

## Time Weighted Lake Level Data Above/Below Legal Level

For the Period: June 15th thru September 15th Each Year - 2007 to Date

(Refer to graphs of yearly lake level that follow)

From 6/15 to 9/15 of Year	Calc'd Graph Area <sup>(1)</sup>		Percent of Area		Avg. Daily Level		Memo: Max. Amount	
	Above the Legal Level	Below the Legal Level	Above the Legal Level	Below the Legal Level	Above the Legal Level	Below the Legal Level	Above the Legal Level	Below the Legal Level
	(sq. in.)	(sq. in.)	(%)	(%)	(in.)	(in.)	(in.)	(in.)
2007	0.00	3.30	0%	100%	0.00	-3.01	0.00	-4.92
2008	0.58	1.25	32%	68%	2.40	-2.19	5.16	-3.72
2009	0.01	3.09	0%	100%	0.16	-2.85	0.36	-4.08
2010	0.20	0.59	25%	75%	0.90	-0.79	2.16	-2.04
2011	0.09	2.86	3%	97%	0.32	-2.87	0.48	-6.24
2012	0.03	3.28	1%	99%	0.42	-3.19	0.60	-6.48
2013	0.06	1.74	3%	97%	0.30	-2.08	0.72	-4.68
2014	0.51	0.05	91%	9%	0.49	-0.23	1.80	-0.48
2015	0.18	1.23	13%	87%	1.01	-1.39	2.04	-3.00
2016	0.14	1.06	12%	88%	0.50	-1.76	1.08	-3.84
2017	0.50	0.54	48%	52%	0.92	-1.15	2.28	-2.52
2018	0.00	3.85	0%	100%	0.00	-3.43	0.00	-6.00
2019	0.42	1.11	27%	73%	0.77	-1.75	2.64	-3.36
<b>2007 to Date Averages:</b>			<b>20%</b>	<b>80%</b>	<b>0.63</b>	<b>-2.05</b>		

**Objective:** Maintain the lake level consistent with the court ordered Legal (summer) Level.

**Observation on above data to date:** This data represents lake level information for the prime summer recreation period of 6/15 through 9/15 of each year from 2007 to date. In 2007, two additional flop gates were added and a 4.75 ft. unregulated opening was also added. Since 2007 the average time-weighted daily lake level has been BELOW the legal level by a significant amount (more than 2 inches) 80% of the time. It has been ABOVE the legal level a relatively insignificant amount (less than 2/3 of an inch) only 20% of the time.

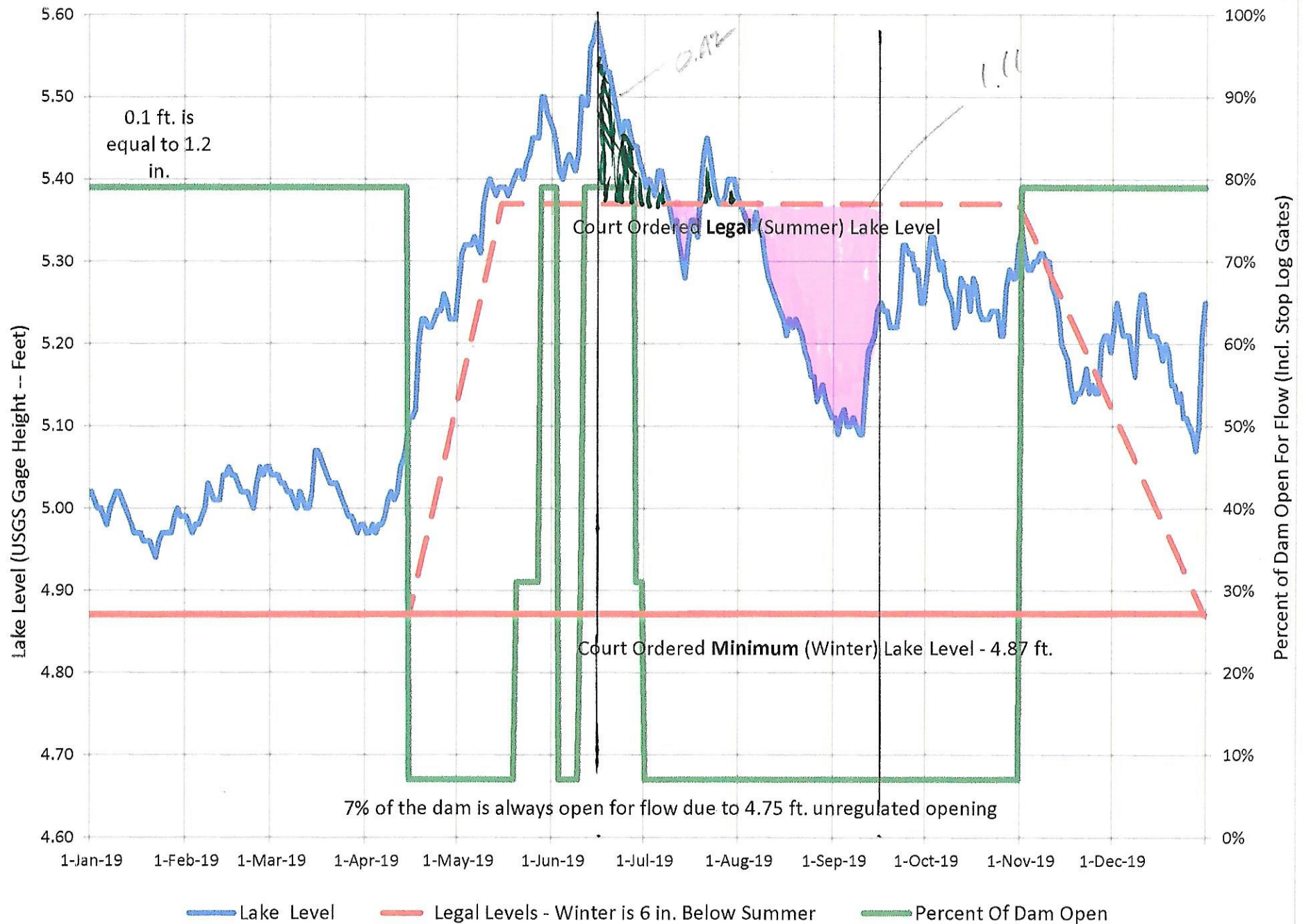
**Conclusion:** Based on all available data gathered to date, the dam as currently managed and configured is not capable of meeting the above stated objective.

**Note:** The existing 1982 Court Order clearly does not define the Legal (summer) Level as a "maximum" or a "not to exceed" level, whereas the same order specifically defines the Winter Level as not to exceed more than a 6 inch drawdown from the Legal (summer) Level.

(1): Areas of lake level above/below the Legal Level, as depicted on the lake level graphs between June 15 & Sept 15 dates, the prime summer recreational period, were mechanically calculated using a compensating polar planimeter.

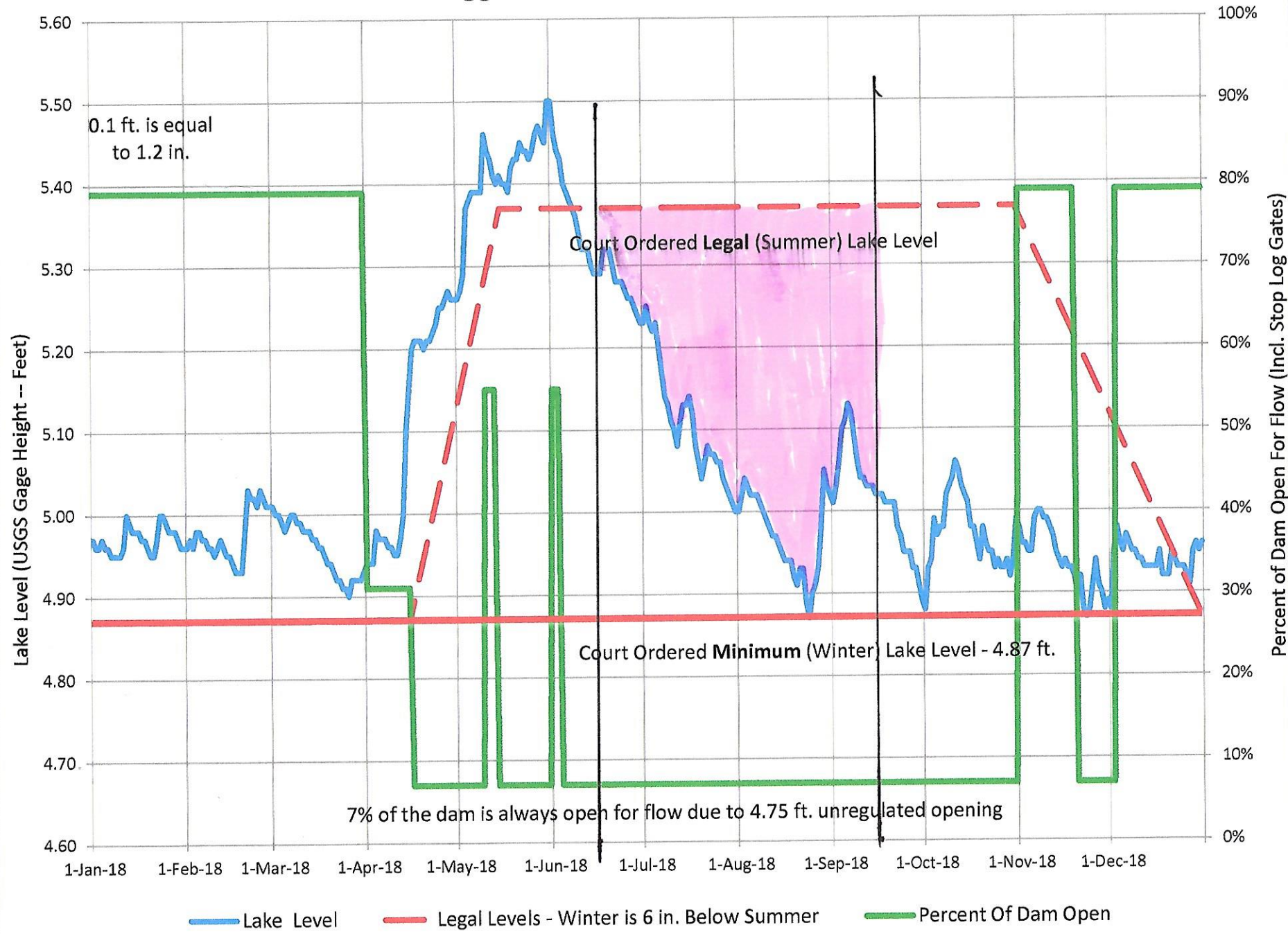
(2): For data of this type to be statistically valid, it requires a minimum study period of several decades during which time a consistent dam operating procedure is followed. Beginning in the 2014 CY, the County began honoring the Asst. Prosecutor's interpretation of the 1982 Court Order that the start of the winter drawdown shall not commence until on or about Nov 1st.

# 2019CY Higgins Lake -- USGS Daily Average Lake Level

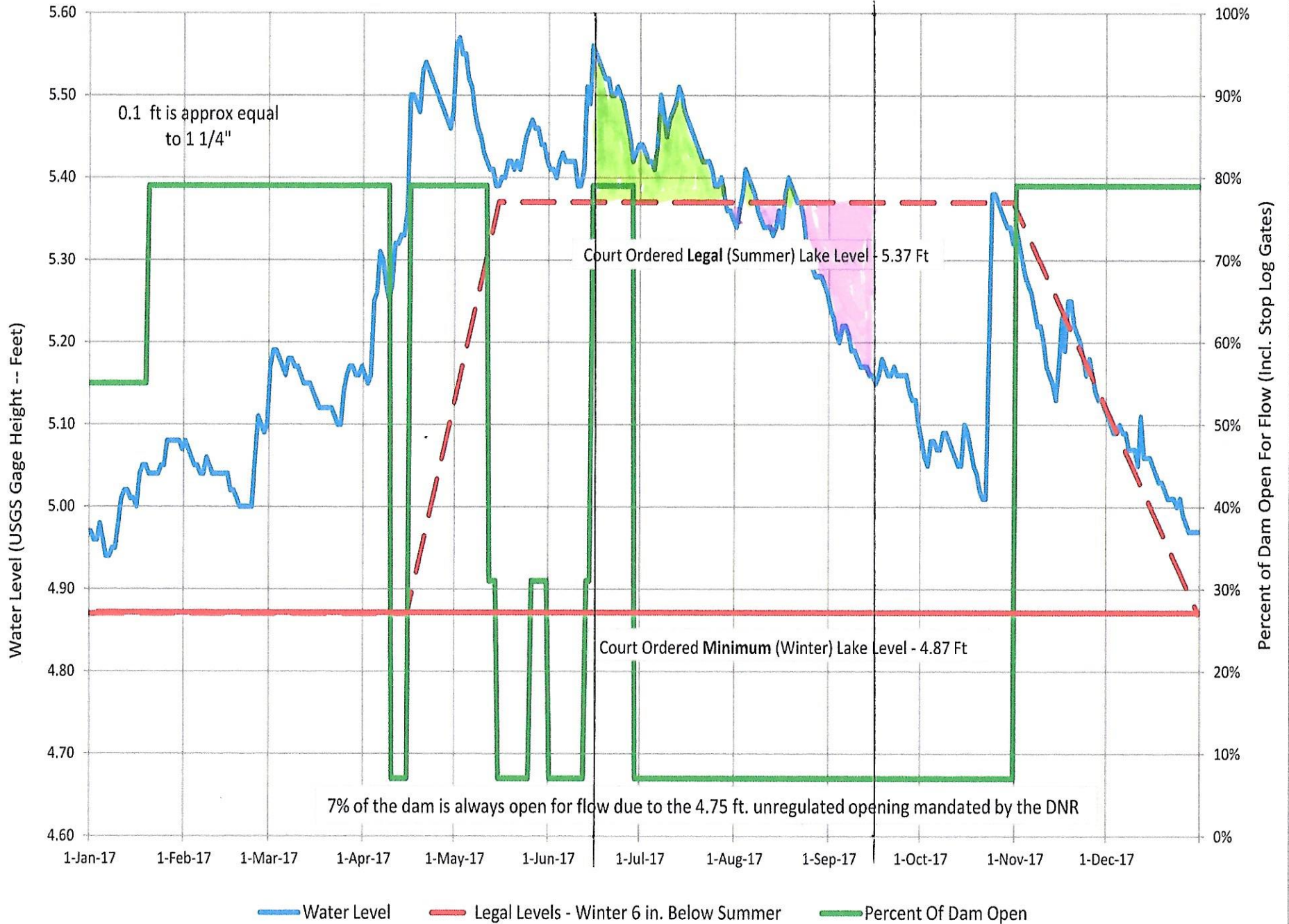




# 2018CY Higgins Lake -- USGS Daily Average Lake Level

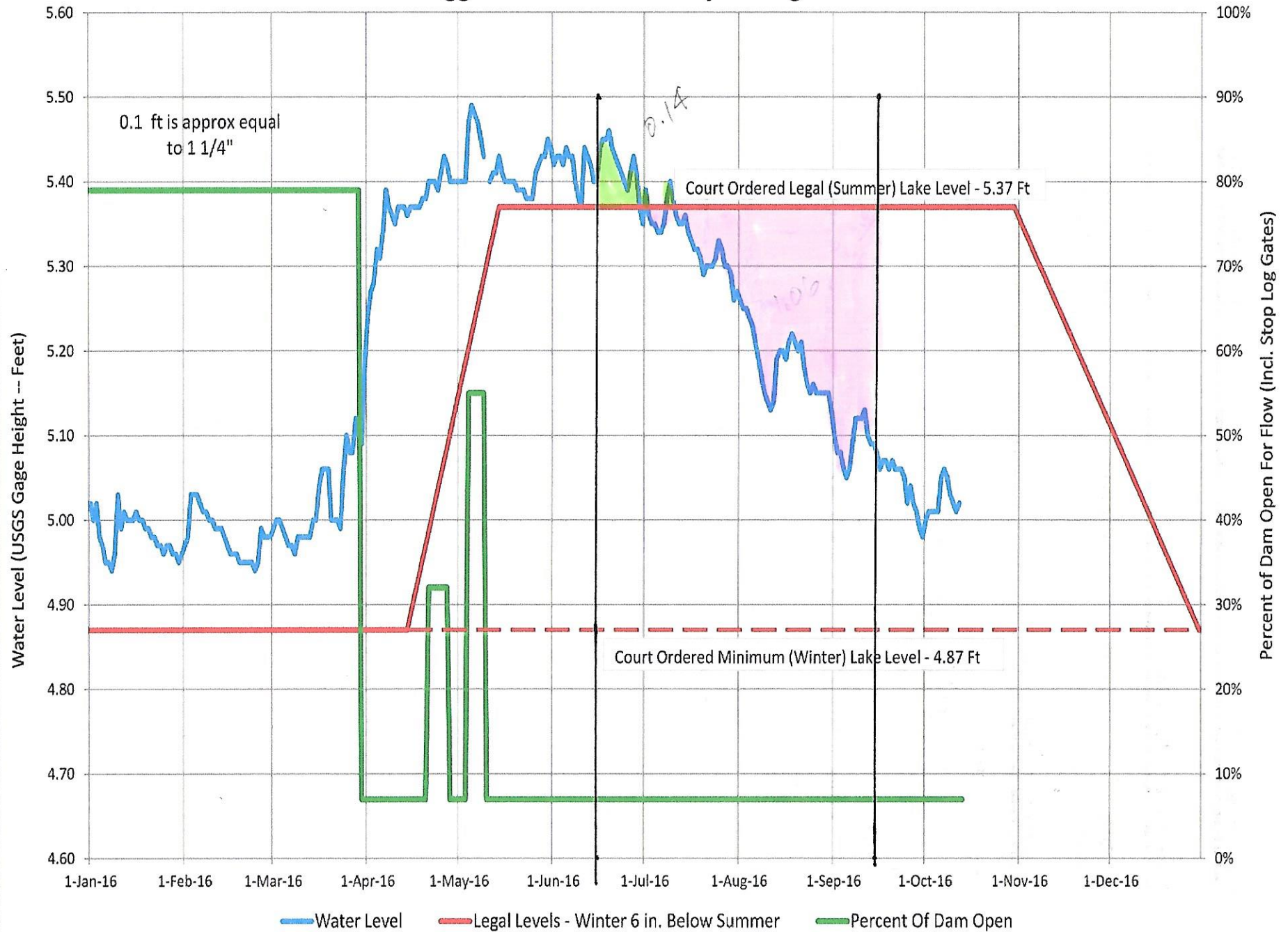


# 2017CY Higgins Lake -- USGS Daily Average Water Level

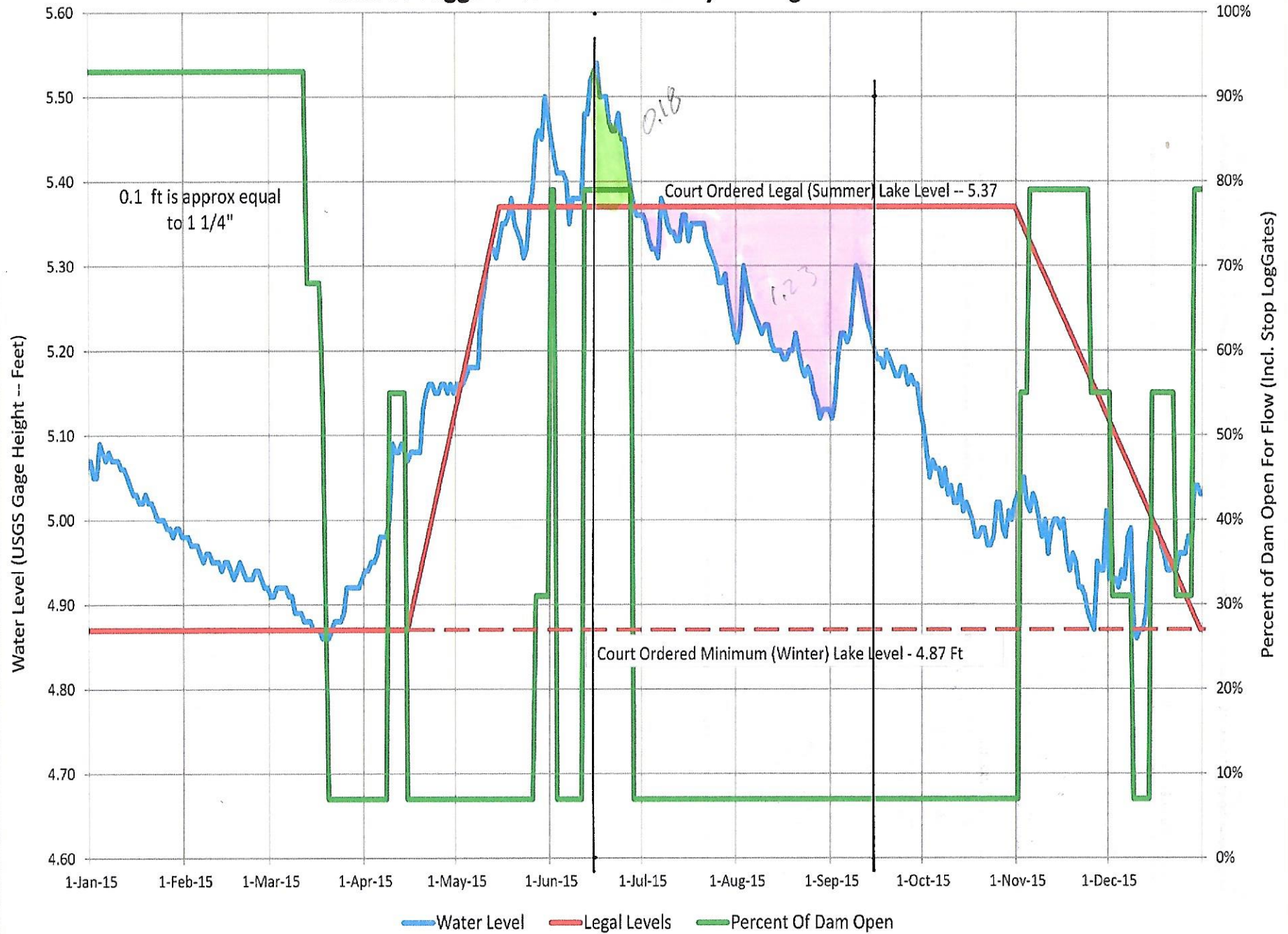




# 2016CY Higgins Lake -- USGS Daily Average Water Level

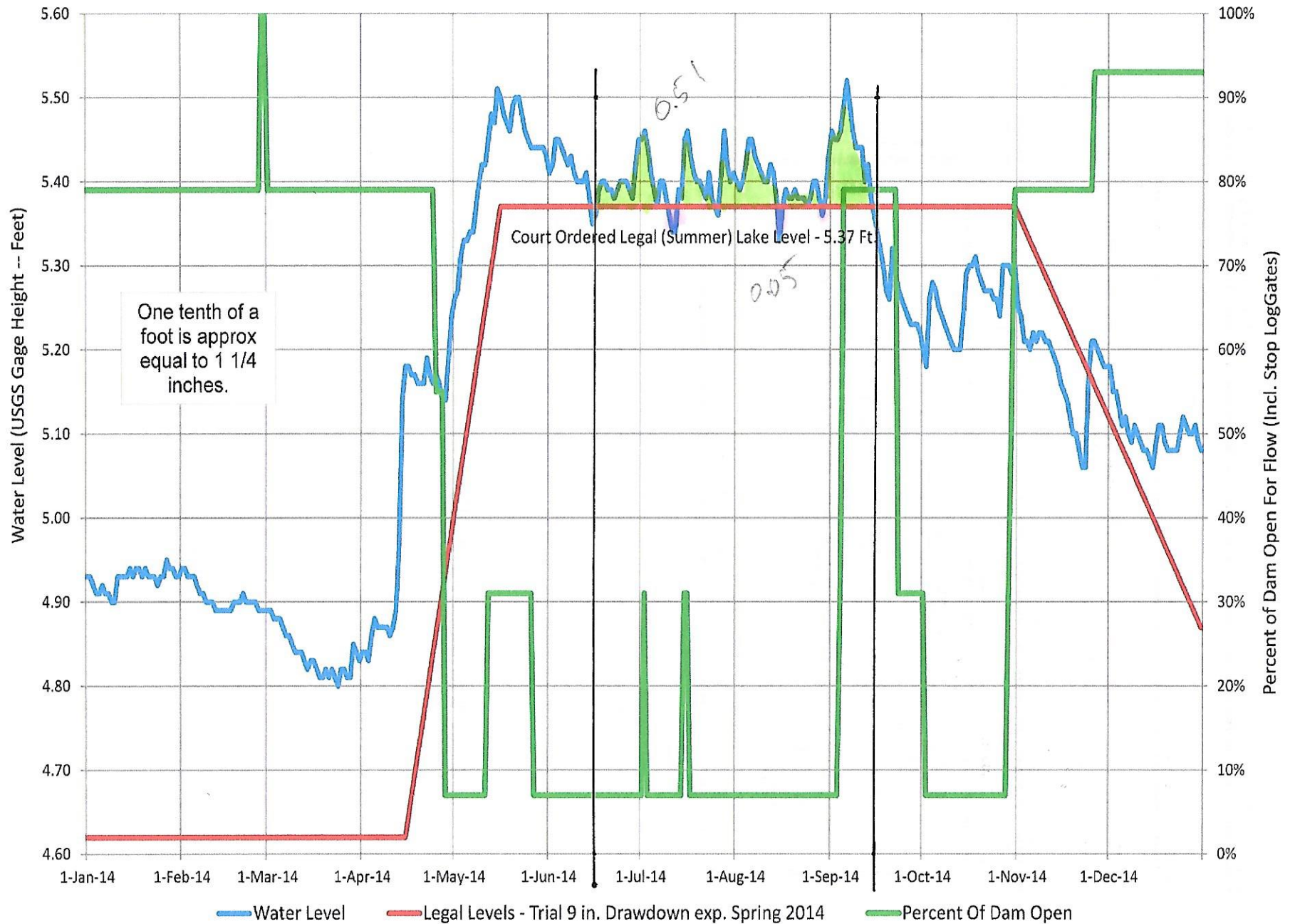


# 2015CY Higgins Lake -- USGS Daily Average Water Level

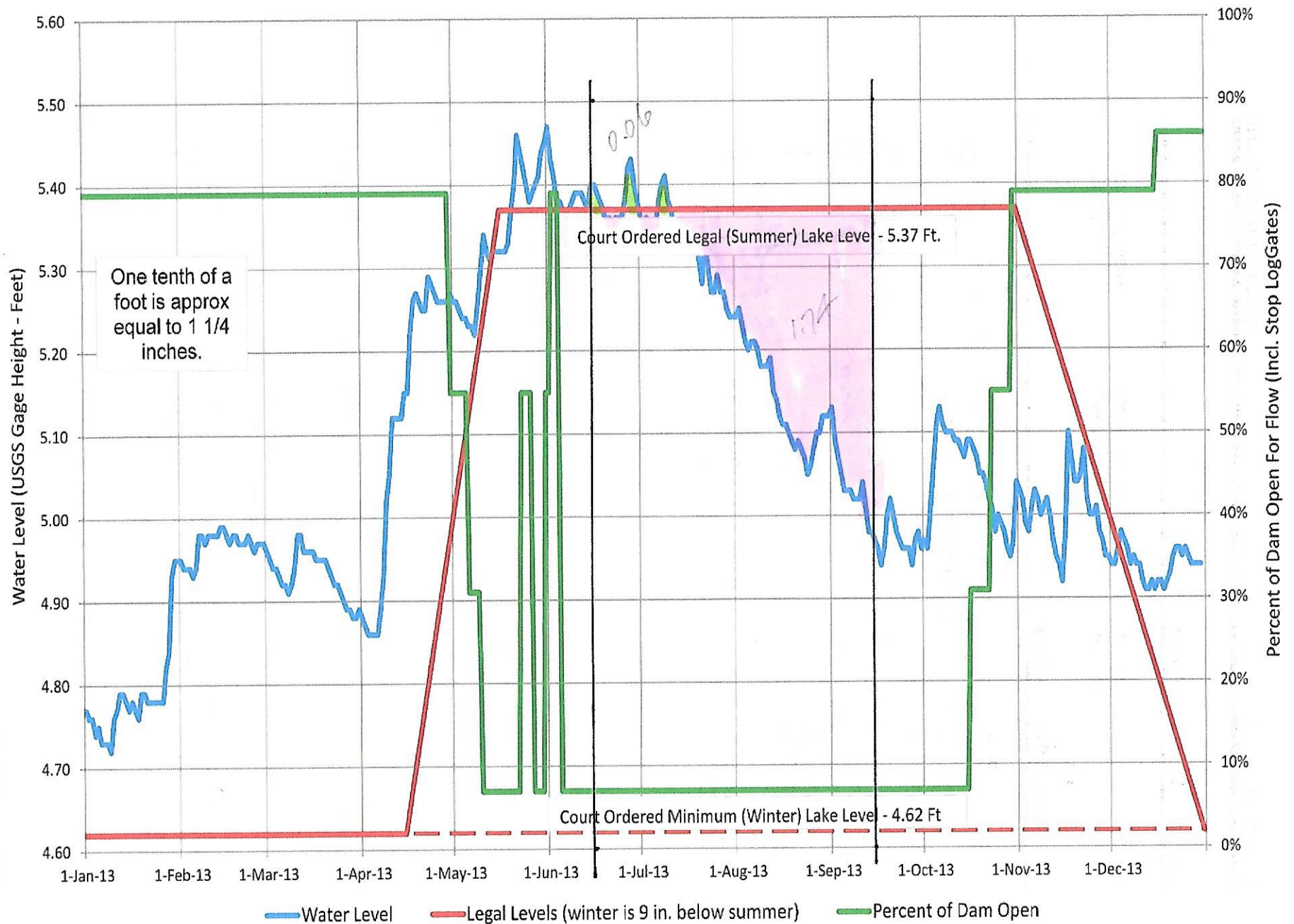




## 2014CY Higgins Lake -- USGS Daily Average Water Level

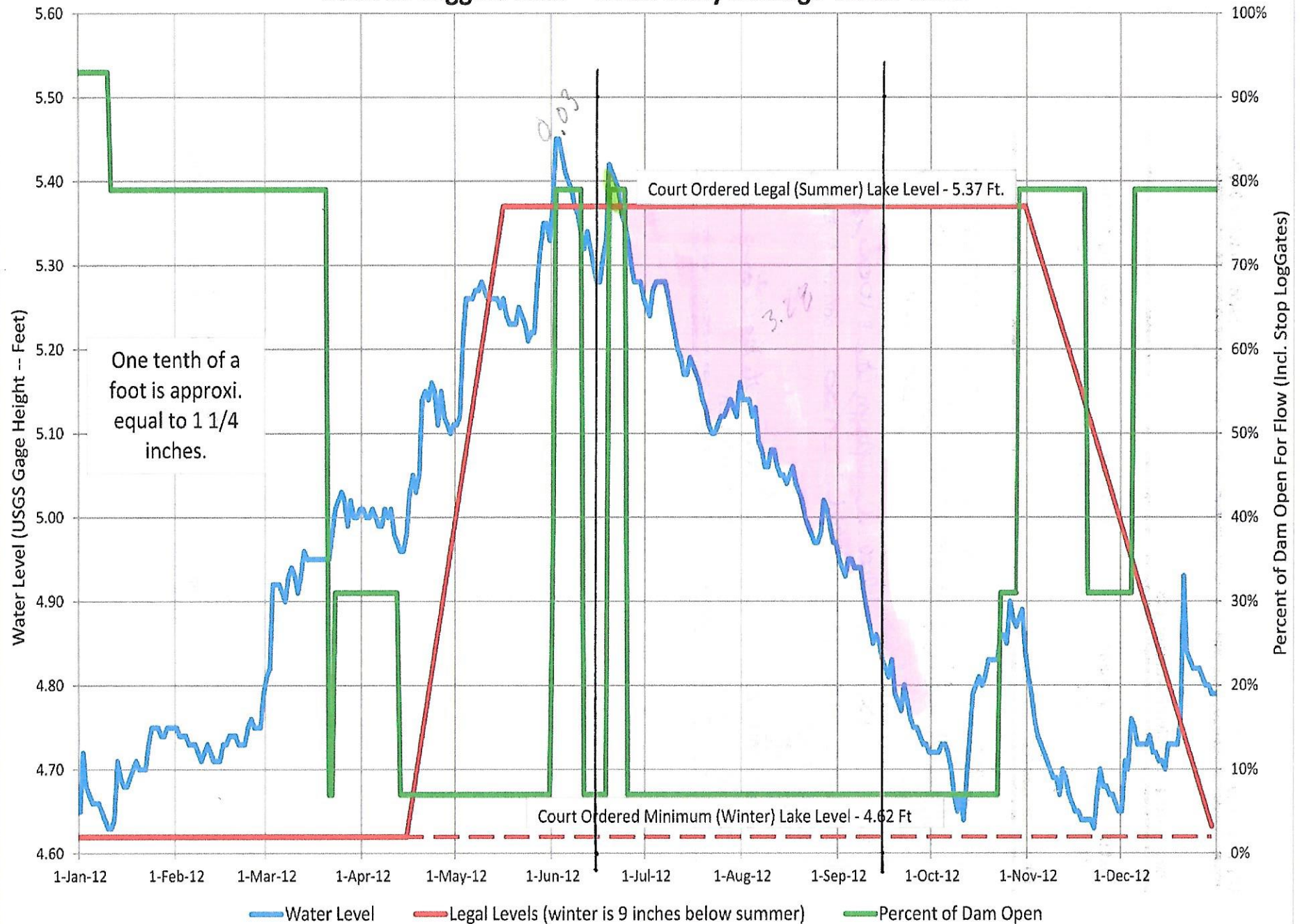


# 2013CY Higgins Lake -- USGS Daily Average Water Level

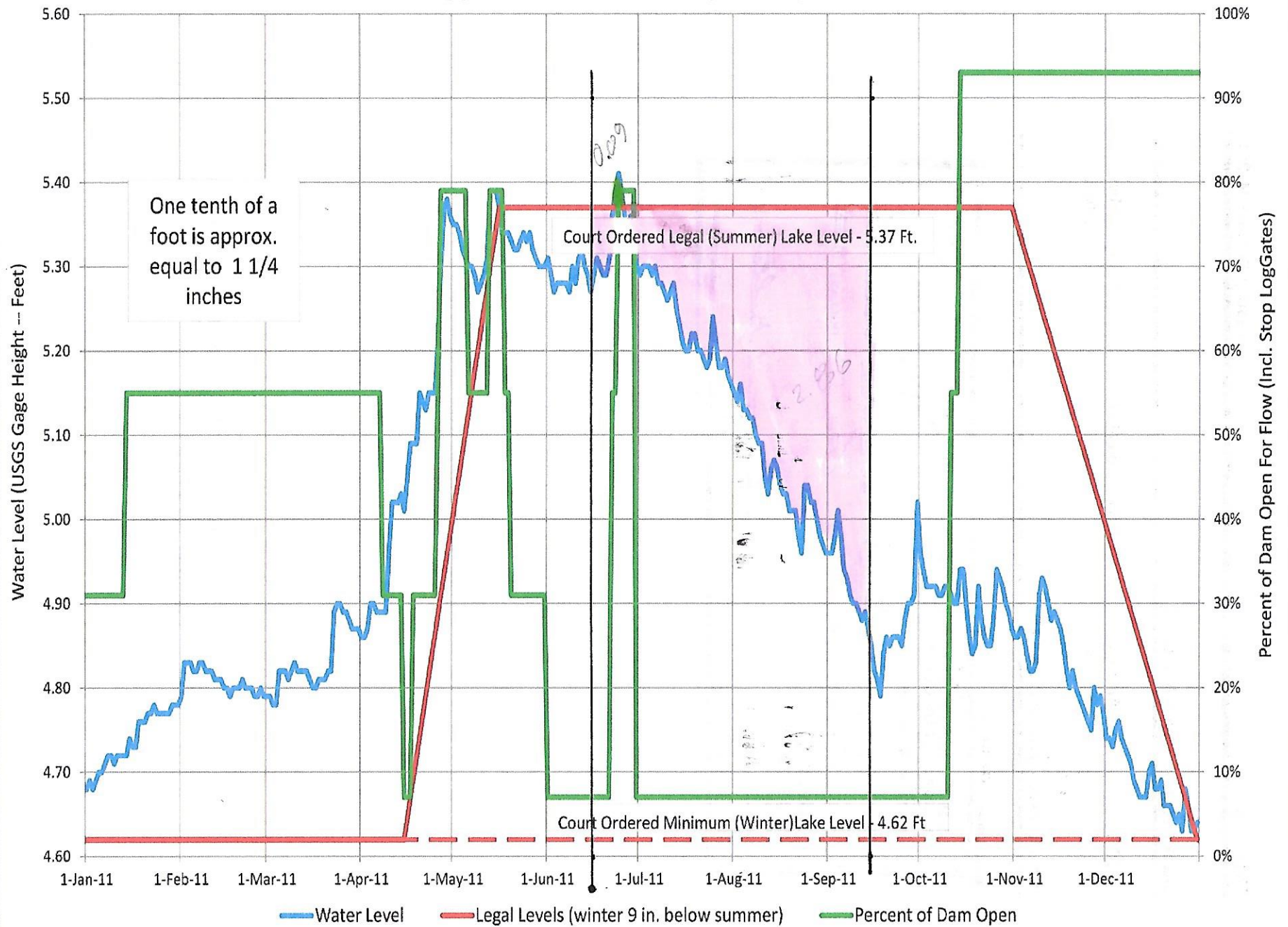




## 2012 CY Higgins Lake -- USGS Daily Average Water Level

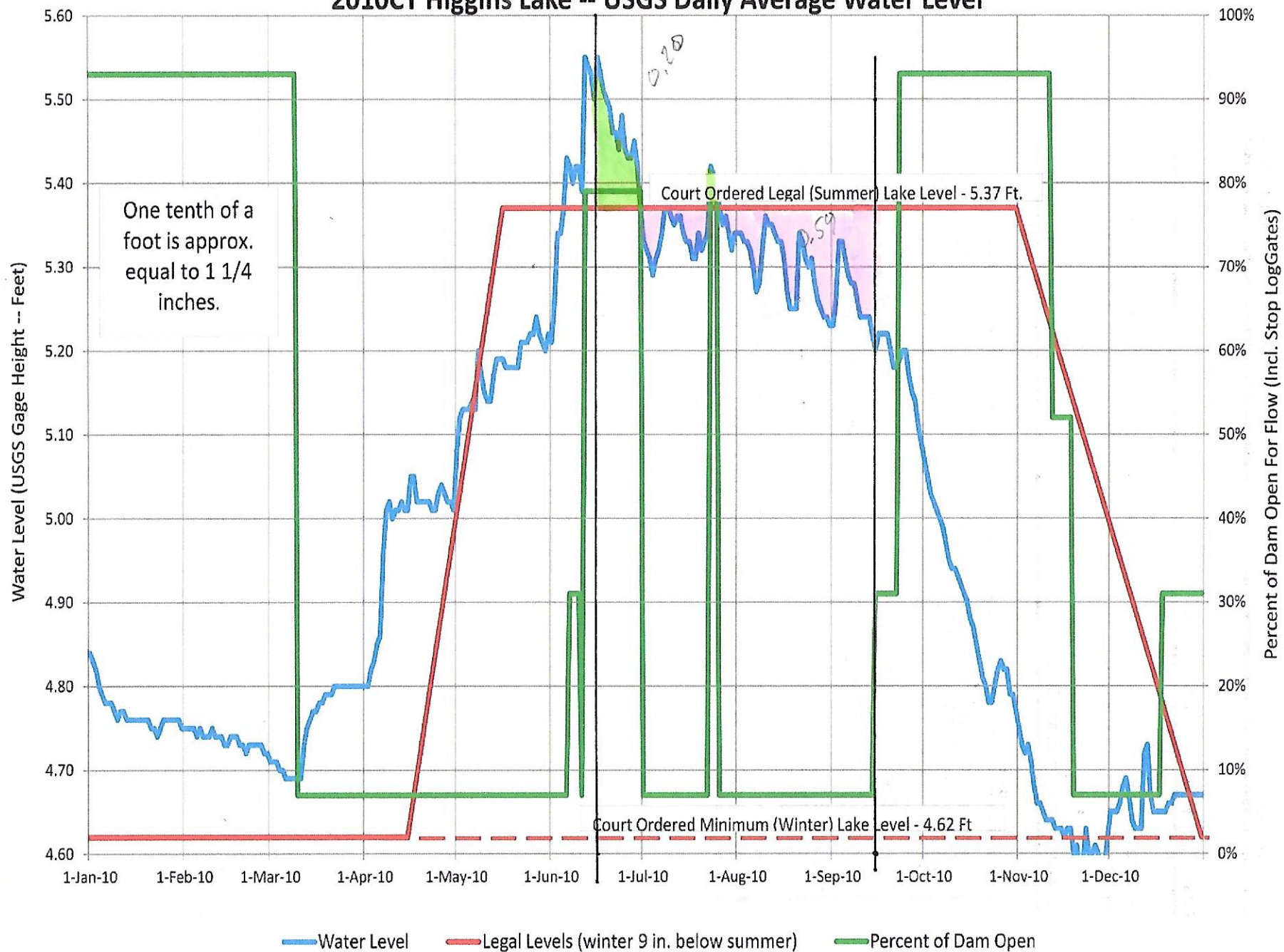


# 2011CY Higgins Lake -- USGS Daily Average Water Level

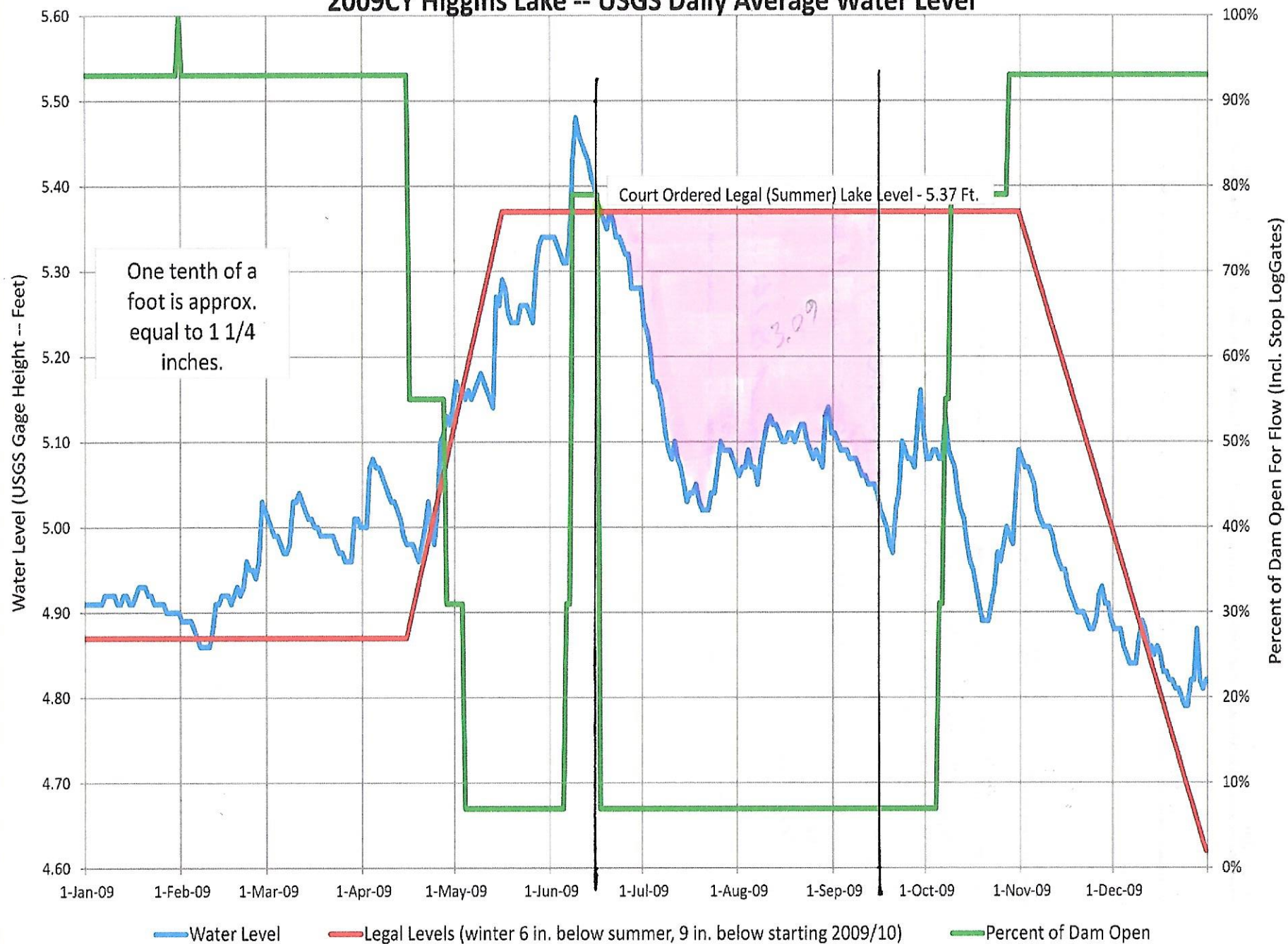




## 2010CY Higgins Lake -- USGS Daily Average Water Level

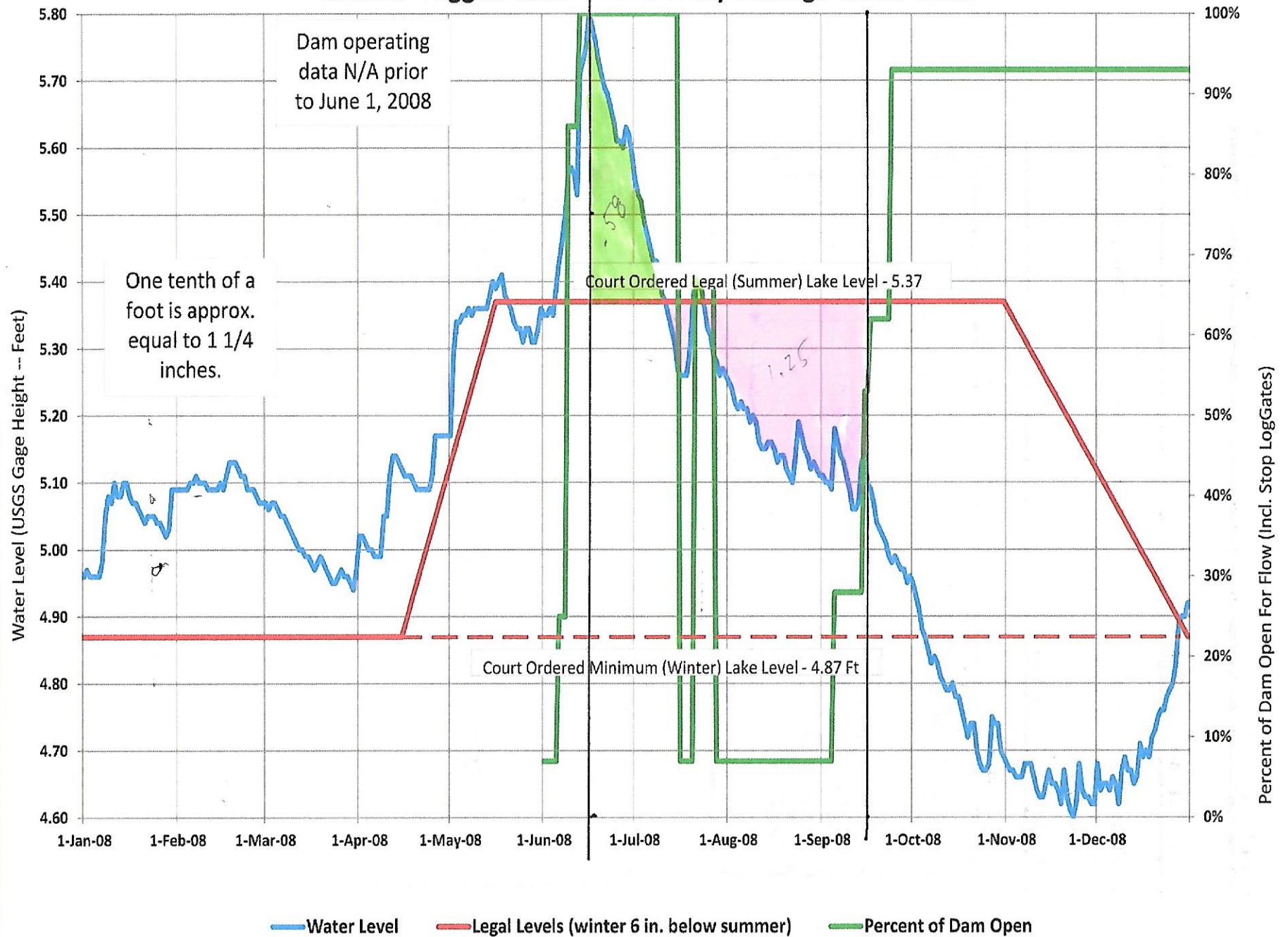


## 2009CY Higgins Lake -- USGS Daily Average Water Level





# 2008CY Higgins Lake -- USGS Daily Average Water Level



# 2007CY Higgins Lake -- USGS Daily Average Water Level

