

Howatt, Kathy

From: Mower, Barry F
Sent: Tuesday, November 10, 2020 7:54 AM
To: Mcglauffin, Arthur T; Howatt, Kathy
Cc: Mohlar, Robert C
Subject: RE: Shawmut Project 2016 Water Quality Data

Rob and I had a discussion about discharges and he does not agree that the nighttime DO decline is necessarily due to the discharges. My feeling is that the nighttime reduction in DO is due to respiration of plants. Plants need nutrients to grow. Knowing that there are discharges from Skowhegan and the mill which discharge nutrients, I think it is not unreasonable to believe that the slight reduction in DO is due to those and other sources, point and non-point. I would not expect a significant reduction in a completely forested watershed.

Nevertheless, I think we all agree that the hydro project is not likely the cause.

From: Mcglauffin, Arthur T <Arthur.T.Mcglauffin@maine.gov>
Sent: Tuesday, November 10, 2020 7:21 AM
To: Mower, Barry F <Barry.F.Mower@maine.gov>; Howatt, Kathy <Kathy.Howatt@maine.gov>
Cc: Mohlar, Robert C <Robert.C.Mohlar@maine.gov>
Subject: RE: Shawmut Project 2016 Water Quality Data

I'd like to clarify my comments on November 3rd: From the data available, I am not able to conclude that the slight DO excursions on the mornings of August 9 – 11, 2016 were due to the operation of the dam or the existence of the impoundment. Whether or not the excursions were due to upstream discharges is also unknown.

From: Mower, Barry F <Barry.F.Mower@maine.gov>
Sent: Monday, November 09, 2020 6:36 PM
To: Howatt, Kathy <Kathy.Howatt@maine.gov>
Cc: Mcglauffin, Arthur T <Arthur.T.Mcglauffin@maine.gov>; Mohlar, Robert C <Robert.C.Mohlar@maine.gov>
Subject: RE: Shawmut Project 2016 Water Quality Data

Kathy

Bottom line is that we see no impact of the Shawmut project on the low DO. See email trail below for details.

From: Mcglauffin, Arthur T <Arthur.T.Mcglauffin@maine.gov>
Sent: Tuesday, November 3, 2020 11:13 AM
To: Mower, Barry F <Barry.F.Mower@maine.gov>; Mohlar, Robert C <Robert.C.Mohlar@maine.gov>
Subject: RE: Shawmut Project 2016 Water Quality Data

No, I'm done. I suggest waiting, perhaps, until Rob comments. He had an appointment this morning and, probably, won't respond until this afternoon at the earliest.

From: Mower, Barry F <Barry.F.Mower@maine.gov>
Sent: Tuesday, November 03, 2020 11:05 AM
To: Mcglauffin, Arthur T <Arthur.T.Mcglauffin@maine.gov>; Mohlar, Robert C <Robert.C.Mohlar@maine.gov>
Subject: RE: Shawmut Project 2016 Water Quality Data

Art

Are you still working on this question, or are we ready to tell Kathy that there is no influence of hydro on the low DO?

From: Mcglaflin, Arthur T <Arthur.T.Mcglaflin@maine.gov>
Sent: Tuesday, November 3, 2020 8:11 AM
To: Mower, Barry F <Barry.F.Mower@maine.gov>; Mohlar, Robert C <Robert.C.Mohlar@maine.gov>
Subject: RE: Shawmut Project 2016 Water Quality Data

Barry,

I agree with your assessment of the data:

- 1) The DO excursion below 5mg/l below the impoundment's thermocline on June 30, 2016 occurred when there was still refuge in waters meeting criteria (DO > 5 mg/l and Temp < 24C) above the thermocline.
- 2) The slight DO excursions below 7 mg/l in the tailwater on mornings of August 9-11, 2020 are likely due to algal respiration and declining flow rates for the mixing of discharges upstream. The DO excursions below 7 mg/l ceased with an increase in river flow rates on August 12. There was no rainfall recorded in Augusta in that period, but there may have been runoff from showers in the mountains working its way through the river system.

We may be able to tease more out of the DO and temperature data using WRDB and tabular flow data from USGS Madison and, perhaps, any DMR data for the dischargers upstream (SAPPI, Skowhegan WWTF, Norridgewock WWTF).

Art

From: Mower, Barry F <Barry.F.Mower@maine.gov>
Sent: Monday, November 02, 2020 3:45 PM
To: Mohlar, Robert C <Robert.C.Mohlar@maine.gov>
Cc: Mcglaflin, Arthur T <Arthur.T.Mcglaflin@maine.gov>
Subject: FW: Shawmut Project 2016 Water Quality Data

Rob/Art

My review of the data is that the impoundment data show only one date when DO<5 mg/l, that is below the thermocline and there is sufficient water with Temp<=24C and DO>5 mg/l higher in the water column on that day, such that the impoundment attains its class.

While there are a couple of days of nighttime excursions of DO below the 7 mg/l criterion below the dam, it is marginal (6.8-6.9) and apparently related to respiration of algae, probably due to the discharges upstream. Therefore, I would not say the project causes or contributes to non-attainment.

What are your opinions?

From: Howatt, Kathy <Kathy.Howatt@maine.gov>
Sent: Monday, November 2, 2020 10:20 AM
To: Mower, Barry F <Barry.F.Mower@maine.gov>; Bacon, Linda C <Linda.C.Bacon@maine.gov>; Mohlar, Robert C <Robert.C.Mohlar@maine.gov>; DiFranco, Jeanne L <Jeanne.L.DiFranco@maine.gov>
Subject: FW: Shawmut Project 2016 Water Quality Data

Good morning,

Thank you for your patience, the DO/temperature data you requested is attached, above, along with a data review memo from Kleinschmidt.

Kathy

Kathy Davis Howatt
Hydropower Coordinator, Bureau of Land Resources
Maine Department of Environmental Protection
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From: Rachel Russo <Rachel.Russo@KleinschmidtGroup.com>
Sent: Friday, October 30, 2020 12:29 PM
To: Howatt, Kathy <Kathy.Howatt@maine.gov>
Cc: Dorman, Randy <randy.dorman@brookfieldrenewable.com>; Wendy Bley <Wendy.Bley@Kleinschmidtgroup.com>; Jesse Wechsler <Jesse.Wechsler@KleinschmidtGroup.com>
Subject: Shawmut Project 2016 Water Quality Data

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Hi Kathy,

On behalf of Randy Dorman at Brookfield, and as requested recently by you, attached are the water quality data files for the Shawmut Project. We are also providing a technical memo that Kleinschmidt developed for Brookfield that examines each of the very few incidences of DO less than the standard (5.0 mg/L for the impoundment and 7.0 mg/L for the tailwater) relative to hydrologic, weather, flow, project operational conditions, and monitoring instrument operations. Our findings are discussed in the attached memo and may be helpful for your review.

Please contact us if you have any questions about the data files or the memo.

Regards,
Rachel

Dr. Rachel S. Russo
Scientist
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