From: Ben King
To: EIR-EIS-Comments@SitesProject.org
Cc: aforsythe@sitesproject.org; Ben King
Subject: RE: Sites Reservoir Project Revised Draft Environmental Impact Report Comments - Cite Addendum
Date: Friday, January 28, 2022 9:56:59 AM

Dear Bureau of Reclamation,

Please find a working link for the 2nd Cited Paper in my comments for 8(a) below. The article cited is "***Multi-Stage Origin of the Coast Range Ophiolite, California: Implications for the Life Cycle of Supra-Subduction Zone Ophiolites***" by John W. Shervais et. al as published in the International Geology Review Vol. 46, 2004 , p. 289-315.

Here is a working link https://pubs.er.usgs.gov/publication/70026861

Thank you again for the opportunity to comment.

Sincerely

Ben King

From: Ben King <bking@pacgoldag.com>
Sent: Friday, January 28, 2022 9:34 AM
To: EIR-EIS-Comments@SitesProject.org
Cc: aforsythe@sitesproject.org; Ben King <bking@pacgoldag.com>
Subject: Sites Reservoir Project Revised Draft Environmental Impact Report Comments

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Subject: Sites Reservoir Project Revised Draft Environmental Impact Report

U.S. Bureau of Reclamation
2800 Cottage Way,
Sacramento, California 95825

Re: Comments of Revised Draft Environmental Impact Report

I am submitting my comments on the Draft Environmental Report for the Sites Reservoir Project ("ER") on behalf of my family and with the objective of raising long term issues of concern for the people, environment and economy of Colusa and Glenn Counties. My family has been farming since 1860 in Colusa County and own property with historical ownership dating back to 1860 on the Colusa Basin Drain north of the town of College City. I want to make it clear that I support the Sites Project because its water storage is needed for the State of California but my concern is that important issues could be overlooked that could have serious long term environmental consequences since many local stakeholders have not been involved in the consideration of this historical project for Colusa and Glenn Counties. As you know, the Covid 19 pandemic has suppressed many social interactions including the public engagement for the Sites Reservoir

project. Additionally many local stakeholders have what can best described as expectation fatigue whereby there is much skepticism that the Project will ever be completed and therefore many potential stakeholder comments have been likely suppressed due to the lack of confidence that the project will be completed. It takes a significant amount of time to comment and engage with a project of this magnitude and many have engaged and commented only to see the project not to move forward. This is a very important project for the State and the most important project in history for Colusa and Glenn Counties and that is why I have taken the time to comment. Again – I hope the project is completed but I also hope that it is done the right way with win/win outcomes for both the State and the long term vitality and prosperity for Colusa and Glenn Counties and its residents.

Please see my comments below:

1. The Recent Racial Equity, Diversity, Inclusion, Access and Anti-Racism Resolution ("DEI") (SWRCB Resolution No. 2021-0050) of the SWRCB should be considered and incorporated into the ER and well as the DWR's adoption of the State of California objectives in the Human Right to Water ("HRW") which was recently incorporated in the DWR Handbook.

    a. The DEI and HTW objectives of the SWRCB and HTW of the DWR are particularly important to the stakeholders of Colusa and Glenn Counties due to the recent trends in the availability of fresh drinking water and in deteriorating water quality.

        - Tehama, Glenn and Colusa residents reported over 200 dry domestic wells in 2021 (See https://calmatters.org/environment/2021/08/california-groundwater-dry/), the Cities of Orland and Willows faced water supply challenges and the City of Williams reported that one of its public supply wells ran dry in 2021 (A City of Williams Member on the Colusa Groundwater Authority reported that one of its public supply wells ran dry in an August 2021 Meeting https://colusagroundwater.org/mdocs-posts/2021_08_24-cga-board-meeting-minutes_final/)

        - The public supply systems for Maxwell currently have high TDS levels and face potential increases in TDS levels from the upward movement of groundwater with high TDS levels due to the common occurrence of upconing groundwater in the Colusa Subbasin. One of the wells for the Williams public supply system recently reported a TDS level of 790 and the public supply wells for both Maxwell and Williams which lie at the foot of the proposed reservoir have recorded TDS observations from 500 to 800 in recent years. The public supply system for the residents of Grimes has arsenic contamination levels of approximately 25 Ug/L. These water quality challenges are most likely due to the upconing of high TDS connate water from deeper levels in the aquifer in combination of aggravated redox chemical reactions as increased groundwater pumping and deeper wells bring previously anerobic groundwater into contact with oxygen causing the desorption of naturally occurring contaminates like arsenic

and/or just drawing saltier water into the supply system aquifer.

b. The DEI and HTW policies and objectives are also important from the perspective of Equity in general. Federal and State taxpayers will be allocating billions of dollars to bring fresh water to urban areas south of the areas of origin in the Sacramento Valley where public funds have been spent to provide conjunctive supply systems. The public supply systems in Tehama, Colusa and Glenn Counties are exclusively dependent on groundwater and currently faced both supply and water quality resiliency challenges that will be benefited by the water storage and supply from the Sites project. It is conceivable and probable that while there may not be enough clean drinking water for the City of Williams in the next 50 years that cities in Southern California will have access to clean drinking water stored less than 10 miles to the north west of Williams by virtue of the publicly subsidized water storage and water conveyance infrastructure of the Sites Reservoir. This seems fundamentally unfair and will result in a disproportionate impact on the primarily minority residents of affected Cities like the City of Williams. Now is the time to guarantee the HTW and DEI protections by using the Sites infrastructure for a water filtration system that can provide the public supply systems in Tehama, Glenn, Colusa and Northern Yolo County with conjunctive access to the surface water from the Sacramento River via a filtration system and pipelines that could be installed next to the Tehama Colusa Canal or the HWY 99 roadway that connects all of these communities. This could be incorporated with broadband infrastructure projects and electrical transmission line upgrades to optimize the resources spent on excavation and infrastructure.

c. DEI policies and objectives should also address the distribution of economic opportunity from the construction of the project but also public ease of travel and access to current and future recreational facilities surrounding the Sites project. Construction jobs and contractor opportunities should be offered and solicited from local residents and especially minority residents who are people of color. There should be public workshops regarding jobs and contracting opportunities. Public access to the communities surrounding Sites such as Leesville, Lodoga, and Stonyford should be as easy and short as possible to offer ease of access especially for local residents who are likely to have less economic resources to travel longer distances. There also should be ease of access to current and future recreational areas including the Colusa and Glenn County portions of the Berryessa Snow Mountain National Monument.

1. Chapter 3 Comments – Environmental Conditions

a. The operation of the Sites Reservoir is likely to affect future water supply and groundwater quality in the Colusa Subbasin if it promotes more water transfers and related groundwater substitution extractions from the aquifer. The California Water Commission is likely to approve inbasin groundwater trading which also could lead to more groundwater pumping especially in areas where deep wells are needed to achieve desired pumping volumes and where groundwater quality may be sacrificed for water quantity. The unique aspect of concern for the operation of the Sites Reservoir

is it provides a physical connection between inbasin surface water transfers and surface water export sales by Settlement Contractors. With the ability to store and deliver water via the Tehama Colusa Canal and the Glenn Colusa Irrigation District facilities surface water sales become fungible whether or not it is from a diverter on the Sacramento River in the Colusa Subbasin or from stored water in Sites that ultimately be delivered via the Tehama Colusa Canal and the Dunningan interconnect via the Colusa Basin Drain into the Sacramento River downstream. There is also economic incentive to engage in water quality arbitrage whereby fresh water is sold from the Sacramento River and salty groundwater is pumped via a groundwater substitution well or otherwise. The control over the conveyance system into Sites which ultimately makes its way back to the Sacramento River via the Dunningan interconnect would allow degraded quality groundwater to be blended in route to inbasin use or exported using the conveyance system to blend. There should also be some consideration how the likely development of inbasin groundwater trading may lead to overpumping and groundwater quality degradation since the Sites Reservoir may be a storage and water market transfer clearinghouse for Sacramento Valley water transfers.

b. The comments on Page 3-3 regarding the relative slow growth of the Colusa and Glenn communities seems to contrary to the State of California's objectives for DEI economically focused economic opportunity and a reasonable affordable housing policy. Just because an area has had slow growth in the past it does not justify condemning an area to be an economic wasteland especially since it is the area of origin for most of the State's water resources and offers the best opportunity to meet the State's affordable housing objectives. For example, the City of Williams has grown significantly in the past decade and faces challenges to its water resiliency because it does not have access to the same Sacramento Surface water that Sites will store. The ER should consider the State's housing and affordable housing and DEI housing and economic policies when making these statements.

c. The ER does not acknowledge the cultural assets that come with the areas 150 year historical heritage or its rich ecological resources that are being increasing used for ecotourism and ecofriendly stakeholders. The area surrounding the proposed site encompassing the historical towns or Leesvile, Lodoga and Stonyford which have a rich pioneer heritage and current ranching related activities. Wilbur Springs has become a eco-focused resort and is used as an access point for many who want to enjoy the surrounding natural points of interest. Most importantly there does not appear to be any mention of the increased use of the Mendocino National Forest and/or the northern portion of the Berryessa Snow Mountain National Monument which has recently expanded and could expand more in the future. The access to Leesville, Lodoga and Stonyford is important to provide access for public use of the National Monument and National Forest.

d. The ER does not address the loss of seasonal flooding that comes with historical flows from Stone Corral and Funks Creek. The confluence of these two Creeks occurs in the general wetland area and within part of the Willow Creek – Lurline Wetland Management Area just west of the Delevan Nation Refuge and provides the historical

flooding for seasonal wetlands outside the Delevan Refuge and the Colusa Refuge downstream. In addition there is substantial acreage set aside for seasonal wetlands in the western flood zone of the Colusa Basin Drain that provide food biomass for fish and aquatic species when the flood waters makes its way down the Colusa Basin Drain to the Sacramento River and it also provide vernal pool habitat and other benefits to the flora and fauna that are located in the riparian area of the Colusa Basin Drain. The riparian areas are important habitat for both the Delevan and Colusa Refuges but also downstream which was the historical confluence of the Sacramento River and Sycamore Slough. This area now provides a rich habitat for flora and fauna on the natural levee on the westside of the Colusa Basin Drain and the islands located in the channel of the Drain. Seasonally the flooding provides regenerative life to the seasonal flood zone. The ER does not seem to consider how the diversions from Funks Creek and Stony Creek may affect these flows especially in dryer years where flood events may not happen as often over a water year cycle.

2. Chapter 7 - Fluvial Geomorphology

    a. The description of the Colusa Basin Drain on 7.2.4 should highlight that the Colusa Basin Drain is the source of seasonal surface water supplies from winter floods for the Delevan National Refuge and Colusa National Refuge and the native islands and wetlands south of the Colusa National Refuge. It is wrong to state that the whole area has been modified because the reclamation levee starts south of the Colusa National Refuge and because the area west of the Levee is similar to its natural state before settlement and contains islands with natural habitat in the channel of the Colusa Basin Drain but also on the natural levees and flood zone on the west side of the channel. Please refer to the map of the habitat for the Colusa National Refuge which is representative of the riparian habitat on the west side of the Drain and its islands and the area of seasonal flooding for the wetlands on the west side of the Drain south of the two Refuges https://www.fws.gov/uploadedFiles/Region_8/NWRS/Zone_1/Sacramento_Complex/Sacramento/Uploaded_Files/Maps_and_Brochures/Habitats/Colusa%20NWR%20Habitat%20Mgt%20201213.pdf

3. Chapter 8- Groundwater Resources

    a. This Chapter relies on dated research for groundwater quality in the Colusa Subbasin. It relies on the work from Berkstresser which was done in 1973 which has elevated assumed levels for EC and TDS to determine Base to Fresh Water ("BFW") Assumptions. The reliance on Berkstresser does not reflect the most recent understanding of BFW and groundwater quality in the Sacramento Valley but more importantly does not provide the necessary information for the State to carry out its policy objectives for HRW and DEI concerns. The public supply system for all the impacted communities rely exclusively on groundwater and future trends in groundwater quality is paramount. Additionally the ER should be updated to discuss the loss of drinking water resources that was experienced during this last drought due to the failure of several hundred domestic wells and at least one public supply well as

previously discussed for the City of Williams.

b. The DWR has developed new BFW contour maps which should be relied on for the ER. Fresh groundwater is defined by the DWR as containing less than 1,000 mg/total TDS and approximately 1,550 umhos/cm specific conductance instead of the 3,000 umhos/cm used in Berstresser. According to the DWR the BFW is an uneven boundary that in some places reflects major geologic structures underlying the Sacramento Valley, and in other areas, transgresses underlying geologic structures. In some areas, the BFW boundary is well above the base of post-Eocene marine strata. According to the DWR, this is most likely caused by high artesian pressure and upward vertical gradients in deep aquifers in the Sacramento Valley, which has been documented in DWR monitoring wells, including the most recent multi completion monitoring well north of Arbuckle on Hahn Road. The DWR research suggests that migration of poor quality water into continental sediments that previously contained fresh water has occurred over geologic time. The DWRs findings is the basis for my concern about water quality and its implications for brackish and saline upconing beneath areas of prolonged groundwater pumping in the Colusa Subbasin and Sacramento Valley generally.
https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/CSPA%20et%20al/part2/aqua_246.pdf

c. The groundwater quality information in Appendix 8 and relied on in Chapter should be reconciled with the USGS Gamma Scientific Investigations https://pubs.usgs.gov/sir/2011/5002/ regarding the status of groundwater quality in the Colusa Subbasin and also the Bureau of Reclamation's own data regarding groundwater quality for wells used for Groundwater Substitution should also be used https://ceqanet.opr.ca.gov/2020029001/2. Please note that the majority of the water quality samples for wells used for groundwater substitution by Glenn-Colusa Irrigation District are above the Specific Conductance Threshold of 700 umhos/cm pursuant to the Draft Technical Information for 2015 Water Transfers. The wells identified as Reister # 2 and Reister # 3 have continuous observations between 1800 and 2000 umhous/cm as set out in Appendix I of the Environmental Assessment 2020 Tehama-Colusa Canal Authority In-Basin Water Transfers as cited above. Chapter 8 should also reference the Minimum Threshold and Measurable Objective for groundwater quality in Table 5.1 of the Colusa Subbasin Groundwater Sustainability Plan. The Measurable Objective is the same 700 umhos/cm as the Draft Technical Information Paper and the Minimum Threshold is 900 umhous/cm. The Draft Colusa Subbasin GSP can be accessed on https://colusagroundwater.org/

d. Section 8.4 makes a point that there was not a need for a Project to mitigate potential water quality degradation impacts "given the rural nature of the study area" . Is this type of logic consistent with the SWRB DEI Resolution or the DWR HTW Commitments. It should not matter if an area is rural or not if there is a Human Right involved. It should also be noted that local residents are likely to be persons of color so it there are negative impacts the impacted community would be the same community that the DEI Resolution is set out to protect.

e. Section 8.4 also makes a statement that there is no water quality contamination in the study area yet Table 2 sets out that an Arsenic contamination greater than the MCL for Arsenic and the EC for the Sites Reservoir is as high as 2190 umhou/cm which would equate to an approximate TDS level in excess of 1400 ug/L. Water is considered brackish at a TDS level of 1000 . See https://pubs.usgs.gov/circ/1358/ for discussions regarding the degradation of groundwater due to Redox, the desorption of Arsenic that occurs in Redox conditions and the movement of naturally occurring contaminants via faults all of which are conditions affecting water quality in the Colusa Subbasin and the Sacramento Valley in general.

f. Chapter 8 does not discuss groundwater quality degradation due to Redox at all. The USGS Circular 1358 referenced above and a Draft Technical Memorandum dated January 23, 2014 by CH2Mhilll " Arsenic in Groundwater, Soil, and Surface Water in Rice-Growing Areas of the Sacramento Valley " by Summer Bundy et. al. discuss the potential for Redox conditions and how Redox conditions can be aggravated by changes in soil oxidation levels that come with overpumping of groundwater or the upconing of anoxic salt water into parts of the aquifer where the anoxic water is exposed to oxygen. Figures 1 and 2 of the CH2Mhill Memorandum are important because it makes it clear that the rice growing areas include the area encompassing Funks and Stone Corral Creeks downstream from the Reservoir and describes the Redox process well in Figure 2. Please note that there has been several studies finding anoxic wells in the Valley below the Reservoir Site – including Table E-5 and Figure E-5 of the USGS Gamma Scientific Investigations referenced in (c) above.

g. Chapter 8 does not address the potential for seepage of water or the seepage of brackish water from the Reservoir site into the Valley floor from faults or other geological features including the potential movement via active subduction zones from current geological structures or future geological deformation as a result of a future earthquake. When constructed the Sites Reservoir will contain 1 to 1.5 million acre feet with a hydraulic head of 500 ft above the Valley Floor. Public supply and domestic wells are likely at least 200 feet below sea level so this hydraulic gradient has a great gravitational force to find its way to push saline groundwater into or aggravate the already existing high artesian pressures and upward vertical gradients in the deep aquifers referenced by the DWR as described in (b) above. It is clear that the Reservoir Site sits upon or is near a subduction zone or near the border of active or potentially active subduction zones. Figure 1 of the Paper " Glaucophane schists and ophiolites of the northern California Coast Ranges: Isotopic ages and their tectonic implications" by F.W. Mc Dowell et.al (1984) https://pubs.geoscienceworld.org/gsa/gsabulletin/article-abstract/95/11/1373/189453/Glaucophane-schists-and-ophiolites-of-the-northern?redirectedFrom=fulltext makes it clear that the subduction zone analysis is complex and that the Reservoir site is close to a boundary of ophiolitic materials and the deposits of the Great Valley Sequence. The area to the west of the Site near Goat Mountain and Stonyford and to the north of the Site near the town of Paskenta is also complex. The risk of this hydraulic head needs to be addressed in Chapter 8 and

assessed in context of the SWRB DEI Resolution and the DWR HRTW objectives and responsibilities.

h. The upconing of salt water in the Sacramento Valley is of great concern and there are many data gaps regarding this issue. What is clear is that groundwater extraction is occurring in a fresh water aquifer above a subduction zone and that over pumping degrades the fresh water aquifer either because previously anoxic salt water is exposed to oxygen and the Redox process occurs and/or the natural upward pressure gradient or artesian influences are also accelerating the contamination and Redox process. We need more data and to do that we need more multi-completion observation wells especially on the west side of the Sacramento Valley – groundwater quality needs to observed at multiple depths and the hydraulic gradient of each observation site needs to be observed and monitoring. The required analysis should be a time series of observations and these observations should focused on current hydrological conditions and futures hydrological conditions that may come with having the hydraulic head of the water storage sitting 500 feet above the Valley floor. There may be no influence but then there could be material influence especially as a result of a movement in a fault or an earthquake event. In order to monitor this potential contamination, the Project should invest in a series of monitoring wells in the Colusa Subbasin and finance this monitoring process working with the local Groundwater Authorities and Irrigated Lands.

i. After assessing all the groundwater quality concerns in conjunction with the State's objectives and responsibilities from the DEI resolution and HRTW, the logic for a Sacramento Valley West Side Filtration System is a compelling mitigation project that could be combined with other public infrastructure projects such as broadband and buried power lines running north and south via the Hwy 99 infrastructure adjacent to I-5. As I have mentioned previously in these comments, policy makers will spend billions of dollars on a project that will primarily urban residents down stream from the Reservoir but may end up leaving the residents and communities at the base of the project without a sustainable supply of fresh water either because there is not supply or because the Reservoir project itself caused degradation of the fresh water supply by seepage or increased hydraulic and artesian pressures forcing salt water into domestic wells and public supply systems like the public supply systems for Maxwell and the City of Williams.

5. Chapter 9 Comments - Vegetation and Wetland Resources

a. Section 9.3 appears to ignore the riparian and seasonal wetlands on the Colusa Basin Drain. Since this is the habitat that encompasses thousands of acres of wetland easements and two National Refuges this seems like a very material omission. Section 9.3.1. should include the discussion of the vegetation and wetlands in the Delevan and Colusa Refuges and all the wetland habitat on the Colusa Basin Drain below the two Refuges.

6. Chapter 10 Comments – Wildlife Resources

   a. In 10.2.2.4 – It is incorrect to group the Colusa Basin Drain habitat with the TC Canal or the GCID Main Canal. The Colusa Basin Drain is historical habitat that dates back before European Settlement that includes two National Refuges downstream, thousands of acres of designated wetlands, extensive riparian natural levee on the west side of the channels and several islands within the channel of the Colusa Basin Drain. It also delivers water for the ecosystem that is unique to seasonal flooded areas both within the Delevan and Colusa National Refuges and all the wetland easement areas south of the Site. The Wildlife Resources representative for the Sacramento Valley National Wildlife complex https://www.fws.gov/refuge/Sacramento/habitats.html which includes Delevan and Colusa National Refuges is also representative of the riparian natural levee on the west side of the Colusa Basin Drain, the islands in its channel and the wetland easements on the west side of the Colusa Basin Drain.

   b. There should be a discussion in 10.2.3 regarding the habitat for Vernal Pool Fairy Shrimp and Conservancy Fairy Shrimp at the seasonally flooded wetlands east of I-5 near the confluence of Funks Creek and Stone Corral Creek. If the winter flows are restricted too much because the flood waters are diverted to the Reservoir this habitat could be endangered. This habitat includes part of the Willow Creek – Lurline Wetland Management Area https://www.fws.gov/uploadedFiles/Region_8/NWRS/Zone_1/Sacramento_Complex/Sacramento/Uploaded_Files/Maps_and_Brochures/Location/Willow%20Creek%20Lurline%20WMA%20Location%20Map%202012.pdf As you can see from the Map, there is a portion of the Willow Creek – Lurline Management Area that is located where Funks Creek and Stone Corral Creek traverse I-5 and join before running into the Delevan National Wildlife Refuge and the Colusa Basin Drain. This type of habitat exists for the wetland easements and riparian areas of the Colusa Basin Drain.

   c. The discussion regarding the impact on Vernal Pool Branchipods should consider the effect of limiting the flood flows from Funks and Stone Corral Creek due to the diversion of these Creeks into the Reservoir. These vernal pools exist on much of the two Refuges and wetland easements on the Colusa Basin Drain.

   d. Generally – the discussion regarding all fauna discussed in this Chapter should be done in context to the natural habitat provided by the Colusa Basin Drain. Parts of the Drain like the portions encompassed by the Delevan and Colusa National Refuges have habitat on both sides of the Drain. South of the Colusa Refuge there is a levee on the east side of the Drain but the area between the toe of the levee on the east side all the way to the wetland easements on the west side is abundant habitat for Wildlife Resources. This is particularly the case in the area north of College City where the historical confluence of Sycamore Slough and the Colusa Basin Drain occurs. The was the historical confluence for the Sacramento River and the Colusa Basin Drain waterway before it was modified for Reclamation purposes.

7. Chapter 11 Comments – Aquatic Biological Resources

    a. The discussion in 11.2.2.2 regarding Nutrients and Foodweb Support should include a discussion regarding the Nigiri Project. https://www.nigiriproject.com/. The seasonal flooding on the Colusa Basin Drain is an important part of the Foodweb as illustrated by the findings of the Nigiri Project. To the extent that flood flows from Funks Creek and Stone Corral Creek are diverted the Foodweb highlighted in the Nigiri Project will be diminished especially regarding the seasonal wetlands and inundated riparian corridor along the Colusa Basin Drain.

    b. Fish Passage and Entrapment – Page 11-16 Salmon are present in the Colusa Basin Drain and have become entrapped https://www.fws.gov/fieldnotes/regmap.cfm?arskey=33853

    c. Discussion regarding Funks and Stone Corral Creek Page 11-299. Regarding the area of the confluence of Funks and Stone Corral Creeks on the east side of I-5, as noted in 6(b) above this area includes a portion of the Willow-Creek- Lurline Wetlands Management Area. What is missing from discussion and from this Chapter generally is any discussion regarding the aquatic species that live in the Colusa Basin Drain. As noted in (b) above salmon have been found in the Colusa Basin Drain. Local fisherman have fished for catfish on the Drain for years and Red Swamp Crayfish is abundant. Also missing from this discussion is the contribution to the Foodweb from seasonal flooding on the Colusa Basin Drain. The Colusa Basin Drain is ALIVE and is an important source of food for aquatic life in its channel but also downstream of Knights Landing where the confluence of the Colusa Basin Drain and the Sacramento River. Historically the confluence was via Sycamore Slough before Reclamation so wild life species have depended on the Colusa Basin Drain habitat since the end of the Great Valley Sequence. Since Reclamation the confluence is at Knights Landing but the importance of its habitat has existed for millions of years since the Great Valley Sequence made it the low lying waterway and wetlands for the west side of the Sacramento Valley.

8. Chapter 12 Comments – Geology and Soils

    a. Section 12.2 is missing a discussion regarding the geologic issues associated with the geologic development of the Sacramento Valley as an archetypal forearc basin https://pubs.geoscienceworld.org/gsa/geology/article/47/8/757/571454/The-birth-of-a-forearc-The-basal-Great-Valley The geology at the Reservoir Site has a complex geological structure due to the existence of the subduction zone beneath and around the Site. As mentioned in 4 (g) above the Site is near a border of ophiolitic rocks and the deposits of the Great Valley Sequence – See Figure 1 from McDowell referenced in 4 (g) above. Also reference in McDowell is the unique development of the subduction zone near Goat Mountain to the west of the Site and the area near the town of Paskenta to the north. The Sites Reservoir is located in the Northern or Sacramento Valley Belt of Coast Range Ophiolites https://pubs-test.er.usgs.gov/publication/70026861 which have been largely influenced by the

historical development of the subduction zone caused by the collision of the Pacific and North American plates. This context is necessary to adequately assess future earthquake risk on the structure itself but also assess the risk of groundwater quality contamination caused by seepage and hydraulic head from the stored water in the Reservoir.

b. Table 12-2 and Figure 12-4 The Paskenta and Willows Fault needs to be included in the scope of this Chapter. This is an important fault affecting potential movement of natural occurring contaminants and possible could be impacted by the extra hydraulic gradient from the Sites stored water aggravating the artesian and upconing gradient that already exists in the groundwater aquifer in the Colusa Subbasin – see 4(b) above. The anticline near the recent Hamilton City earthquake should also be included https://earthquake.usgs.gov/earthquakes/eventpage/nc73545750/executive since this is the most recent land based earthquake near the Site,.

9. Chapter 16 Comments – Recreation Resources

a. Figure 16.1 should include the towns of Leesville, Lodoga and Stonyford since they are important bases for eco-exploration, eco-tourism and cultural heritage appreciation. These towns and the roads between them provide a great source of recreation and historical appreciation of the pioneer history of Colusa County

b. It is hard to believe that Figure 16.1 does not include the National Monument and National Forest adjacent to the Site. The south east part of Mendocino National Forest has several sites which are to the west of Stonyford https://www.fs.usda.gov/recarea/mendocino/recreation/hiking/recarea/?recid=25250&actid=50

c. There are several recreational sites accessible from Stonyford to the Berryessa and Snow Mountain National Monument. These are highlighted on the North Map https://www.blm.gov/sites/blm.gov/files/docs/2021-04/BSMNM_Brochure_508_small.pdf

d. There should be an extensive discussion of the Berryessa and Snow Mountain National Monument in this Chapter and a discussion on the recent expansion and future expansion possibilities. https://www.blm.gov/programs/national-conservation-lands/california/berryessa-snow-mountain-national-monument

10. Chapter 30 Comments – Environmental Justice and Socioeconomics

a. There should be a discussion about the SWRCB DEI Resolution and the DWR HRTW requirements and how these State Agencies policies and requirements should be implemented in the economic opportunity from the construction of the project, recreation access from the process and the necessary protection from groundwater quality degradation from the Project

Thank you for the opportunity to comment and your consideration of my comments. I look forward

to the completion of the Project and look forward to continued engagement as the Project progresses.

Sincerely,

Ben King