

BEAR VALLEY SPRINGS ASSOCIATION  
Lake Quality Advisory Committee Agenda

8/6/2020 8:30 AM to 10:00AM

Location: ZOOM Topic: LQAC

Time: Aug 6, 2020 08:30 AM Pacific Time (US and Canada)

<https://us02web.zoom.us/j/83754849754>

Meeting ID: 837 5484 9754

Find your local number: <https://us02web.zoom.us/j/83754849754>

Call to Order at:

**A. Attendance:**

<b>Voting Members:</b>	<input type="checkbox"/> Janet Fulks, Chair <input type="checkbox"/> Fiona Nelson <input type="checkbox"/> Rick Flores <input type="checkbox"/> John Glaze <input type="checkbox"/> Scott Ostrem <input type="checkbox"/> Fred Hicks <input type="checkbox"/> Kimberly Clow <input type="checkbox"/> Linda Flores, Scribe
<b>Staff (Non-Voting):</b>	<input type="checkbox"/> Debbie Papac, BVSA Director, <input type="checkbox"/> Wes Shryock, General Manager, <input type="checkbox"/> Butch Reyburn Board Member

**B. Approval of Agenda ((Consent)**

**C. Approval of Minutes (Consent)**

July 9, 2020

**D. New Items: 2 items**

1.	Survey Results * summary to be attached
2.	Board Meeting Update
3.	Public Information, Communication and Social Media
4.	Potential Lake management information - SOLitude & Marine Chemists – Bid and services to be attached
5.	Testing – Coliform* results to be attached
6.	Current Lake Conditions – water quality, water volume, etc * updated results to be attached
7.	Water costs and sources – information from BVSA * attached below
8.	Potential Draft Letter to BVSA Board itemizing concerns * Draft to be attached
9.	Kids program

**E. Follow-Up Items: 0 item**

1.	Update on planting and lilies
2.	Update on fish populations and stocking
3.	Update on other issues popping up - docks etc
4.	Report from Rec Committee
5.	Bear Tracks Article
6.	Update on draft plan
7.	

Next Meeting Dates: Location TBD due to COVID 19 regulations, Sept 3, Oct 1, Nov 5, Dec 3.

Time of Adjournment:



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ITEM #1 Survey Results - from company

Item #4 – SOLitude Bid - to be added

Looking for a good reason to choose SOLitude? How about three?

1. Superior Training = Expert Care Our field staff are passionate, highly experienced and well-educated with degrees in Aquatic Biology, Ecology, Fisheries Biology, Environmental Science, and other related fields of study. We incorporate the most rigorous certification training and continuing education program in the industry to ensure that your lake or pond receives the best, most up-to-date care available anywhere. For details, visit [solitudelakemanagement.com/team](http://solitudelakemanagement.com/team)
2. Superior Technology = Innovative Treatment Methods Our staff is equipped with the most advanced technology, tools, products and equipment. We have developed countless proprietary treatments and continually participate in research trials to improve the environment as well as the solutions we provide our clients. To find out more, visit [solitudelakemanagement.com/services](http://solitudelakemanagement.com/services)
3. Superior Service = Unparalleled Customer Experience We offer a prompt, personal response to every service call. You will receive problem-free onsite remediation, maintenance and repairs, with little wait time and no need for return services. We provide you with the services and strategies necessary to maintain your aquatic system at its best and offer you education and insight every step of the way. To learn more, visit [solitudelakemanagement.com/education](http://solitudelakemanagement.com/education) You want the best for your property. You will get the best with SOLitude.

Call 888.480.LAKE (5253) to get started. In addition to providing superior service, we've made it our mission at SOLitude Lake Management® to continuously educate our clients and promote sound environmental stewardship. We feel it is important to not only be good stewards of the environment, but also to fulfill core values to "take action and be accountable" and to "protect and respect nature." Our staff actively volunteers to help our local communities in need and follows sustainable practices to help fulfill our overall mission for creating a better world.

The SOLitude Mission Preserving and Protecting Ecological Balance The SOLitude Sustainability Pledge We hereby pledge...

- To provide sustainable and renewable lake, pond and wetland management solutions.
- To help preserve and, wherever possible, improve the natural ecological balance of our surroundings and the communities we serve.
- To recycle and reuse all non-renewable resources to the greatest extent possible.
- To replace older lake and pond management technology with the latest environmentally friendly solutions.
- To provide our clients with integrated and sustainable lake and pond management strategies that reduce the need for pesticides.
- To utilize the most ecologically friendly herbicides that allow for safe, selective and systemic plant growth control.
- To help restore and maintain ecological balance by providing solutions that work in harmony with nature to achieve lasting results.

For a general number to bring to the board meeting I would park around \$70,000. This would be broken into 12 monthly payments. Again, this is a ballpark including all herbicides, labor, equipment, materials needed. This does not include any fisheries, drainage work, or pulling of aeration units. However, this will clearly include two technicians on site for an entire day, conversations and advice on all of those things not included. Visual inspections of the aeration

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units will be included but we are hopeful that your volunteers will help with cleaning the aeration screens. This can be taught :) if needed.

See Google drive for additional documents on timeline, electrofishing etc. A full bid will require a visit from their scientists in the Bay area.

### ITEM #5 – Testing Coliforms - test requested July 21

### Item #6 – Water Quality

Phosphate data V7

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1				Effluent started May 1, 2020											
2	Location	Latitude	Longitude	4-19-20	4-29-20	5/3/2020	5-25-20	5-29-20	6-1-20	6-7-20	6-25-20	7-21-20			
3	Buoy A	35°09'43.3"N	118°39'29.9"W	0. mg/l	0.06 mg/l	0.06 mg/l	0.1 mg/l	0.1 mg/l	0.14 mg/l	0.16 mg/l	0.26 mg/l	0.26 mg/l			
4	Buoy B	35°09'52.4"N	118°39'34.4"W	0.04 mg/l	0.06 mg/l	0.06 mg/l	0.1 mg/l	0.04 mg/l	0.14 mg/l	0.18 mg/l	0.24 mg/l	0.34 mg/l			
5	Buoy C	35°09'53.9"N	118°39'30.0"W	0. mg/l	0.02 mg/l	0.04 mg/l	0.08 mg/l	0.06 mg/l	0.14 mg/l	0.14 mg/l	0.26 mg/l	0.24 mg/l			
6	Buoy D	35°09'50.6"N	118°39'27.8"W	0. mg/l	0.04 mg/l	0.06 mg/l	0.1 mg/l	0.14 mg/l	0.1 mg/l	0.18 mg/l	0.24 mg/l	0.28 mg/l			
7	Buoy E	35°09'49.3"N	118°39'24.2"W	0. mg/l	0.06 mg/l	0.06 mg/l	0.04 mg/l	0.12 mg/l	0.08 mg/l	0.22 mg/l	0.22 mg/l	0.3 mg/l			
8	Buoy F	35°09'47.0"N	118°39'22.0"W	0. mg/l	0.06 mg/l	0.06 mg/l	0.12 mg/l	0.14 mg/l	0.1 mg/l	0.22 mg/l	0.2 mg/l	0.2 mg/l			
9	Buoy G	35°09'46.7"N	118°39'26.0"W	0. mg/l	0.06 mg/l	0.06 mg/l	0.1 mg/l	0.1 mg/l	0.12 mg/l	0.18 mg/l	0.24 mg/l	0.26 mg/l			
10	Buoy H	35°09'44.6"N	118°39'20.9"W	0.02 mg/l	0.06 mg/l	0.06 mg/l	0.06 mg/l	0.08 mg/l	0.1 mg/l	0.18 mg/l	0.22 mg/l	0.26 mg/l			
11	Lake fill 2			NC	NC	NC	NC	NC	0.02 mg/l	NC	NC				
12															
13															
14	Key in mg/L														
15	0.01-0.02	Uncontaminated													
16	0.021-0.099	Growth stimulated													
17	0.1	Max acceptable													
18	>0.1	Consequential problems													
19	>0.14	Extreme problems													
20	Blue text indicates 2" precipitation														
21															
22	NW=	No water													
23	NC=	Not collected													
24															
25															
26															
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Date / Time	Temp [°F]	pH [Units]	SpCo nd [mS/cm]	SpCo nd [μS/cm]	Res [kO-cm]	Sal [ppt]	TDS [g/l]	NO3- [mg/l -N]	NO3- [mV]	pHVo lts [mV]	LDO% [Sat]	LDO [mg/l]	LDO_ BP [mm Hg]
7/21/2020 AM	77	8.2	0.7	692	1	0.4	0.4	0.6	169.6	-61.8	27.9	1.9	635
7/13/2020 PM	79.5	8.2	0.7	667.3	1.2	0.3	0.4	0.5	174.7	-62	42.4	2.8	635
7/13/2020 AM	76.2	8.1	0.7	666.6	1.3	0.3	0.4	0.5	172.6	-58.2	14.4	1	635
7/8/2020 AM FI_JH _CL	72.6	8.6	0.7	656.7	2	0.3	0.4	0.5	171	-82.1	45.4	3.3	635
7/8/2020 AM	72.6	8.6	0.7	656.8	2	0.3	0.4	0.5	171	-82.1	45.5	3.3	635
7/8/2020 PM	76.5	8.5	0.7	659.6	2	0.3	0.4	0.5	174.6	-81.7	63	4.3	635
7/3/2020 AM	72.7	8.5	0.6	646.7	2	0.3	0.4	0.6	169.3	-76	28.6	2	635

\*Note AM low DO PM raises a little. DO of 4.0 needed for healthy fish  
 Temperature and DO correlate  
 pH decreasing

Timing and quantity of ongoing testing

Phosphate increasing



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Water level decreasing - no non-potable water after multiple requests from Brandon, Wes, Fred and myself reminding everyone

**Item #7 Water Costs**

Here are the proposed rate adjustments affecting the Association, which, if approved, will be imposed starting on May 1, 2019, and then on January 1 in years 2020, 2021, 2022 and 2023 in the amounts stated, unless revised by the District:

Customer Class	Code	Current	2019	2020	2021	2022	2023
<b>Monthly Base Charge</b>							
Commercial	CO	\$25.33	\$43.06	\$73.20	\$76.86	\$80.71	\$84.74
<b>Volumetric Charge</b>							
<b>Potable Water Rates</b>							
<b>Volumetric Rates Per HCF</b>							
1 to 5 HCF		\$2.00	\$2.80	\$3.78	\$3.78	\$3.78	\$3.78
6 to 10 HCF		\$2.85	\$4.36	\$5.34	\$5.34	\$5.34	\$5.33
11 to 20 HCF		\$3.25	\$4.36	\$5.34	\$5.34	\$5.34	\$5.33
21 to 40 HCF		\$4.45	\$4.36	\$5.34	\$5.34	\$5.34	\$5.33
41 to 60 HCF		\$6.20	\$4.36	\$5.34	\$5.34	\$5.34	\$5.33
61 to 80 HCF		\$8.45	\$4.36	\$5.34	\$5.34	\$5.34	\$5.33
Over 80 HCF		\$10.50	\$4.36	\$5.34	\$5.34	\$5.34	\$5.33
<b>Effluent</b>		\$2.20	\$3.08	\$4.16	\$4.16	\$4.16	\$4.16
<b>Irrigation</b>		\$2.44	\$3.42	\$4.61	\$4.61	\$4.61	\$4.61

cost difference and actual HCF's [https://drive.google.com/file/d/1V0yM3EK63IIT34HP\\_6YMGzK3wheU-ST/view?usp=sharing](https://drive.google.com/file/d/1V0yM3EK63IIT34HP_6YMGzK3wheU-ST/view?usp=sharing)

July 2019 – 2020 costs using effluent	Cost per HCF			Total HCF Used	Total cost
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Effluent \$39,301	4.16			9,447.36	\$39,301.00
Non-potable \$53,184	4.61			11,536.66	\$53,184.00
Potable \$186,940	5.34			35,007.49	\$186,940.00

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55,991.51	\$279,425.00
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Cost to irrigate without effluent	Cost per HCF				Moving effluent to nonpotable	Total hcf used	Total cost
Effluent	4.16			0		0	\$0.00
Non-potable \$53,184	4.61			11,536.66	9,447.36	20,984.02	\$96,736.31
Potable \$186,940	5.34					35,007.49	\$186,940.00
						<b>55,991.51</b>	<b>\$283,676.31</b>

Irrigation cost difference		Benefits	Issues
Using effluent	\$279,425.00	recycles water	More costs to remediate
Without effluent	283,676.31	Cold water, high DO, low nutrients	Not using recycled water on golf course
<b>Net result</b>	<b>-\$4,251.31</b>		

Note - For simplification of calculations the max rate for potable was used

**Item #8 – Potential Draft Letter Points**

1. Managing lake quality is difficult, there are many variables and BVS lakes, particularly Four Island has historically stored a lot of nutrients making it less resilient and more reactive. This is the result of years of accumulation, which continues to increase due to low/no water flow through the lakes and banking in the sediment.

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2. Vegetation works in runoff – don't regrade without collaboration, don't add **cemented ditches and pipes** which transport high nutrient content down the line and are ultimately **harmful and undesirable**.
3. The transfer center run-off nutrients were high, but retention basins and redesign of the transfer center will reduce - collaboration necessary LQAC/BVSA/CSD
4. The **high data readings and poor lake quality were initiated when effluent began to flow**, exacerbating nutrient problems (increasing nutrients by 260 times greater than the winter/early spring from 0.0mg/l Phosphate to 0.26 mg/l - uncontaminated equals less than 0.02 mg/l P). dealt with through education. **The effluent situation must be controlled** - collaboration necessary LQAC/BVSA/CSD.
5. The current water treatment plant **permit** addresses responsibilities to BOTH CSD and BVSA. The agreement is agronomic - meaning the water usage is only for golf course use as needed and run-off is outside of the permit. CSD produces and BVSA consumes, the permit does not allow over production, effluent flow must prevent runoff. Due to the current schedule committing the golf course to effluent flow one month in advance with no adjustment within the month, run-off is occurring. The production to the BVSA **MUST BE the result of consumption not the result of production** - collaboration necessary LQAC/BVSA/CSD
6. Currently, BVSA pays for the effluent and then pays again to mitigate nutrients from the over-supply of effluent and contamination of the lake. The effluent amount is not regulated on a regular and reasonable schedule. BVSA needs more flexibility on regulation of the flow in order to be responsive to the needs of the golf course to prevent run-off - collaboration necessary LQAC/BVSA/CSD. Alternatively purchase non-potable at a cost of only about \$4000 more.
7. Solitude Lake Management - potential ???