Utility District						
Leak Detec	tion members:			Ak	el Silva				
Equipment	Used: FCS (Correlator and	FCS Acoustic G	Ground Mic					
Map Refere	ence: Goog	gle Map/Syster	т Мар						
Street and/	or Block Numbers:	East End/Cali	fornia Trail/Da	kota/Pine Can	yon				
700		<u> </u>		TO SE STORY OF THE SECOND SECO	•				
Leak Number	Address of Suspected Leak	Utility or Customer (U or C)	Leak Pinpointed (Y or N)	Leak to be Rechecked (Y or N)	Leak Repaired (Y or N)	Not a Leak? (Date)			
		Meters / Curb Stop	Hydrants	Valves	Test Rods	Other			
Indicate Number of Manual Listening Points Used		9	1						
Indicate Number of Leak Noise Loggers Listening Points Used									
		A							
Miles of Mai	ns Surveyed:	.6.	33	Survey Tim	e: (Hours)	6			
Number of L	eaks Suspected:	()	Rechecked:	(Numbers)				
Numberet	ooks Dinnelisted			Diagraphy 41	Time a. (11)				
	eaks Pinpointed: Io leaks found			Pinpointing	Time: (Hours)				
Hemanys. IV	io leaks louild			###	77.20.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00 (10.00				



Survey Graph

	The correlation has detected a "Leak(s)".
	The Correlator displays a peak in all snapshots graphs in the same spot but is not leak due too:
	□ Water passing through a meter. □ Running pumps.
	□ Electrical (Transformer). □ Illegal service.
	The correlation has detected "No leak(s)".
X	The Correlator program snapshots are all differ in graph peaks, this indicates flow due to pumping, pressure surges or momentary use of water through meter(s).
	The correlation has detected "No leak(s)".
	The Correlator program displays a " <i>Center Correlation</i> ". The graph peak is in the center of the screen with equal footage on each side indicates the program sensor at a 50/50 point hears no sounds.
	The correlation has detected "No leaks".
	<u>Comments:</u> No leak found



Survey Graph

The Correlator program allows for a "*Snapshot Option*". When the snapshot button is pressed during a correlation, the snapshot feature effectively enables the operator to compare noise levels at different points during the correlation process. When a leak is detected, the graph will have a peak in the same spot and will be located in the same spot on all snapshots. This will indicate the presence of a leak.

The correlation has detected a "Leak(s)".

The Correlator displays a peak in all snapshots graphs i	in the same spot but is not leak due too:	

- □ Water passing through a meter.
- ☐ Running pumps.
- □ Electrical (Transformer).
- □ Illegal service.

The correlation has detected "No leak(s)".

Χ

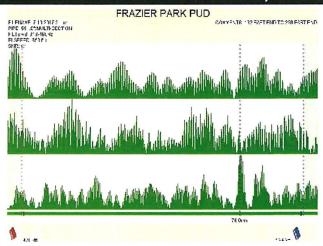
The Correlator program snapshots all differ in graph peaks, this indicates flow due to pumping, pressure surges or momentary use of water through meter(s).

The correlation has detected "No leak(s)".

The Correlator program displays a "Center Correlation". The graph peak is in the center of the screen with equal footage on each side indicates the program sensor at a 50/50 point hears no sounds.

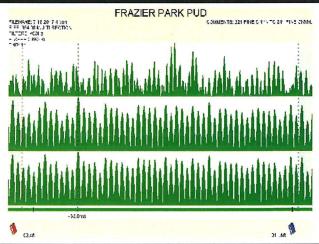
The correlation has detected "No leaks".

Comments: No leak found		 r socialidados visitos es reconstantes	



Survey Graph

	The correlation has detected a "Leak(s)".			
	The Correlator displays a peak in all snapshots graphs in the same spot but is not leak due too:			
	□ Water passing through a meter. □ Running pumps.			
	□ Electrical (Transformer). □ Illegal service.			
	The correlation has detected "No leak(s)".			
X	The Correlator program snapshots all differ in graph peaks, this indicates flow due to pumping, pressure surges or momentary use of water through meter(s).			
	The correlation has detected "No leak(s)".			
	The Correlator program displays a " <i>Center Correlation</i> ". The graph peak is in the center of the screen with equal footage on each side indicates the program sensor at a 50/50 point hears no sounds.			
	The correlation has detected "No leaks".			
	Comments: No leak found			



Survey Graph

The Correlator program allows for a "*Snapshot Option*". When the snapshot button is pressed during a correlation, the snapshot feature effectively enables the operator to compare noise levels at different points during the correlation process. When a leak is detected, the graph will have a peak in the same spot and will be located in the same spot on all snapshots. This will indicate the presence of a leak.

The correlation has detected a "Leak(s)".

The Correlate	or displays a pea	ak in all snapsho	ts graphs in t	the same spot I	but is not le	eak due too:
---------------	-------------------	-------------------	----------------	-----------------	---------------	--------------

- ☐ Water passing through a meter.
- □ Running pumps.
- □ Electrical (Transformer).
- □ Illegal service.

The correlation has detected "No leak(s)".

Χ

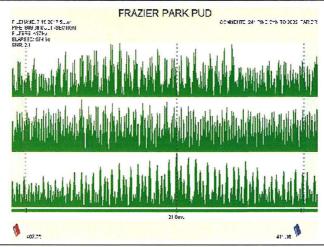
The Correlator program snapshots all differ in graph peaks, this indicates flow due to pumping, pressure surges or momentary use of water through meter(s).

The correlation has detected "No leak(s)".

The Correlator program displays a "*Center Correlation*". The graph peak is in the center of the screen with equal footage on each side indicates the program sensor at a 50/50 point hears no sounds.

The correlation has detected "No leaks".

<u>Comments:</u> No leak found	



Survey Graph

The Correlator program allows for a "*Snapshot Option*". When the snapshot button is pressed during a correlation, the snapshot feature effectively enables the operator to compare noise levels at different points during the correlation process. When a leak is detected, the graph will have a peak in the same spot and will be located in the same spot on all snapshots. This will indicate the presence of a leak.

	The correlation has detected a "Leak(s)".	
	The Correlator displays a peak in all snaps	hots graphs in the same spot but is not leak due too:
	☐ Water passing through a meter.	□ Running pumps.
	□ Electrical (Transformer).	□ Illegal service.
	The correlation has detected "No leak(s)	n ≛
X	The Correlator program snapshots all different or momentary use of water through meters	er in graph peaks, this indicates flow due to pumping, pressure surges er(s).
	The correlation has detected "No leak(s)	n •
		r Correlation". The graph peak is in the center of the screen with program sensor at a 50/50 point hears no sounds.

The correlation has detected "No leaks".

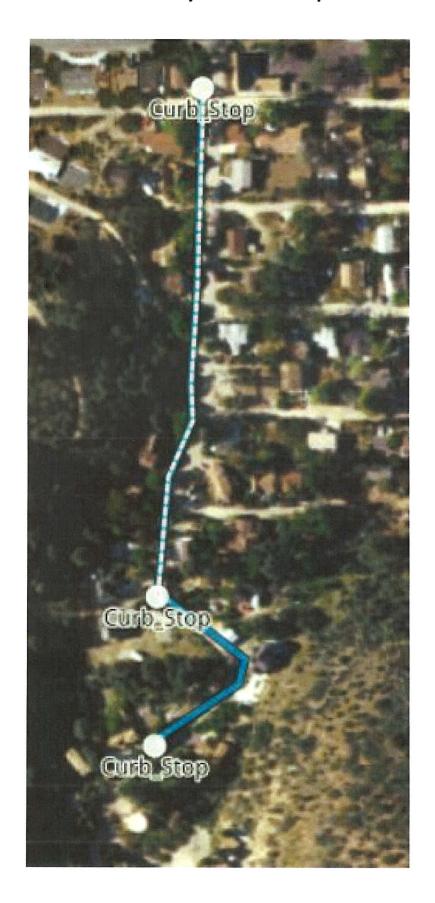
<u>Comments:</u> No leak found

Water System Map





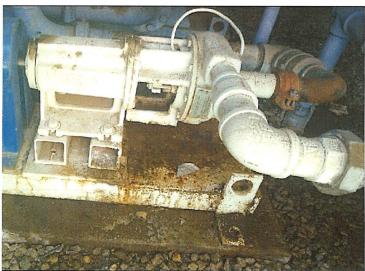
Water System Map



Water System Pictures











Dai	V	10	a
Dal	LV	LU	ĸ

Water System: Frazier Park Public Utility District (Day3)

California Rural Water Association

Leak Detection Team Member: Abel Silva

Leak Detection Specialist

Equipment Used:

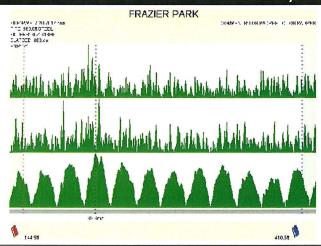
FCS Correlator - FCS Acoustic Ground Mic - Data Loggers – Google Map/System Map

System PSI: 30-180

Pressure Zone:

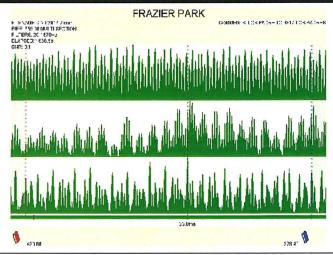
Street Address of both Correlators / Cross Street	Hydrant	System Valve	Curb Stop	Diameter / Material	Length / Footage
Los Padres to Los Padres		2		6"/Steel	563/Ft
Los Padres to 3817 Los Padres		1	1	6"/Steel	759/Ft
3817 Los Padres to 4001 Los Padres			2	6"/Steel	1054/Ft
4001 Los Padres to 4017 Los Padres			2	6"/Steel	407/Ft
Inlet tank to 720 Elm		1	1	6/Steel	473/Ft
					to the second se

			Leak	Report		
Date:	Date: 7/20/2017					
System:	System: Frazier Park Public Utility District					
					WATER TO THE TOTAL THE TOTAL TO THE TOTAL TOTAL TO THE TO	
Leak Detec	tion members:	•		Ab	el Silva	
	-					
Equipment	Used: FCS (Correlator and	FCS Acoustic G	iround Mic		
Map Refere	ence: Goog	le Map/Syster	т Мар			
Street and/	or Block Numbers:	Los Padres/E	lm			
Leak Number	Address of Suspected Leak	Utility or Customer (U or C)	Leak Pinpointed (Y or N)	Leak to be Rechecked (Y or N)	Leak Repaired (Y or N)	Not a Leak? (Date)
		Meters / Curb Stop	Hydrants	Valves	Test Rods	Other
Indicate Nur Listening Poi	nber of Manual ints Used	6		4		
	nber of Leak Noise ening Points Used					
				•		
Miles of Mai	ns Surveyed:	.6	16	Survey Time	e: (Hours)	6
Number of Leaks Suspected: 0 Rechecked: (Numbers)						
					,	
Number of L	eaks Pinpointed:			Pinpointing	Time: (Hours)	
	lo leaks were found	d during surve	у.	, ,	•	



Survey Graph

	The correlation has detected a "Leak(s)".			
	The Correlator displays a peak in all snapshots graphs in the same spot but is not leak due too:			
	□ Water passing through a meter. □ Running pumps.			
	□ Electrical (Transformer). □ Illegal service.			
	The correlation has detected "No leak(s)".			
X				
	The correlation has detected "No leak(s)".			
	The Correlator program displays a " <i>Center Correlation</i> ". The graph peak is in the center of the screen with equal footage on each side indicates the program sensor at a 50/50 point hears no sounds.			
	The correlation has detected "No leaks".			
	<u>Comments:</u> No leak found			



Survey Graph

The Correlator program allows for a "*Snapshot Option*". When the snapshot button is pressed during a correlation, the snapshot feature effectively enables the operator to compare noise levels at different points during the correlation process. When a leak is detected, the graph will have a peak in the same spot and will be located in the same spot on all snapshots. This will indicate the presence of a leak.

The correlation has detected a "Leak(s)".

The correlator displays a peak in all shapshots graphs in the same spot but is not leak due too.				
☐ Water passing through a meter.	☐ Running pumps.			

□ Electrical (Transformer). □ Illegal service.

<u>The correlation has detected "No leak(s)".</u>

The Correlator program snapshots all differ in graph peaks, this indicates flow due to pumping, pressure surges or momentary use of water through meter(s).

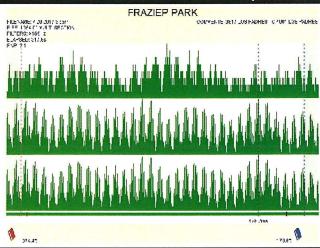
The correlation has detected "No leak(s)".

X

The Correlator program displays a "*Center Correlation*". The graph peak is in the center of the screen with equal footage on each side indicates the program sensor at a 50/50 point hears no sounds.

The correlation has detected "No leaks".

Comments:	No leak found			

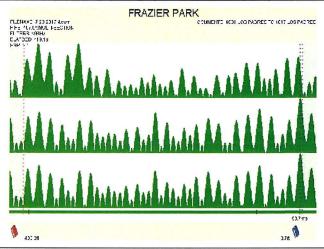


Survey Graph

The Correlator program allows for a "*Snapshot Option*". When the snapshot button is pressed during a correlation, the snapshot feature effectively enables the operator to compare noise levels at different points during the correlation process. When a leak is detected, the graph will have a peak in the same spot and will be located in the same spot on all snapshots. This will indicate the presence of a leak.

	The correlation has detected a "Leak(s)".			
	The Correlator displays a peak in all snaps	hots graphs in the same spot but is not leak due too:		
	☐ Water passing through a meter.	□ Running pumps.		
	□ Electrical (Transformer).	□ Illegal service.		
	The correlation has detected "No leak(s)	n <u>*</u>		
X	The Correlator program snapshots all differ in graph peaks, this indicates flow due to pumping, pressure surges or momentary use of water through meter(s).			
	The correlation has detected "No leak(s)".			
	The Correlator program displays a " <i>Center Correlation</i> ". The graph peak is in the center of the screen with equal footage on each side indicates the program sensor at a 50/50 point hears no sounds.			
	The correlation has detected "No leaks".			

Comments: No leak found



Survey Graph

The Correlator program allows for a "*Snapshot Option*". When the snapshot button is pressed during a correlation, the snapshot feature effectively enables the operator to compare noise levels at different points during the correlation process. When a leak is detected, the graph will have a peak in the same spot and will be located in the same spot on all snapshots. This will indicate the presence of a leak.

The correlation has detected a "Leak(s)".

	The Correlator	displays a peak	in all snapshots	graphs in the sam	e spot but is not leak	due too:
--	----------------	-----------------	------------------	-------------------	------------------------	----------

- □ Water passing through a meter.
- □ Running pumps.
- □ Electrical (Transformer).
- □ Illegal service.

The correlation has detected "No leak(s)".

X

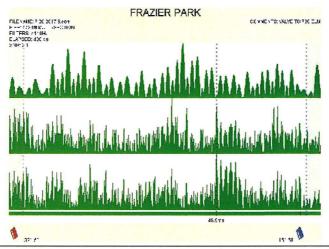
The Correlator program snapshots all differ in graph peaks, this indicates flow due to pumping, pressure surges or momentary use of water through meter(s).

The correlation has detected "No leak(s)".

The Correlator program displays a "*Center Correlation*". The graph peak is in the center of the screen with equal footage on each side indicates the program sensor at a 50/50 point hears no sounds.

The correlation has detected "No leaks".

Comments: No leak found



Survey Graph

	located in the same spot on all snapshots. This will indicate the presence of a leak.		
	The correlation has detected a "Leak(s)".		
	The Correlator displays a peak in all snapshots graphs in the same spo	t but is not leak due too:	
	☐ Water passing through a meter. ☐ Running pumps.		
	□ Electrical (Transformer). □ Illegal service.		
	The correlation has detected "No leak(s)".		
Χ	The Correlator program snapshots all differ in graph peaks, this indica or momentary use of water through meter(s).	tes flow due to pumping, pressure surges	
	The correlation has detected "No leak(s)".		
	The Correlator program displays a " <i>Center Correlation</i> ". The graph pe equal footage on each side indicates the program sensor at a 50/50 pe		
	The correlation has detected "No leaks".		
	Commenter N. I. I. C.		
	Comments: No look found		

<u>Comments:</u> No leak found

Water System Map

