

**From:** [Radke, Bill](#)  
**To:** [Harden, Tasha](#)  
**Subject:** Re: San Bernardino NWR Water Team - Brasher Pond Water Budget Preliminary Results  
**Date:** Friday, July 24, 2020 9:43:08 AM

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Tasha; Thanks for bringing up the excellent point about the solar panel influences on pump rates. The number of variables in this seems fairly simple but is rather complex as you pointed out. Thanks you for dealing with such a variety of issues. It has been pretty crazy. Bill

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**From:** Harden, Tasha <Tasha\_Harden@fws.gov>  
**Sent:** Thursday, July 23, 2020 9:14 AM  
**To:** Burck, Peter <peter\_burck@fws.gov>  
**Cc:** Radke, Bill <bill\_radke@fws.gov>  
**Subject:** Re: San Bernardino NWR Water Team - Brasher Pond Water Budget Preliminary Results

Thanks Peter!

Seeing how much inflow changes the outflow... I am really interested to see what higher infiltration will do as well.

Bill an average inflow during the days for the past little while has been 16gpm, so with higher infiltration I'm thinking the outflow will be more accurate with what we are seeing in the field.

Something else to maybe make note of (if you didn't already in the text I honestly can't remember right now) is that our pumps only work during the day and inflow fluctuates with lighting conditions... so the model outflow would be a "max outflow" under ideal conditions during the day with the pump running when the pond has already "refilled" from the lower inflows during the night. I hope when we get our bigger pump that the outflow picks up as much as the math shows it should.

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**From:** Burck, Peter <peter\_burck@fws.gov>

**Sent:** Thursday, July 23, 2020 7:54 AM

**To:** Reagan, Steve <steve\_reagan@fws.gov>; Broska, James <james\_broska@fws.gov>; Harris, Grant <Grant\_Harris@fws.gov>; Kundargi, Darrell <darrell\_kundargi@fws.gov>; Stewart, David R <david\_stewart@fws.gov>; Sesnie, Steven <steven\_sesnie@fws.gov>; Radke, Bill <bill\_radke@fws.gov>; Fernandez, Juliette <juliette\_fernandez@fws.gov>; Walker, Cassandra M <cassandra\_walker@fws.gov>; Harden, Tasha <Tasha\_Harden@fws.gov>; Burck, Peter <peter\_burck@fws.gov>; macmilar <macmilar@law.unm.edu>; MacMillan, Ariel L <ariel\_macmillan@fws.gov>; McLain, Sarah <mclainsa@law.unm.edu>; Bannerman, Kimberly M <kimberly.bannerman@sol.doi.gov>; Wolaver, Brad D <brad\_wolaver@fws.gov>

**Subject:** San Bernardino NWR Water Team - Brasher Pond Water Budget Preliminary Results

Hi Everyone,

I've attached a file showing draft preliminary results for the Brasher Pond water budget assuming inflows from the Hackberry Well are 20 gpm, 15 gpm, and 10 gpm. Please let me know if you have questions. Thanks.

Peter

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