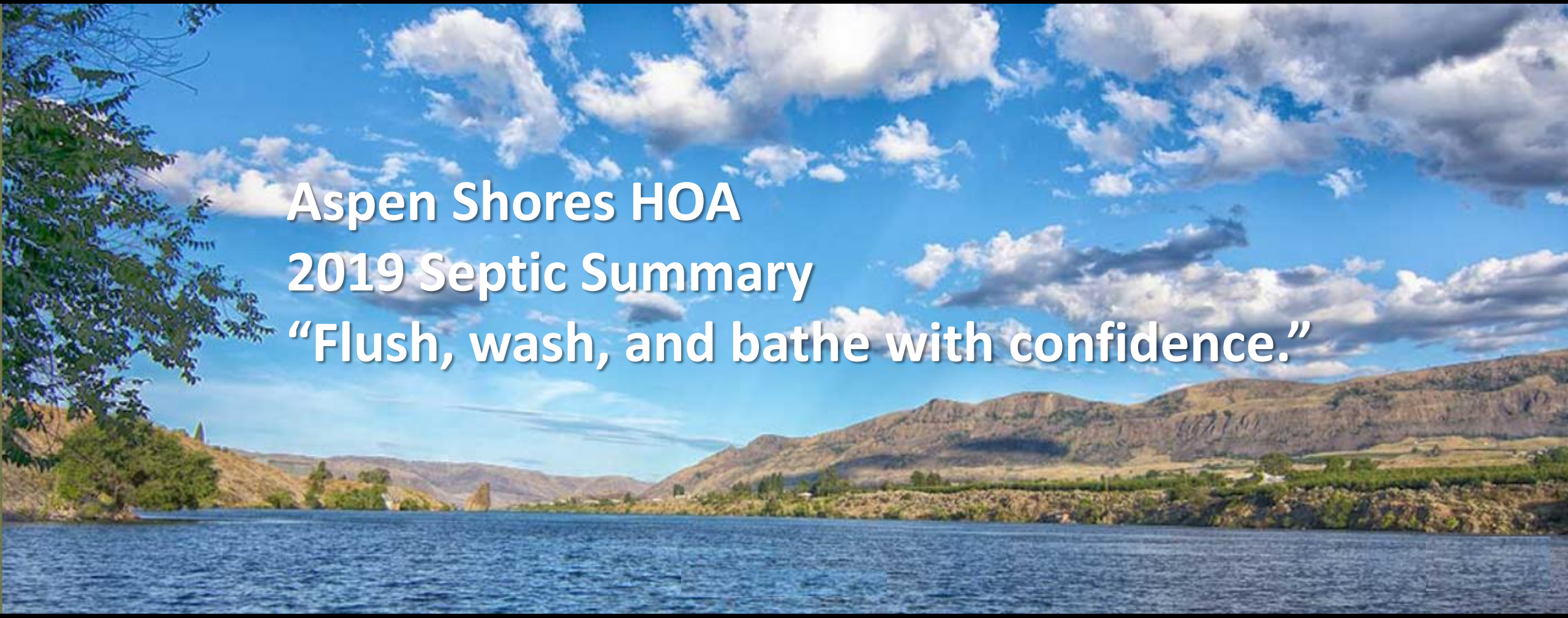
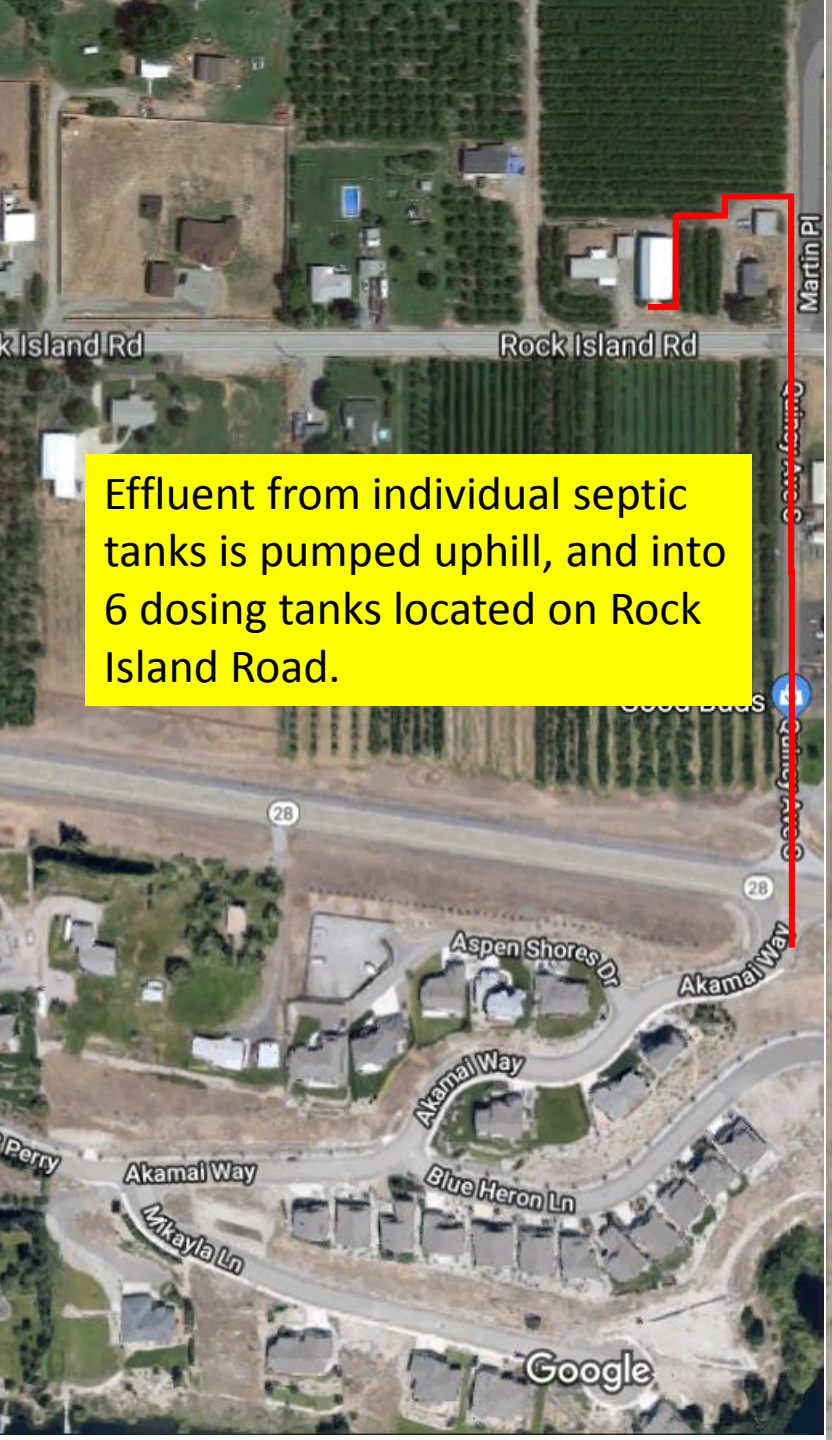
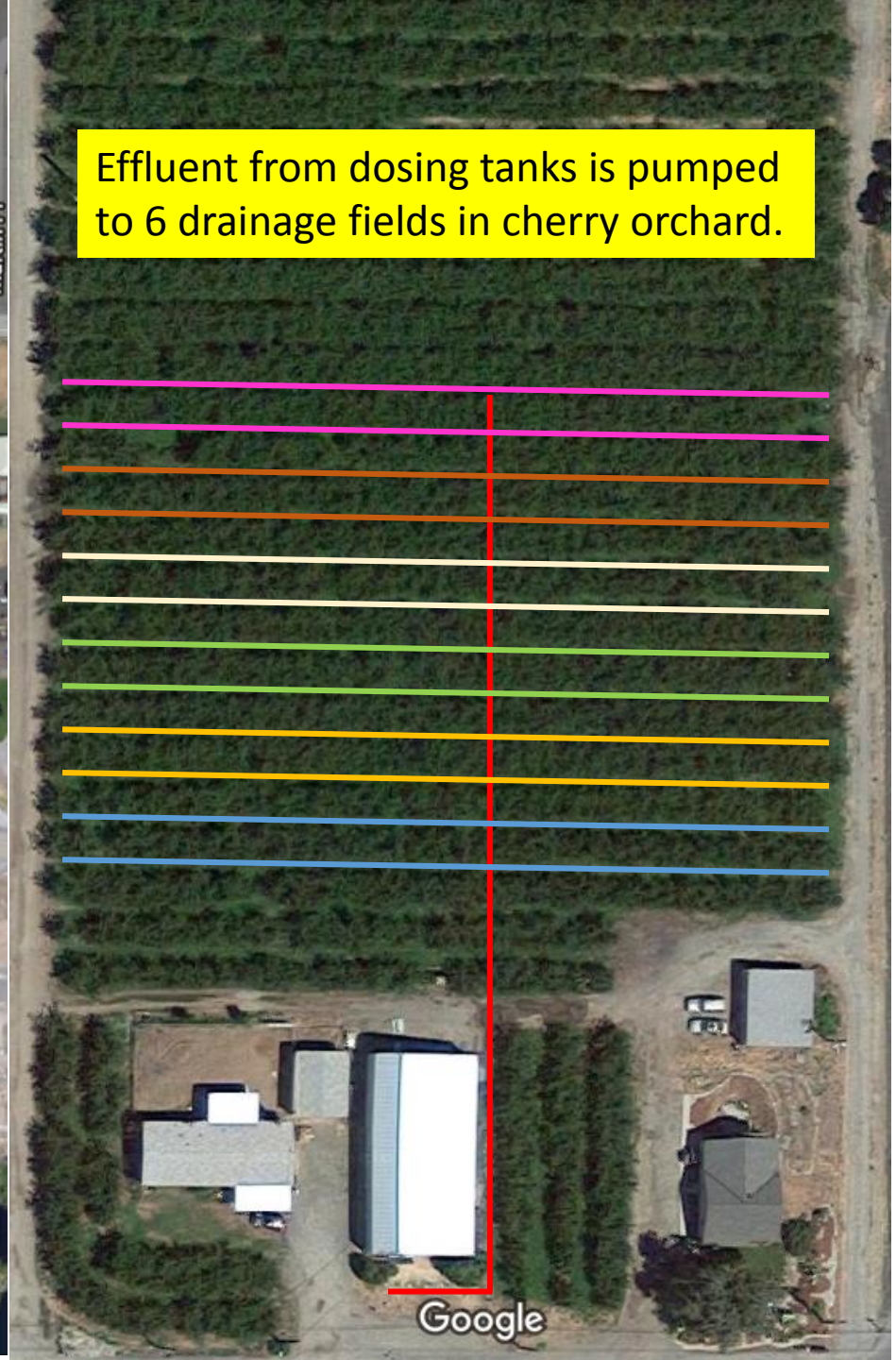

Aspen Shores HOA
2019 Septic Summary
“Flush, wash, and bathe with confidence.”



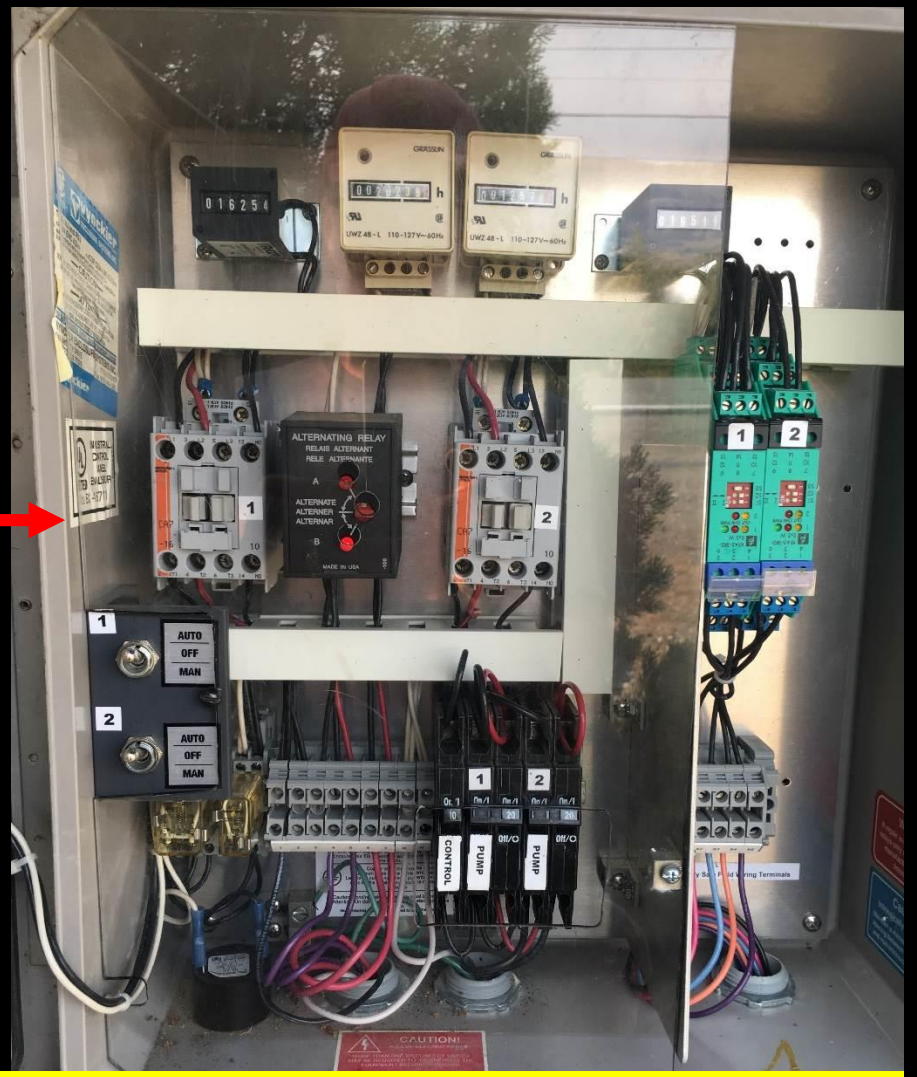
Effluent from individual septic tanks is pumped uphill, and into 6 dosing tanks located on Rock Island Road.



Effluent from dosing tanks is pumped to 6 drainage fields in cherry orchard.

Perforated piping then distributes waste underground in drainage fields. A drainage field is composed of 2 rows of the cherry orchard and is designed to handle as much as 3,240 gallons of effluent per day.

Control panels for pumps, float switches, and alarm system for the 6 dosing tanks on Rock Island Road.



Control panel manages 2 pumps in each dosing tank, counts the number of cycles and minutes each pump has run, and issues an alarm when high-water or low-water float switches are activated.

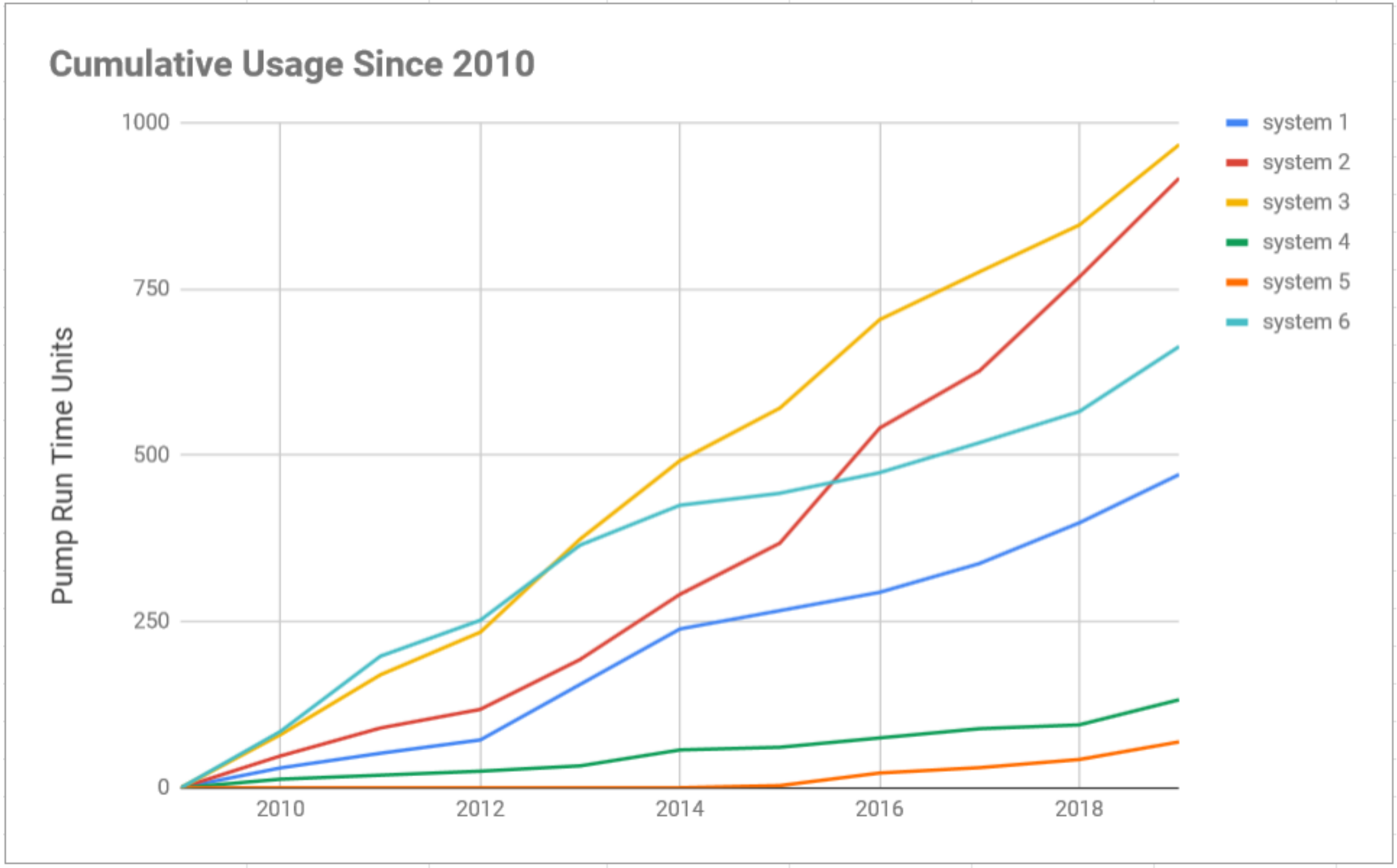
Control panels and location of 6 dosing tanks on Rock Island Road.

2019 Maintenance and Improvements

- Replace
  - 6 riser gaskets
  - 6 insulation blankets in distribution valve boxes
  - 6 disintegrating concrete covers with aluminum covers
  - 2 floats
  - 1 heat strip in distribution valve box
- Repair distribution valve in drainage field
- Weeding, trim shrubbery, disposal of concrete covers, clean up dosing tank area
- $620 costs to date

Monitor Monthly Metrics

Changes Month to Month			January	February	March	April	May	June	July	August	September	October	November
System 1	Pump 1	Cycles		91	67	75	94	80	81	114	82	80	85
		Time		3.33	2.54	2.73	3.46	2.93	2.95	3.8	3.07	3.11	3.33
	Pump 2	Cycles		92	65	73	94	78	81	113	83	79	85
		Time		3.36	2.38	2.81	3.29	3.01	2.81	3.9	3.2	3.12	3.41
System 2	Pump 1	Cycles		97	77	92	103	85	98	111	91	111	96
		Time		7.86	6.4	7.6	7.67	6.4	7.3	8.25	6.81	8.45	6.83
	Pump 2	Cycles		97	77	93	101	85	98	112	91	111	96
		Time		5.76	4.71	5.61	6.01	5.22	5.38	6.56	5.02	5.92	5.52
System 3	Pump 1	Cycles		42	31	35	41	39	43	69	35	40	34
		Time		5.1	3.66	4.3	4.89	4.79	5.24	6.06	4.28	4.74	4.09
	Pump 2	Cycles		42	31	35	41	38	42	61	36	39	34
		Time		3.73	2.67	3	3.61	3.22	3.58	4.35	3.3	3.56	3.09
System 4	Pump 1	Cycles		17	17	21	23	18	15	39	17	19	8
		Time		0.95	0.93	1.2	1.34	0.97	0.83	1.99	0.93	1.03	0.42
	Pump 2	Cycles		17	17	17	26	18	15	36	18	18	9
		Time		0.93	0.9	1.2	1.24	0.99	0.84	1.8	0.93	0.98	0.45
System 5	Pump 1	Cycles		31	23	34	41	22	51	56	51	73	73
		Time		1.12	0.81	1.26	1.34	0.63	1.53	1.87	1.61	2.63	2.98
	Pump 2	Cycles		32	23	33	39	24	51	57	51	75	72
		Time		1.1	0.78	1.18	1.28	0.66	1.52	1.76	1.75	2.59	2.89
System 6	Pump 1	Cycles		63	47	56	58	51	75	124	96	112	85
		Time		3.28	2.45	3.27	3.19	2.9	3.89	5.1	4.54	5.18	4.35
	Pump 2	Cycles		64	47	56	58	49	74	107	97	112	84
		Time		3.49	2.64	3.03	3.17	2.66	4.02	5.36	4.45	5.12	4.42


Cumulative Usage Since 2010
Pump Run Time Units
1000
750
500
250
0
2010
2012
2014
2016
2018
system 1
system 2
system 3
system 4
system 5
system 6

Field	Properties
3	2800, 2810, 2820, 2840, 2850 Akamai; 2830, 2840, 2850 Blue Heron
2	2858, 2864, 2870, 2878, 2888, 2896, 2912, 2938, 2952 Blue Heron
6	2801, 2825, 2835, 2845, 2855 Aspen Shores; 2870, 2890 Akamai
1	1 South Anchor Lane; 2790, 2800 Mikayla; 2702, 2705, 2710 Gracie Lane
4	2820, 2830, 2840, 2860, 2870, 2880, 2890 Mikayla
5	2966, 2980, 2988, 2990, 2992, 2994 Blue Heron

Previous Septic Reserve Study - 2012

DRAINFIELD REPLACEMENT SCHEDULE/COSTS

COMPONENT	NUMBER OF ITEMS	ESTIMATED COST/ITEM	TOTAL COST	LIFE (YRS)	PER YEAR COSTS
Drainfield	6	$20,000	$120,000	20	$6,000
Pumps	12	$1,000	$12,000	15	$800
Hydrotek Valves	18	$250	$4,500	5	$900
Control Panel	6	$1,500	$9,000	10	$900
Junction boxes	6	$150	$900	10	$90
ExPr Junction boxes	6	$250	$1,500	5	$300
Wiring	6	$250	$1,500	5	$300
Monitor/Alarm system	1	$4,500	$4,500	10	$450
TOTAL			$152,400		$9,740
PER HOUSEHOLD COSTS (44)					$221

A portion of the spreadsheet that contains about 140 inventoried items that comprise the septic infrastructure depicted on slide 2.

Location	Item description	Year Installed or In Use Since	Expected Life (Years)	Expected End of Life	2019 Replacement Cost (Materials)	Estimated 2019 Replacement Cost - Labor (hourly labor x # of hours)	QTY	Estimated 2019 Total Replacement Cost (Including Tax)	Estimated Replacement Cost at End of Predicted Life (material, labor, tax, inflation)
Tank 1 Pump 1	Orenco PF501512 50 GPM 1.5 HP	2008	20	2028	1496	825	1	2,511	2,975
Tank 1 Pump 2	Orenco PF501512 50 GPM 1.5 HP	2008	20	2028	1496	825	1	2,511	2,975
Tank 2 Pump 1	Orenco PF501512 50 GPM 1.5 HP	2008	20	2028	1496	825	1	2,511	2,975
Tank 2 Pump 2	Orenco PF501512 50 GPM 1.5 HP	2008	20	2028	1496	825	1	2,511	2,975
Tank 3 Pump 1	Orenco PF501512 50 GPM 1.5 HP	2008	20	2028	1496	825	1	2,511	2,975
Tank 3 Pump 2	Orenco PF501512 50 GPM 1.5 HP	2008	20	2028	1496	825	1	2,511	2,975
Tank 4 Pump 1	Orenco PF501512 50 GPM 1.5 HP	2008	20	2028	1496	825	1	2,511	2,975
Tank 4 Pump 2	Orenco PF501512 50 GPM 1.5 HP	2008	20	2028	1496	825	1	2,511	2,975
Tank 5 Pump 1	Orenco PF501512 50 GPM 1.5 HP	2008	20	2028	1496	825	1	2,511	2,975
Tank 5 Pump 2	Orenco PF501512 50 GPM 1.5 HP	2008	20	2028	1496	825	1	2,511	2,975
Tank 6 Pump 1	Orenco PF501512 50 GPM 1.5 HP	2008	20	2028	1496	825	1	2,511	2,975
Tank 6 Pump 2	Orenco PF501512 50 GPM 1.5 HP	2008	20	2028	1496	825	1	2,511	2,975
								30,136	**35,699**
Tank 1	Tank 1 Pump vault & filter	2004	30	2034	682	275	1	1,035	1,373
Tank 2	Tank 2 Pump vault & filter	2004	30	2034	682	275	1	1,035	1,373
Tank 3	Tank 3 Pump vault & filter	2004	30	2034	682	275	1	1,035	1,373
Tank 4	Tank 4 Pump vault & filter	2004	30	2034	682	275	1	1,035	1,373
Tank 5	Tank 5 Pump vault & filter	2004	30	2034	682	275	1	1,035	1,373
Tank 6	Tank 6 Pump vault & filter	2004	30	2034	682	275	1	1,035	1,373
								6,213	**8,240**
Tank 1	Tank 1 high float switch	2004	15	2019	52	137.5	1	205	205
Tank 1	Tank 1 pump on float switch	2004	15	2019	52	137.5	1	205	205
Tank 1	Tank 1 pump off float switch	2004	15	2019	52	137.5	1	205	205
Tank 1	Tank 1 low float switch	2004	15	2019	52	137.5	1	205	205

Estimated Replacement Costs
From Quincy Transport Pipes to Drainage Fields

- Today: $516,449
- Replace components at estimated end of life: $779,588 (2019 to 2055)

Septic Reserve Budgeting Strategy

- Difficult to accurately determine component end of life
- System is underutilized
- Be prepared for major expenses
- Assess budget annually against repairs & replacements
- Review strategy annually with Chelan-Douglas Health District
- Reserve CDs earnings are ahead of inflation

Recommendation

Achieve minimum reserve of $105,115 to replace:

- 1 drain field - $64,086
- 6 pumps - $17,850
- 2 control panels - $2,974
- 3 two-way distribution valves - $2,493
- 6 three-way distribution valves - $5,124
- 2 dosing tanks - $12,558
- **Current level of reserve fund: $99,520**

For Future Consideration

Quincy pipeline bids - HDPE 100 year life; 500’ rolls; fused; no glued joints

Pipkin bid: $85,500 + tax + fees

KRCI bid: $71,850 + tax + fees