

From: LSJ <[REDACTED]>

To: jeevacation@gmail.com

Cc: John Christensen <[REDACTED]>, [REDACTED], [REDACTED]
<[REDACTED]>, Richard Kahn <[REDACTED]>

Subject: Fwd: FYI

Date: Thu, 30 Mar 2017 20:33:26 +0000

Attachments: Little_St._James_WaterCheck_Extensive_Master_Bedroom_03-14-17.pdf

Inline-Images: image001.png

Jeffrey

Attached comments from Patrick regarding water analysis , for your review

Regards Brice

Sent from my iPhone

Begin forwarded message:

From: Patrick Adams <[REDACTED]>

Date: March 30, 2017 at 2:10:33 PM MDT

To: LSJ <[REDACTED]>

Subject: RE: FYI

Good afternoon Brice,

Attached is the water report you sent to me. I highlighted a few items on it that I would like to comment on. First off, the water report does pass primary drinking water standards, but it does have some significant problems with the quality due to poor post treatment practices in the plant. Of course we have remedied these problems as I'm sure you will notice when re-testing the distributed water.

Comments in order of water analysis;

Note Yellow highlighted constituents.

1. Sodium. 152 Mg/l. This is high due in part to the membrane issues that were resolved by changing out elements earlier this month.
2. Alkalinity. 26 mg/l. This Alkalinity number is shown as Calcium Carbonate. The number is low indicating that no post treatment has been done to the permeate SWRO water. Typically, this number should be between 40-60 Mg/l. Without proper alkalinity in the water, it is extremely aggressive in nature and will cause severe corrosion to water heaters and fixtures.

3. Hardness. 74 Mg/l. This number should be closer to the alkalinity number considering that the alkalinity number is shown in Calcium Carbonate. Because it is higher, it shows that the aggressive permeate water has been corroding the lime in the cisterns to satisfy its desire to return to a neutral state. This is what Jamaal found to be going on during his service visit to LSJ. There was no chemical injection and calibration going on during post treatment and the water was severely imbalanced. Jamaal rectified this by adjusting the post treatment chemical feed pump and balancing it using flows through the calcium carbonate reactor to reach the state of 36 Mg/l Alkalinity and 40 Mg/l calcium or Hardness.
4. Total dissolved solids. 500 Mg/l. TDS is at maximum allowable levels. Of course this is another constituent that will no longer be a factor with the newly installed membranes.
5. Chlorides. 240 Mg/l. Here again, almost at maximum levels but is expected with high TDS of the water. Another non-issue now that there are new membranes.

In short, with the SWRO plant putting out good quality water now, the only job left for the operator is to insure that proper post treatment is being done with the Ph running 7.4-7.8, Alkalinity running 40-60 Mg/l, and the hardness of 2-3 Grains per Gallon , 2-3 drops to turn blue, or 34-50 Mg/l. (All three of these hardness numbers are exactly the same). Post treatment chemical levels need to be maintained, Calcium Carbonate needs to be kept up with in the reactor and not allowed to run out, and simple adjustments using only the Reactor's By-Pass Valve to slightly open or close the valve to achieve the results listed above.

Best Regards,

Patrick Adams
General Manager
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Anguilla, BWI, AI-2640

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From: LSJ [<mailto:>]
Sent: Thursday, March 30, 2017 2:48 PM
To: Patrick Adams < >
Subject: FYI

Sent from my iPhone