

Nora Johnson

From: Dave Underwood [mailto:dave.underwood@districtofbarriere.ca]
Sent: Thursday, July 25, 2019 4:37 PM
To: Nora Johnson
Cc: Colleen Hannigan; Thierry Carriou; Doug Borrill
Subject: District of Barriere Water Supply Strategy

Hi Nora,

FOR INFORMATION

Further to your inquiry, I have prepared this correspondence to provide you with some general information regarding the recommended water supply strategy for the District of Barriere.

As you are aware, BC Groundwater (BCG) has been commissioned to complete remediation work at Bradford Park PW3. Thierry Carriou is overseeing this work on behalf of BCG. Thierry has advised that PW1 has been pump developed to 300 USgpm to a condition approaching the A100 specification. It should not be run until PW3 is remediated successfully.

As such, the District's Operating Plan should consist of 100% utilization of Deep Well 2 until remediation works at PW3 are complete.

As discussed at the Council Meeting of July 15, Thierry has reminded Staff and Council that Deep Well 2 appears to have been over-pumped for some time. As such, the sustainability of Deep Well 2 has been called to question.

At the Council Meeting of July 15, Council directed staff to determine the cost associated with reconnecting Deep Well 1 to the system. Mr. Borrill and I have looked at this and I can advise that the electrical and mechanical connections required for Deep Well 1 are straightforward. BCG has been contacted to provide pricing related to preparing DW1 for testing, prior to this well possibly being reconnected to the system. That pricing was forwarded directly to the District by BCG on July 23.

In the event of a mechanical (or other) failure of Deep Well 2, we advise that the District shall immediately connect Deep Well 1 to the system. We understand that Deep Well 1 is mineralized and contains elevated concentrations of iron and manganese. We also understand that the former water treatment plant is no longer functional. As you are aware, manganese is now a Health-based Objective under the Canadian Drinking Water Quality Guidelines. As such, we do not recommend bringing DW 1 online to blend with DW 2.

TRUE has meet with Interior Health regarding the process to be followed if DW 1 is connected to the system without treatment. In an emergency situation, if the District needs to bring Deep Well 1 online for emergency supply, the following sequence is to be followed:

1. Sample the water and provide raw water lab results to IHA once the camera inspection has been completed under BCG oversight
2. Ensure the Water Quality Advisory is in effect (Diana confirms that it is still in place as of this date)
3. Mechanically/electrically connect DW 1 to the system (No construction permit will be required)
4. Inform IHA that DW1 has been put in to operation
5. Conduct weekly lab testing of water quality within the water distribution system (work with IHA to determine the preferred sampling locations)
6. Record pump hours for all sources
7. Remain in close contact with IHA as to source water status vs time

As it relates to the possible use of PW1, Thierry Carriou has advised:

"if Barriere finds itself in a situation where Deep Well No. 2 goes down, then they will have zero water given our understanding that:

- Deep Well No. 1 is not online; and
- Upper Birch Lane is disconnected.

Given that there will be no other well but PW1 available, and the risk posed by fire, then Barriere can run that well with the known risk if they choose."

In summary, it is advised that the District of Barriere utilize Deep Well 2 as its supply source during the remediation of PW3. In the meantime, we recommend that the District take the next steps as it relates to preparing to bring Deep Well 1 back on line in an emergency situation. Please refer to correspondence from BCG on July 23 in this regard. We also advise that the District follow the above-noted procedures if/when DW 1 is brought on line without treatment. We do not recommend bringing DW 1 online to blend with DW 2 due to the manganese concentrations in the raw water of DW 1. In an absolute worst-case scenario, the District can consider bringing online PW1 to 300 USgpm with the known risk to PW3 if need be.

As mentioned, I am away on vacation next week but will be available by cell phone (778-220-6929) if need be during Council on Monday.

In the meantime, do not hesitate to call should there be any questions.

Regards,

Dave



Dave Underwood, P. Eng.

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author. If you are not the intended recipient, please contact the sender by reply email and destroy all copies of the original message. Thank you.

From: Thierry Carriou [<mailto:tcarriou@bcgroundwater.ca>]
Sent: Wednesday, July 24, 2019 2:44 PM
To: Mayor; Colleen Hannigan; Nora Johnson
Cc: stamerje@gmail.com; Doug Borrill; 'Dave Underwood'; Dustin Doherty
Subject: Follow-Up

Mayor, Council, Colleen and Nora,

FOR INFORMATION

The following lays out some anticipated next steps for each well after the currently proposed scope of work is completed, per Nora's request:

Bradford Park PW3

- Reinstall the pump and chlorinate the well (MVE)
- Carry out a pumping test to bring the well back into A100 specification for BCGW certification and Interior Health approval (BCGW)
- Commission

Spruce Crescent DW#1

- Re-develop the well screen by isolation pumping (JRDC) – may not be required ?
- Reinstall the pump and chlorinate the well (BCGW)
- Carry out a pumping test to bring the well back into A100 specification for BCGW certification and Interior Health approval (BCGW)
- Commission

Best regards,

Thierry