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State Water Resources Control Board
Division of Water Rights
Attention: Michael Buckman
PO Box 2000
Sacramento, CA 95812-2000

Via e-mail: wrhearing@waterboards.ca.gov

Re: In the Matter of Douglas and Heidi Cole and Marble Mountain Ranch – Post-Hearing Brief from brief of Old Man River Trust

To SWRCB's Division of Water Rights & Hearing Team:

The confluence of Stanshaw Creek and the Klamath River is the place I've considered home since my family acquired the surrounding property in 1994. The property, known as both "Old Man River" and as "Stanshaw," extends from the western property boundary of Marble Mountain Ranch (MMR) to the Klamath River, and is dissected by Stanshaw Creek (OMRT-1).

To me, and to other locals, Stanshaw is more than cabins or parcels of land. (OMRT-10) I have a bond with this place. The water that flows in Stanshaw Creek is the essence of this place. Stanshaw will be home to me for the rest of my life, even when I must live elsewhere for work.

As the legal owner of Stanshaw (held as Old Man River Trust or OMRT), I am the only landowner and water right holder on Stanshaw Creek downstream from the diversion

maintained by MMR. I hold a riparian water right, and an undetermined portion of the pre-1914 water right stemming from Samuel Stanshaw's original mining claim. (OMRT-2)

OMRT concurs with the legal arguments contained in the joint closing brief submitted by the Karuk Tribe and Klamath Riverkeeper.

DRAFT ORDER

Several requirements in the draft order assume that electricity production at Marble Mountain Ranch requires the diversion of water from the Stanshaw Creek watershed to MMR's place of use in the neighboring Irving Creek watershed. (WR-1) As demonstrated during the hearing, there are reasonable alternative methods of energy production that do not require the diversion of any water (combined solar and generator). (OMRT 7 and 8) MMR is south facing and very conducive to solar power production.

Other options require a fraction of the water to produce a given quantity of electricity, namely a more efficient hydropower system reconfigured to used lower water volume and higher head. (OMRT 1 and 3)

Given these feasible alternatives, and the difficulty and expense of diverting water out of, and returning it to, the Stanshaw Creek watershed, the diversion and use of water for electricity production at MMR unreasonable.

The following terms within the draft order (WR-1) would not necessarily apply, or would apply in a different manner, if MMR met its electricity needs without diverting water (solar & generator), or with a reconfigured efficient hydropower system.

Complete energy audit

It would not be necessary for MMR to complete an energy audit if electricity needs were met without the diversion of water.

If electricity needs are met by diverting water from Stanshaw Creek, then the energy audit would need to quantify reasonable electricity consumption needs based on an independent professional evaluation from an expert in off-grid homes and businesses. An energy audit that accepts MMR's stated energy consumption needs as a starting point would not be independent or reasonable.

The first sentence of the solar cost estimate provided by MMR refers to "attached calculations" for determining electricity demand. (MMR-19) I don't believe these calculations were provided at the hearing. These calculations are based on MMR's existing power demands which are unreasonable and not customary for off-grid living, due largely to the reliance upon electric rather than propane appliances.

Complete water efficiency study

This study would be considerably simpler, or perhaps even unnecessary, if MMR diverted water exclusively for non-consumptive purposes and utilized a simple shutoff valve at the place of use so water is only diverted when needed. This is what I use on my property. It is simple and inexpensive.

Develop implementation plan to return flow back to Stanshaw Creek

This will not be necessary if MMR's energy needs are met without water.

It would also be unnecessary if MMR utilized a redesigned micro hydropower system that was considerably more efficient because it relies on more head, and thus less water. Alternative configurations of POD and point of energy production would allow a path of return flow within the Stanshaw Creek watershed, thus negating the costly, and difficult to permit, proposal to return water along Hwy 96. (OMRT 1 and 3) MMR has yet to evaluate these alternatives despite committing to do so in writing and at a public meeting.

The unreasonableness of MMR meeting its electricity needs with an inter-watershed diversion is compounded by the fact that OMRT holds unexercised water rights downstream of MMR. OMRT intends to install a fish-friendly hydropower and solar system to meet its electricity needs. This method of diversion and purpose of use by OMRT would be reasonable because the point of diversion, path of return flow, and place of use would all be located within the Stanshaw Creek watershed. This is not possible for MMR because it is located in another watershed.

Install conveyance infrastructure in the ditch, such as a pipeline or other suitable infrastructure, adequate to eliminate the misuse of water in the ditch

The ditch itself represents an unreasonable method of diversion because it is very wide, located on a steep hillside, and washes out during heavy rains contributing sediment to Stanshaw Creek and the Klamath River. A more reasonable method of diversion would be to install a pipe that would not require a wide ditch on a steep hillside.

Stabilize head cut and slope at Irving Creek

This is not necessary if MMR's energy needs are met without water. Currently, no water is being returned to Irving Creek.

Begin construction to return flows back to Stanshaw Creek

This costly proposal is not necessary if electricity needs are met with a solar and generator combination, or with a reconfigured hydropower that requires a fraction of the water to produce a given unit of electricity and allows for a path of return flow other than along Hwy 96.

WASTE, UNREASONABLE METHOD OF USE, UNREASONABLE METHOD OF DIVERSION

MMR's non-consumptive water diversion constitutes an unreasonable method, quantity and purpose of use. Diverting water from Stanshaw Creek for hydropower production and returning it to Irving Creek constitutes an unreasonable method of diversion, particularly given the alternatives detailed below under corrective actions.

MMR's diversion ditch itself is an unreasonable method of diversion. It is located on a steep hillside which cannot accommodate a ditch of this size without washing out on a regular basis (OMRT 4). Such washouts have occurred on multiple occasions as demonstrated during the water board hearing. MMR could more easily divert water in a pipe from another location on Stanshaw Creek and avoid the use of a ditch altogether.

MMR's diversion ditch constitutes a wasteful and unreasonable method of diversion because it loses an estimated 0.5 CFS of water to conveyance loss, and causes landslides in the winter which discharge sediment into Stanshaw Creek and the Klamath River. (OMRT 4)

MMR's hydropower system constitutes waste because reasonable alternatives are available that would produce power without water, or that would produce a given quantity of electricity with a fraction of the water. (OMRT 3, 7 & 8) The current system is wasteful because it relies upon a low head (the vertical drop between the POD and point of power production), thereby requiring more water. In contrast, high head systems can produce a given unit of electricity with significantly less water. (OMRT 3)

Additionally, MMR's hydropower system constitutes waste because it lacks a battery bank that could store excess power that is produced and not used, thus allowing less water to be diverted. I submitted a professional estimate for a system that would produce 4,180 watts with a .23 CFS diversion. (OMRT 3) Doubling this volume of water would double the amount of available electricity.

Lack of a control mechanism at MMR's point of diversion constitutes an unreasonable method of diversion and causes waste. A pipe with a simple shutoff valve at the place of use (as used by OMRT), would eliminate waste and the difficulty of walking to the POD to adjust diversion quantity.

On numerous occasions, including as recently as September, 2017, water diverted from Stanshaw Creek was flowing from the east side of MMR property onto a public dirt road near Irving Creek. This constitutes waste.

Although it is not the focus of this hearing to adjudicate MMR and OMRT's correlative share of a claimed Pre-1914 water right, diversion and use of water is not reasonable if conducted without a valid water right. OMRT currently relies rely on water from Stanshaw Creek to meet domestic, irrigation, and emergency fire suppression needs. I detailed water right issues in a previous memo. (OMRT 2)

HARM TO PUBLIC TRUST RESOURCES

MMR's diversion harms public trust resources in Stanshaw Creek and the Klamath River including fisheries and recreational opportunities. (OMRT-10) In addition to sediment discharges discussed above, I have personally witnessed dead juvenile coho and Chinook salmon and steelhead trout in lower Stanshaw Creek immediately after MMR increased its water diversion in the summer leaving fish stranded.

Most summers since the Coles purchased MMR, their diversion has completely dewatered the lowest reach of Stanshaw Creek before it reaches the Klamath River. On numerous occasions, MMR's diversion has also severely reduced the size of a natural pool in Stanshaw Creek near its confluence with the Klamath River, rendering it unusable for swimming. (OMRT-5)

Lack of connectivity between Stanshaw Creek and the Klamath River prevents juvenile salmon from escaping lethal water quality conditions in the Klamath River in late summer and eliminates cold water refugia in the Klamath River that is used by migrating adult and juvenile salmon.

By preventing Stanshaw Creek water from reaching the Klamath River, MMR's diversion also eliminates a plume of clean water in the Klamath River in the summer which provides swimming for the public at times when Klamath River water quality is unsafe for swimming. Eliminating this plume of water in Stanshaw Creek also limits recreational fishing in this section of the Klamath River because adult fish do not congregate.

CORRECTIVE MEASURES

Eliminate Waste

MMR should reduce or eliminate conveyance losses, estimated at 0.5 CFS, by piping water to its place of use (OMRT 5). MMR should cease diverting more water than is needed. As recently as September, 2017 water was draining off of the east side of Marble Mountain Ranch onto Forest Service land near Irving Creek.

Enforce NMFS Bypass Flow Recommendations

The State Water Board has the authority and duty under California public trust law to restrict MMR's diversion to ensure that flows in Stanshaw Creek reflect the natural unimpaired hydrograph to the greatest extent feasible, and consistent with NMFS

recommendations to adopt a year-round 90% unimpaired hydrograph flow standard. Given the reasonable alternatives to meet MMR's electricity needs without water, the quantity of lawful diversion by MMR is likely less than the quantity of water above minimum bypass flow requirements.

Prevent Water Quality Impairments

MMR's existing unlined conveyance ditch creates instability on a steep hillside and is about three times wider than would be necessary if water was diverted via pipe. Consequently, the ditch washes out during many winters creating mudslides that clog salmon habitat in Stanshaw Creek, causing plumes of muddy water to enter the Klamath River, and clogging my domestic water system.

SWRCB should order MMR to: (1) Install a pipe along their existing diversion ditch and modify the ditch according to recommendations of a qualified, independent third party to prevent the aforementioned water quality problems; or (2) Decommission their existing ditch and divert water from an alternative location via pipe. It is common practice in this area to divert water through the forest via pipe and a narrow trail rather than a ditch approximately as wide as a car.

Limit diversion for consumptive uses to an amount that is beneficially used

The Coles have estimated non-consumptive water use at .353 CFS while SWRCB estimated it at .103 CFS. SWRCB should limit MMR's diversion for consumptive use based on standard calculations for domestic and irrigation purposes.

Prohibit MMR from diverting water for hydropower unless and until MMR conducts actions required by the draft order.

Since the 1990s, I have urged MMR to consider alternative ways to meet its electricity needs that do not harm fisheries resources, public trust resources, or our ability to exercise our riparian and any pre-1914 water rights. During this period of time, I have researched micro-hydro systems in our region so that I could propose corrective measures that would meet electricity needs of my property and MMR.

Last year, MMR agreed to evaluate alternatives including solar power and a micro-hydro system that includes a higher point of diversion, and therefore provides more head (the vertical distance between a point of water diversion and point of power production). Such a hydropower system would: (1) Use considerably less water to produce a given unit of electricity; and (2) If designed properly, allow me to exercise my water rights for hydropower production while returning the water above the reach of Stanshaw Creek that provides anadromous fish habitat.

During the hearing, MMR's owner Douglas Cole asserted his continued unwillingness to evaluate alternative hydropower configurations that would produce a given quantity of electricity with less water.

"Konrad, you need to understand that I will never agree to relocating the point of diversion another 1,000, 2,000 feet up and reinstituting a new intrusion with new ditch lines and unstable conveyances and new access roads. I will never go there."

“An intrusion like this is beyond comprehension for me. I don’t want to go there.”

Proposals for MMR to generate hydropower using its current POD, and returning the water to Stanshaw Creek along Highway 96 have been evaluated in detail. Unfortunately, this option would preclude me from exercising my water rights to install a hydropower system that returns water to Stanshaw Creek above the reach used by anadromous fish. This option would also require permits to dig a trench along Highway 96 from the California Department of Transportation, and possibly the company that maintains buried fiber optic lines.

MMR has yet to evaluate or endorse viable physical solutions that would meet his electricity needs and mine. At the water board hearing on November 15, 2017, MMR’s owner Mr. Cole stated:

“And in my opinion, how you survive is outside the scope of this hearing.”

“I’m not understanding how my diversion impacts your survival or your operation there, so I have a difficult time answering that.”

In an effort to exercise my water right to produce electricity without harming fisheries and public trust resources, I obtained the aforementioned estimate for a hydropower system that would produce 4,180 watts with a .23 CFS diversion. (OMRT-3) Doubling the quantity of water, while maintaining the same POD to place of use, would double the quantity of electricity production potential.

Given the permitting requirements and cost of the aforementioned physical solutions, the most feasible solution may be for MMR to install a solar system with a battery backup, paired with a diesel generator to charge batteries when solar power is inadequate. I have provided an estimate for a solar system. (OMRT 7)

SWRCB is on firm legal ground to prohibit any diversion of water for non-consumptive use unless and until MMR conducts actions required by the draft order. Specifically, these actions would include conducting an energy audit with an independent estimate of reasonable electricity consumption for off-grid locations and a water efficiency study with an independent estimate of reasonable alternatives to meet electricity needs with a reasonable quantity of water. Furthermore, SWRCB should prohibit diversion of water for non-consumptive purposes unless and until MMR has the capacity to return said water into Stanshaw Creek above the reach of anadromy.

If MMR or I divert water for hydropower production, SWRCB should require each of us to determine reasonable and customary electricity needs for off-grid locations. I submitted a document that details household energy consumption for various appliances. (OMRT-8) In our area, it is necessary for off-grid households and businesses that produce hydropower to use less electricity than on-grid households and businesses. This is accomplished by using energy efficient appliances, wood heat, and gas instead of electric appliances where possible. While it may seem overly prescriptive in normal situations, I believe it is a reasonable requirement for those of us who seek to divert water for hydropower from flow-limited streams.

Fortunately, physical solutions exist that would satisfy MMR's electricity needs and mine without reducing flow levels in the reach of Stanshaw Creek used by anadromous fish.

COLLABORATIVE MEASURES

During the water board hearing, MMR's attorney Ms. Brenner pointed out that, according exhibit WR-184, the road to my house contributes sediment to Stanshaw Creek. This problem appeared in the document because I brought it to the attention of local restoration specialists in hopes of finding a solution. I hereby offer to pursue grant funding for a project that would stabilize or reroute my road, re-contour and stabilize MMR's diversion ditch, and install a pipe to meet MMR's consumptive water needs.

Thank you for dedicating your time and resources to resolve this difficult issue. Please feel free to contact me if you have any questions or need additional information.

Sincerely,

Konrad Fisher, Old Man River Trust

Proof of Service

I served and true and correct copy of the Post-Hearing Closing Brief of Old Man River Trust on the parties to this matter by electronic mail sent from my email k@omrl.org on Thursday March 29, 2018 to the following recipients.

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