March 29, 2022

Adam Sullivan, State Engineer
Nevada Division of Water Resources
901 S. Stewart Street
Carson City, NV 89701

Dear Mr. Sullivan:

We, the undersigned groups, are writing to request a delay in the hearing announced in Order 1330. The process set in motion by Order 1330 is highly consequential for the future of the Amargosa Basin. Allowing an additional six months for stakeholders to prepare for the hearing will ensure that the best possible science is brought to bear, the maximal number of stakeholders are engaged, and the results are seen as legitimate by the affected parties and the public.

The Amargosa Basin[1] is one of the most hydrologically and biologically unique places in North America. Centered on the Amargosa River, it is home to dozens of species that live nowhere else on earth. The springs that create the river in Oasis Valley, Ash Meadows, the Shoshone/Tecopa area, and into Death Valley National Park are the terminus of a vast carbonate aquifer flow system which underlies dozens of valleys in the southwestern Great Basin. These springs sustain human communities which rely on the water for survival. And they sustain delicate biological communities that thrive on their waters in the hottest, driest place on the continent.

The Amargosa Basin spans two states, Nevada and California; and four counties, Nye, Clark, Inyo, and San Bernardino; and has a variety of land management and protective designations. Public lands within the basin are managed by the Bureau of Land Management, the National Park Service, the US Fish and Wildlife Service, the US Forest Service, the Department of Defense, and the Department of Energy. The Basin contains numerous protected areas including Ash Meadows National Wildlife Refuge, home to the densest concentration of endemic species in North America; eight BLM Wilderness Areas, eight Areas of Critical Environmental Concern, and one Wilderness Study Area; Death Valley National Park, largest park in the lower 48 states; the Spring Mountains National Conservation Area; numerous private nature preserves managed by The Nature Conservancy; and 33.7 miles of the Amargosa Wild and Scenic River.

[1] The Amargosa Basin is broadly defined here as the topographic watershed and groundwatershed of the Amargosa River, including Nevada groundwater basins 228, 227B, 229, 227A, 226, 225, 230, 162 (including portions in California), and likely additional basins further to the north and east; and the topographic watershed of the Amargosa River in California, including Chicago Valley, California Valley, Silurian Valley, Shadow Valley, the Amargosa River Valley, and Death Valley itself.

The Amargosa Basin is host to 15 species of groundwater-dependent plants and animals protected as threatened or endangered under the Endangered Species Act (ESA).[2] These include four fishes, one invertebrate, seven plants, one mammal, and two migratory birds. The groundwater which gives rise to the Amargosa River also is essential to the continued existence of these species, and the ESA has been a pillar and a guardrail for land and water management in the Basin. As many as 50 additional groundwater-dependent endemic species have been identified with the Basin - some have been petitioned for ESA protections already, while many others could be eligible for such protections given the threats they face.

The Amargosa Basin is home to some 40,000 people in the communities of Beatty, Amargosa Valley, Crystal, Pahrump, Charleston View, Death Valley Junction, Shoshone, Tecopa, and Furnace Creek.[3] All of these people are reliant on the same surface and/or groundwater that comprise the river for their survival. These communities tend to be socio-economically disadvantaged, with poverty rates 15-30% above the national average, and median household incomes 30-55% less than the national average. Tourism based around the Amargosa River and the protected places in the Amargosa Basin is a main economic driver for the communities here. Agriculture is also a significant component of the economy in Amargosa Valley. And Pahrump derives significant economic benefit acting as a bedroom community for Las Vegas. In all cases, sustained supplies of groundwater, and sustained flow at the surface water features that groundwater creates, are essential to the continued economic productivity and livelihoods of people in the Amargosa Basin.

Groundwater resources, and the surface waters they sustain, are under threat in the Amargosa Basin. Planned mining operations near Beatty could include dewatering very near the headwaters of the Amargosa River. As of 2017, over 16,000 acre-feet was pumped in Basin 230, primarily for agriculture. Groundwater levels continue to fall in Pahrump Valley, as over-appropriation, primarily due to domestic well pumping, continues to extract more water out of the system than is recharged. The effects can be seen in the lower Amargosa Basin, as high elevation springs such as Twelvemile Spring in Chicago Valley, CA and Chappo Spring near Tecopa, CA have already experienced severe reductions in flow.

Environmental non-governmental organizations (NGOs), like the undersigned, have been essential to the conservation of the Amargosa Basin for decades. From advocating for land and water protections, to purchasing at-risk private lands for conservation purposes, to funding and executing the best available science, to convening working groups and engaging stakeholders; the NGO community's involvement has been central to the conservation of the Amargosa Basin.

Notably, the Amargosa Conservancy, in conjunction with The Nature Conservancy, hydrologist Andy Zdon, and other partners, has engaged in a long-term and large-scale monitoring project to better understand the hydrology of the Amargosa Basin. This has included drilling new

[2] The federally threatened desert tortoise (*Gopherus agassizii*) is also present in the Amargosa Basin, but is not dependent on groundwater.
[3] Per 2020 census data. 93.4% of Amargosa Basin residents live in Pahrump, Nevada.

monitoring wells, taking stable isotope data, and regular basin-wide monitoring events to document trends. The results have provided critical new insights into the interconnectivity of the hydrographic basins within the Amargosa.[4]

Order 1330 states: “a public hearing will be held in the month of May 2022 to take public comment on the continued use of the USGS Death Valley Regional Flow System numerical groundwater model, whether the use of the model should be utilized within other hydrographic basins within the regional flow system, and further management considerations within the regional flow system.”

We agree that the three questions being asked are of critical importance to the future of the Amargosa Basin. While the USGS Death Valley Regional Flow System numerical groundwater model (frequently referred to as “DV3”) is an important tool in our evolved understanding of the hydrology of the area, it may be that additional data and inputs, such as those derived from Andy Zdon’s work and elsewhere, may be necessary to ensure groundwater within Basin 230 is managed sustainably and within the significant constraints that exist. It may indeed be appropriate to use DV3 and other data and inputs to guide groundwater management within the regional flow system. And the boundaries of that regional flow system need to be agreed upon - for instance, Basin 162 clearly contributes flow to the Amargosa River via flow paths to Ash Meadows; to Shoshone and Tecocpa, and via Charleston View through California Valley and Willow Creek down to the Amargosa Canyon. The hearing will need to include discussion of the appropriate boundaries of the regional flow system.

Additionally, there are numerous other management considerations within the flow system which must be considered. Order 1330 itself raises questions. Is the water level in Devils Hole an appropriate proxy to safeguard the groundwater dependent ecosystems and federally listed species at Ash Meadows NWR and elsewhere in Basin 230? Is 50 years an acceptable time frame within which to analyze the effects of pumping? How will the State of Nevada ensure that pumping in Basin 230, Basin 162, and other basins does not impact down-gradient resources in California, including federal reserved water rights on the Amargosa Wild and Scenic River,[5]

---

[4] See Zdon, A.M., Davisson, L., & Love, A.H. (2015) Testing the Established Hydrogeologic Model of Source Water to the Amargosa River Basin, Inyo and San Bernardino Counties, California. *Environmental Forensics, 16*(4): 344-355. See also Zdon, A. (2014) 2014 State of the Basin Report, Amargosa River Basin https://bit.ly/3D1c6kp; and Zdon, A. (2020) 2020 Amargosa State of the Basin Report https://bit.ly/36e4oYy.

[5] The Amargosa Wild and Scenic River was first designated in the Omnibus Public Land Management Act of 2009, and expanded in the John D. Dingell, Jr. Conservation, Management, and Recreation Act to its current length of 33.8 miles, from north of the village of Shoshone, CA to where the River crosses Highway 127 into Death Valley National Park south of Dumont Dunes. The Wild and Scenic Rivers Act declares it to be the policy of the United States “that certain select rivers… shall be preserved in free-flowing condition, and that they… shall be protected for the benefit and enjoyment of present and future generations,” (16 U.S. Code § 1271). Wild and Scenic River designation entails or implies a federal reserved water right sufficient to accomplish the purposes of the Act (16 U.S. Code § 1284; see also *Potlatch Corp. v. United States*, 12 P.3d 1256 (Idaho 2000)).

federally and state listed endangered species,[6] and the human communities of southeast Inyo County?

We commend the State Engineer for taking this important step toward addressing groundwater overdraft in the Death Valley Regional Flow System. The environmental NGO community stands at the ready to engage with the State Engineer on Order 1330. We intend to engage in the proposed hearings, presenting scientific evidence and management recommendations. In some ways, the Order 1330 hearing will be a culmination of decades of conservation and scientific efforts to protect and document the fascinating hydrology and biology of the Amargosa Basin.

In order to fully engage, we are requesting a delay in the hearing. It will take time to fully analyze DV3, to cross-check it with other peer-reviewed science, to run models, and ultimately to derive a set of management recommendations for the State Engineer. If the hearing proceeds in May, the State Engineer risks having stakeholders unprepared to fully engage due to a lack of time provided. As such, we request a 6 month delay, and ask that the hearing proceed in November.

Thank you for your consideration of this matter.

Signed,

Amargosa Conservancy
Basin and Range Watch
California Wilderness Coalition
Center for Biological Diversity
Conservation Lands Foundation
Friends of the Amargosa Basin
Friends of the Inyo
Great Basin Waterkeeper
Great Basin Water Network
Mojave Desert Land Trust
Mojave National Preserve Conservancy
Morongo Basin Conservation Association
National Parks Conservation Association
Sierra Club, Toiyabe Chapter
Western Watersheds Project

[6] Federally listed groundwater-dependent endangered species on the California side of the Amargosa basin include the Amargosa niterwort (*Nitrophila mohavensis*), the spring-loving centaury (*Zeltnera namophila*), the Amargosa vole (*Microtus californicus scirpensis*), the least Bell's vireo (*Vireo bellini pusillus*), and the southwest willow flycatcher (*Empidonax traillii extimus*).