

Fwd: Caliche School WWTF Discussion - Water Balance / Discharge

1 message

DeLaria - CDPHE, Michelle <michelle.delaria@state.co.us>
 To: Ana Ruiz - CDPHE <ana.ruiz@state.co.us>

Tue, Mar 1

pls save this to RM

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----- Forwarded message -----

From: Don Day <dday@olsson.com>
 Date: Tue, Mar 17, 2020 at 11:22 AM
 Subject: Caliche School WWTF Discussion - Water Balance / Discharge
 To: Michael Emming - CDPHE <michael.emming@state.co.us>, Amy Zimmerman - CDPHE <amy.zimmerman@state.co.us>, Michelle DeLaria - CDPHE <michelle.delaria@state.co.us>, Mik <manuellom@re1valleyschools.org>, hope@awws.org <hope@awws.org>, Kim Zulliger <kzulliger@olsson.com>, Jan DeLay <delayj@re1valleyschools.org>

As a follow up to our call in November, we have been provided flow data information over a period of time and have completed a water balance. In summary, there is more water entering evaporating and the system will eventually discharge. The pond is currently not full and has still has capacity for some time.

In summary, there will need to be further discussions on how Caliche's wastewater system can reach phosphorus limits by July 1, 2024.

Below is a summary of the calculations and the water meter readings. Note, the readings were taken at the potable water meter because the wastewater flume is not calibrated at the potable water meter to make sure it was reading accurately.

| Water Balance | |
|--|-----------------------|
| *Net Evaporation (ft) = | -2.86 * |
| If pond is at elev = 3822 area (sf) = | 12,750 |
| Net evaporation (ft3) = | 36,422.50 |
| Net evaporation (Gal) = | 272,440.30 |
| # of school days = | 305 |
| **Average flow per day to meet net evaporation loss = | 893 Gal/day ** |
| *16.48" Annual Precipitation - Akron 4E and (-)50.76" Annual Pan Evaporation w/ 0.75 Adj. Factor - Akron 4E = Net (-)34.28" | |
| Data from Western Regional Climate Center: https://wrcc.dri.edu/Climate/comp_table_show.php?type=pan_evap_avg | |
| Data from Western Regional Climate Center: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?co0109 | |
| ** if school flow on a 7 day average exceeds this number the pond will be gaining and discharge will occur at some point | |
| Note: Documented flow from daily meter readings is 1,760 gpd average per day. Readings taken during various days in November and December 2019 and full month of February 2020 | |

| Potable Water Meter Readings | | | |
|------------------------------|---------|--------|------------------|
| Date | Reading | x1000 | GPD |
| 11/19/2019 | 860 | 860000 | |
| 11/20/2019 | 861 | 861000 | 1000 |
| 11/21/2019 | 863 | 863000 | 2000 |
| | | | |
| 12/3/2019 | 872 | 872000 | |
| 12/4/2019 | 874 | 874000 | 2000 |
| | | | |
| 1/7/2020 | 896 | 896000 | |
| 1/8/2020 | 898 | 898000 | 2000 |
| 1/9/2020 | 900 | 900000 | 2000 |
| 1/10/2020 | 902 | 902000 | 2000 |
| | | | |
| 2/3/2020 | 927 | 927000 | |
| 2/4/2020 | 929 | 929000 | 2000 |
| 2/5/2020 | 931 | 931000 | 2000 |
| 2/6/2020 | 933 | 933000 | 2000 |
| 2/7/2020 | 935 | 935000 | 2000 |
| 2/8/2020 | 936 | 936000 | 1000 |
| 2/9/2020 | 938 | 938000 | 2000 |
| 2/10/2020 | 940 | 940000 | 2000 |
| 2/11/2020 | 942 | 942000 | 2000 |
| 2/12/2020 | 944 | 944000 | 2000 |
| 2/13/2020 | 944 | 944000 | 0 |
| 2/14/2020 | 946 | 946000 | 2000 |
| 2/15/2020 | 948 | 948000 | 2000 |
| 2/16/2020 | 950 | 950000 | 2000 |
| 2/17/2020 | 952 | 952000 | 2000 |
| 2/18/2020 | 954 | 954000 | 2000 |
| 2/19/2020 | 954 | 954000 | 0 |
| 2/20/2020 | 956 | 956000 | 2000 |
| 2/21/2020 | 958 | 958000 | 2000 |
| 2/22/2020 | 960 | 960000 | 2000 |
| | | | |
| | | | 1760 Average GPD |
| | | | |

From: Don Day <dday@olsson.com>
Sent: Monday, January 6, 2020 1:37 PM
To: Michael Emming - CDPHE <michael.emming@state.co.us>; Amy Zimmerman - CDPHE <amy.zimmerman@state.co.us>; Michelle DeLaria - CDPHE <michelle.delaria@state.co.us>; Mik <manuellom@re1valleyschools.org>; hope@awws.org; Kim Zulliger <kzulliger@olsson.com>; Jan DeLay <delayj@re1valleyschools.org>
Subject: Call Notes - Caliche School WWTF Discussion @ Tue Nov 19, 2019 10:30am - 11:30am (CST) (dday@olsson.com)

All - I was going back through some project details and noticed that I didn't have correspondence with anyone about notes for the call back in November. I apologize on sending these out have attached the notes that I took for your review.

Please take a minute to review and provide any additions or corrections.

Thank you, Don

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 Vice President

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