

Anderson, Skyler@Waterboards

From: Joey Howard <joey@cascadestreamsolutions.com>
Sent: Thursday, July 07, 2016 12:25 PM
To: Anderson, Skyler@Waterboards
Subject: Fwd: Consumptive Use Estimate
Attachments: MMR Consumptive Use Estimate R2 20160707.xlsx

Joey Howard, P.E.
Principal
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295 E. Main St, Suite 11, Ashland, OR 97520
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----- Forwarded message -----

From: **Joey Howard** <joey@cascadestreamsolutions.com>
Date: Thu, Jul 7, 2016 at 12:17 PM
Subject: Re: Consumptive Use Estimate
To: Will Harling <will@mkwc.org>

Hey Will,

My responses are listed below.

1. What line 41 indicates as a demand.

Response: I revised the spreadsheet and don't recall what was listed in item 41. I intended the new spreadsheet to more clearly state the estimates.

2. What the evaporation rate is on the pond. This will tell us what amount of water will be needed to keep the pond full.

Response: We do not have a measured rate and plan on measuring pond "losses" with a stage gage and measuring inflow

3. The domestic demand for year-round residents. It is unclear where or if the analysis accounts for this demand.

Response: I looked at two scenarios. The first is assumes 50 people at the Ranch. It is my understanding that about 50 people are the maximum number of people (guests and staff) that inhabit the Ranch when Marble Mountain Ranch functions as a ‘Dude Ranch’. The second scenario assumes a total of 500 people at the ranch. These people include firefighter and ranch staff. I did not develop an off-season estimate that only includes residents and staff.

4. Currently the use in the Fire Camp section is described as “Sink and flush toilet only”, with a comment stating that 50 gpd is added. There is no explanation for this comment or where the additional 50 gpd comes from. The use description may need to be something closer to “Daily Firefighter Water Demand,” with a description of how the analysis derives their demand.”

Response: I revised my estimate for the fire camp. I searched and will continue to search for an estimate for daily demand for people at a fire fighting camp; however, I was unable to locate an estimate. I suspect values range widely with the availability of water for personal use, cleaning equipment, and water to bring to the fire area. The amount could be very high if water was used to fill trucks or helicopter buckets. Conversely, it could be quite low if it was only used for maintaining a minimum of personal hygiene and replenishment of lost fluids. I changed the estimate to 75 gpd per person.

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On Thu, Jul 7, 2016 at 8:45 AM, Will Harling <will@mkwc.org> wrote:

Can you answer their questions? Let me know how I can help facilitate this today. Want the NFWF CEF to get a clearer vote of support from water board if we can while they are deciding on the MMR water line proposal.
W

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From: **Anderson, Skyler@Waterboards** <Skyler.Anderson@waterboards.ca.gov>

Date: Thu, Jul 7, 2016 at 8:28 AM

Subject: RE: Consumptive Use Estimate

To: Will Harling <will@mkwc.org>

Cc: "Petruzzelli, Kenneth@Waterboards" <Kenneth.Petruzzelli@waterboards.ca.gov>

Will,

Please see the Division response to the Consumptive Use Estimates below.

“The consumptive use demand estimate appears to be a more refined analysis than in the prior technical report, as it uses estimated square footage of areas of the ranch to estimate demand. The consumptive use rates provided were provided by State Water Board staff. The consumptive use rates provided by staff are the use rates listed in Title 23 of the Code of Regulations, section 697 for the amount of water considered reasonably necessary for certain uses. We have questions about the current preliminary analysis and are seeking clarification, but insofar as the final analysis clarifies our questions above and does not substantially change the consumptive use estimates, we find them reasonable. Specifically, we need to know -

1. What line 41 indicates as a demand.
2. What the evaporation rate is on the pond. This will tell us what amount of water will be needed to keep the pond full.
3. The domestic demand for year-round residents. It is unclear where or if the analysis accounts for this demand.
4. Currently the use in the Fire Camp section is described as “Sink and flush toilet only”, with a comment stating that 50 gpd is added. There is no explanation for this comment or where the additional 50 gpd comes from. The use description may need to be something closer to “Daily Firefighter Water Demand,” with a description of how the analysis derives their demand.”

Thank you,

Skyler Anderson, Environmental Scientist

North Coast Enforcement Unit

State Water Resources Control Board

1001 I Street, 14th Floor

Sacramento, CA 95814

Phone: [916-341-5355](tel:916-341-5355)

Email: sanderson@waterboards.ca.gov

From: Will Harling [mailto:will@mkwc.org]
Sent: Tuesday, July 05, 2016 2:20 PM
To: Anderson, Skyler@Waterboards
Subject: Fwd: Consumptive Use Estimate

Hi Skyler,

Here's the consumptive use estimate prepared by Joey Howard for your review. He is hopefully going to update with his best guess of what beneficial use flows to maintain the pond at MMR is today, but any insight you have into what the water board would accept as beneficial use flows into the pond would be greatly appreciated. Our opportunity to fund the piping portion of this project has a deadline of this Thursday, July 7th, when the NFWF Coho Enhancement fund meets.

If there is any way to get a response from the water board by COB 7/6/16 about whether or not these consumptive use numbers are acceptable, and thus the size pipe needed for the project is acceptable, we would be most grateful. One question I still have is what the period of use to judge the consumptive use flows by is? Can Doug have instantaneous consumptive use diversion above the 0.23 cfs or so upper diversion limit for a cause such as fire suppression if his daily average is lower?

Thanks,

Will

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From: **Joey Howard** <joey@cascadestreamsolutions.com>
Date: Mon, Jun 27, 2016 at 10:06 PM
Subject: Consumptive Use Estimate
To: Will Harling <will@mkwc.org>

Hey Will,

Attached is my draft estimate for consumptive use. Missing from this estimate is the demand for the pond.

Joey

Joey Howard, P.E.

Principal

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Marble Mountain Beneficial Use Estimates

Date 6/27/2016
 Updated 7/7/2016
 by jh

Irrigation

Area ID	Land Use	Area, sf	Area, ac	Use Rate, gpd/sf	Beneficial Use, gpd	Beneficial Use, cfs	Notes
A	PASTURE	44040	1.01	0.185	8147.4	0.012606	used lawn, orchard, and garden
B	GRASS & TREES	21700	0.50	0.185	4014.5	0.006211	used lawn, orchard, and garden
C	GARDEN	9100	0.21	0.185	1683.5	0.002605	used lawn, orchard, and garden
D	GRASS & TREES	26770	0.61	0.185	4952.45	0.007663	used lawn, orchard, and garden
E	GRASS & TREES	9630	0.22	0.185	1781.55	0.002756	used lawn, orchard, and garden
F	GRASS & TREES	5530	0.13	0.185	1023.05	0.001583	used lawn, orchard, and garden
G	PASTURE	73940	1.70	0.185	13678.9	0.021164	used lawn, orchard, and garden
H	GRASS & TREES	9620	0.22	0.185	1779.7	0.002754	used lawn, orchard, and garden
I	GRASS & TREES	38150	0.88	0.185	7057.75	0.010920	used lawn, orchard, and garden
J	GRASS & TREES	6640	0.15	0.185	1228.4	0.001901	used lawn, orchard, and garden
K	GRASS & TREES	20750	0.48	0.185	3838.75	0.005939	used lawn, orchard, and garden
L	OUTDOOR ARENA (Dust Control)	26590	0.61	0.09	2393.1	0.003703	used dust control
M	GARDEN	6030	0.14	0.185	1115.55	0.001726	used lawn, orchard, and garden
N	GRASS & TREES	6780	0.16	0.185	1254.3	0.001941	used lawn, orchard, and garden
O	GRASS & TREES	7400	0.17	0.185	1369	0.002118	used lawn, orchard, and garden
P	GRASS & TREES	14990	0.34	0.185	2773.15	0.004291	used lawn, orchard, and garden
Q	GRASS & TREES	7400	0.17	0.185	1369	0.002118	used lawn, orchard, and garden
R	GRASS & TREES	2610	0.06	0.185	482.85	0.000747	used lawn, orchard, and garden
S	GRASS	1480	0.03	0.185	273.8	0.000424	used lawn, orchard, and garden
T	TREES	6850	0.16	0.185	1267.25	0.001961	used lawn, orchard, and garden
U	INDOOR ARENA	8980	0.21	0.09	808.2	0.001250	used dust control
V	GRASS	18280	0.42	0.185	3381.8	0.005232	used lawn, orchard, and garden
W	GRASS	23800	0.55	0.185	4403	0.006812	The westerly portion appears to be dirt in most recent GE imagery
X	GRASS	20020	0.46	0.185	3703.7	0.005730	used lawn, orchard, and garden
Y	GRASS	133990	3.08	0.185	24788.15	0.038353	used lawn, orchard, and garden
Z	GRASS & TREES	15120	0.35	0.185	2797.2	0.004328	used lawn, orchard, and garden
AA	GRASS	35680	0.82	0.185	6600.8	0.010213	used lawn, orchard, and garden
AB	POND	20250	0.46	0.292	5906.25	0.009138	assumes 3" per day ET and infiltration loss per sqft of wetted area
Total		622120	14.28		113873	0.18	

People, Livestock, and Pets

Use	Quantity	Units	Use Rate, gpd/sf	Beneficial Use, gpd	Beneficial Use, cfs	Notes
Horses	30	gpd/head	15	450	0.000696	
People (Staff & Guests in Fully Plumbed Residences)	50	gpd/person	75	3750	0.005802	
Dogs	8	gpd/animal	0.25	2	0.000003	6 to 8
Goats	4	gpd/animal	2.5	10	0.000015	3 to 4
Chickens	40	gpd/animal	0.25	10	0.000015	
Rabbits	4	gpd/animal	0.25	1	0.000002	2 to 4
Cats	15	gpd/animal	0.25	3.75	0.000006	12 to 15; used poultry, rabbits, etc
Total					0.007	

Total w/o fire camp 0.183 cfs

Fire Protection Flows

Use	Quantity	Units	Use Rate	Beneficial Use, gpm	Beneficial Use, cfs
Fire Hose	3	gpm	300	900	2.01

Homes, Resorts, Motels, Organization Camps, etc.

Fully plumbed 55 to 75 gallons per day per person
 Sink and flush toilet only 40 gallons per day per person
 Sink and shower only 35 gallons per day per person
 Sink only 25 gallons per day per person
 Outside supply only 15 gallons per day per person
 Cafe, fountain, etc 2.5 gallons per day per person

Camp Grounds

Depending upon facilities provided, allowances range from 5 gallons per day per person, where faucets only are provided, to 30 gallons per day per person where washbowls, showers, flush toilets and laundry trays are provided.

Lawn, Garden, Orchard and Grounds

Irrigation 18.5 gallons per day per 100 square feet
 Sprinkling to allay dust 7.5 to 10 gallons per day per 100 square feet

Livestock

Milch cows 30 gallons per day per head
 Horses 15 gallons per day per head
 Goats and hogs 2.5 gallons per day per head
 Poultry, rabbits, etc 0.25 gallon per day per head

Marble Mountain Beneficial Use Estimates - Fire Camp

Date 6/27/2016
 Updated 7/7/2016
 by jh

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Rabbits	4	gpd/animal	0.25	1	0.000002	2 to 4
Cats	15	gpd/animal	0.25	3.75	0.000006	12 to 15; used poultry, rabbits, etc
Total					0.059	

Total w/ fire camp 0.235 cfs

Fire Protection Flows

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Fire Hose	3	gpm	300	900	2.01

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