Saltwater Pool Discussion -- In response to a query regarding conversion to saltwater pools, the Operations Committee reviewed input from Anchor Aquatics concerning the feasibility of such conversion during our July 20, 2023, meeting. While acknowledging benefits such as comfort due to softer water and reduced chlorine odor in the indoor pool, cost analysis shows conversion to be a costly upfront capital expense, not covered by replacement reserves. Estimated conversion cost for all pools is $63K; indoor pools only $31.5K.

Consensus of the Operations committee is that, while there are desirable benefits from a saltwater pool, the conversion costs are too expensive to justify on a financial basis. Life cycle costs are very speculative, but our review indicates long term savings cannot be assumed. Our existing pools are well used. This is the same general conclusion reached in two previous considerations by the Operations committee. The topic is complex and additional considerations are listed below, including questions and responses from Anchor Aquatics.

Addendum

-- Salt Water Pool Description

SV's current pools are sanitized by addition of chlorine based on regular testing of the pools to maintain Ph and required chemical levels. SV pools also have an automated chemical system (CAT) which gradually introduces chemicals and avoids the need to shut down pools during manual adjustments.

Saltwater pools use a chlorine generator which produces chlorine by adding salt and converting to chlorine using a salt cell. Both pool types are sanitized by chlorine. Saltwater pools also have about 3500 ppm salt content, which is about 10 percent of the salt content in seawater. The result is softer water than experienced in chlorine only pools. Salt corrosion is often listed as a disadvantage but Anchor Aquatics does not feel this is a major concern. They manage both salt water and regular chlorine pools.

-- Conversion of SV pools to Saltwater

Anchor Aquatics estimates that conversion of both indoor and outdoor pools would require purchase of four chlorine generators; two for

the outdoor pool, one for indoor pool and one for the spa. The CAT systems (one indoor and one outdoor) would have to be upgraded for use with a saltwater system. Anchor estimates the cost of the generators as $12-13K. Estimated upgrades for the CAT systems would be $7500 per pool. Using the lower generator cost estimate, the upfront capital expenditure would be $63,000. It is possible to do the indoor pool only but it would be advisable to do the spa also. The spa is a bromine pool and should switched to match the indoor pool. Upfront cost for indoor pool and spa would be $31,500.

-- Life Cycle Costs

The $63K costs to convert the pools would be a sunk cost and budgeted as a new capital expense. Going forward, life cycle cost would compare chemical (primarily chlorine) cost avoidance with the costs to maintain and eventually replace the generators. Anchor estimates the chemical cost savings for the first year would be $3500. This is based on current SV chlorine usage offset by the need to purchase salt. Some chlorine needs to be stored even for saltwater pools as a secondary sanitizer. There is also an expected increase in oxygen requirements, possibly as much as $1000/yr.

The chemical costs are speculative and vary with pool usage rates and environmental factors. The cost of chlorine is also volatile and Anchor's providers have recently stopped "locking in" their commodity price. So, the chemical costs will likely vary over time.

Chlorine generators also have maintenance costs which are not known upfront. Anchor manages other saltwater pools (e.g., Oyster Cove) and could include this maintenance in our SV service contract. Volunteer pool operator needs would remain the same.

Anchor projects generators to last 3-5 years. This is consistent with other literature which suggests 3-7 years. Our pools are used for different times of the year so generator life will vary by pool. The replacement costs would be included in replacement reserve contributions.

Even assuming a conservative generator life of 7 years and projecting the current $3500 chemical advantage, almost $7000/yr would be required in the reserves to cover the $48K cost of the generator replacement after 7 years. This projects a $3500 annual deficit that does not account for

maintenance and repair of the generators or miscellaneous costs such as increased oxygen use. I have requested data from Anchor regarding their Oyster Cove saltwater pool.

Discussions with other pool companies in 2021 resulted in mixed opinions regarding saltwater pools but no consensus. The wild card seems to be the cost of chlorine. Higher chlorine costs would be more favorable for conversion to saltwater pools, but it would need to be a significant increase. Shorter replacement cycles for the generators, on the other hand, is likely move the needle the other direction. As previously stated, life cycle cost savings cannot be assumed with conversion to a saltwater pool.

Joe Sikes, Operations Committee Chair -- August 1, 2023

Fact Finding Regarding Saltwater Pools
Anchor Aquatics response

Question #1 – *Company Experience with Saltwater Pools*

Does Anchor Aquatics maintain saltwater pools. Do you do a preponderance of regular chlorine pools? Have you installed or transitioned any pools to salt water?

We maintain several commercial Saltwater chlorinated pools but liquid chlorine is by far the majority.

Question #2 – *What size generator would be needed for SV indoor and outdoor pools. Would there need to be separate ones for each pool?*

One 6.0 Generator for the indoor pool, Two 6.0 generators for the outdoor pool, One 6.0 generator for the spa

Question #3 – *Costs*

What is the annual cost of chlorine for each SV pool? Is there concern about rising costs in the future? How much would be saved (rough estimate) by transition to salt?
Do you have experience in the frequency of generator replacement in saltwater pools?

Cell costs are $12K-$13K per cell installed. Chlorine still must be stored and used as secondary sanitizer. CAT systems would need upgraded at a cost of $7500/pool to do it right. Savings estimated at around $3500 the first year and then adjusted based on actual chlorine use from prior year from then on. Generator replacement is very dependent of run times. The spa will run very little therefore likely be the longest lasting. The outdoor pools work hard but only for a fraction of the year. The indoor pool has a medium load but operates year round. Average life is around 3-5 years. Maybe more.

Question #4 – *Other Equipment*

Does other pool equipment would need to be replaced so it is compatible with salt water? If so roughly how expensive would it be?
In our experience adding salt at the recommended levels should not have an measurable effect of the existing equipment. The salinity levels are 3500 - 5000 ppm and under. Supposedly salinity levels above 6000 ppm there may be corrosion damage to some of the metallic equipment,

Question #5 – *Considerations*

In your experience , are there other noteworthy issues in considering a conversion?

Water feels softer. Gentler on the skin. Important to note that it's still a chlorinated pool. Some operational savings but I don't recommend purchasing as a money saving venture. Good sanitization. Less chlorine smell in indoor pool. Eliminated need for bromine use in spa. Convenient . Costly startup and replacement cells as needed.

https://www.hayward-pool.com/shop/en/commercial/saline-c-60-c-sasali--1