

**IN THE SUPREME COURT OF THE STATE OF NEVADA
OFFICE OF THE CLERK**

ADAM SULLIVAN, P.E., NEVADA
STATE ENGINEER, DIVISION OF
WATER RESOURCES, DEPARTMENT OF
CONSERVATION AND NATURAL
RESOURCES; SOUTHERN NEVADA
WATER AUTHORITY; CENTER FOR
BIOLOGICAL DIVERSITY; and MUDDY
VALLEY IRRIGATION CO.,

Appellants,

vs.

LINCOLN COUNTY WATER DISTRICT;
VIDLER WATER COMPANY, INC.;
COYOTE SPRINGS INVESTMENT, LLC;
NEVADA COGENERATION ASSOCIATES
NOS. 1 AND 2; APEX HOLDING
COMPANY, LLC; DRY LAKE WATER,
LLC; GEORGIA-PACIFIC GYPSUM, LLC;
REPUBLIC ENVIRONMENTAL
TECHNOLOGIES, INC.; SIERRA PACIFIC
POWER COMPANY, D/B/A NV ENERGY;
NEVADA POWER COMPANY, D/B/A NV
ENERGY; THE CHURCH OF JESUS CHRIST
OF LATTER-DAY SAINTS; MOAPA
VALLEY WATER DISTRICT; WESTERN
ELITE ENVIRONMENTAL, INC.;
BEDROC LIMITED, LLC; CITY OF NORTH
LAS VEGAS; and LAS VEGAS VALLEY
WATER DISTRICT,

Respondents.

Supreme Court No. 84739

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and 84809) Elizabeth A. Brown
Clerk of Supreme Court

**NEVADA COGENERATION ASSOCIATES NOS. 1 AND 2 RESPONSE
(OPPOSITION) TO SOUTHERN NEVADA WATER AUTHORITY'S
EMERGENCY MOTION FOR STAY UNDER NRAP 27(E) OF DISTRICT**

**COURT'S ORDER GRANTING PETITIONS FOR JUDICIAL REVIEW
PENDING APPEAL AND CENTER FOR BIOLOGICAL DIVERSITY'S
EMERGENCY MOTION FOR STAY UNDER NRAP 27(E) AND JOINDER**

COME NOW, Respondents, Nevada Cogeneration Associates Nos. 1 and 2 (“NCA”), pursuant to NRAP 27, by and through their undersigned counsel and file this response in opposition (“Opposition”) to the Southern Nevada Water Authority’s (“SNWA”) Emergency Motion for Stay Under NRAP 27(e) of District Court’s Order Granting Petitions for Judicial Review Pending Appeal (“SNWA Stay Motion”) and Center for Biological Diversity’s (“CBD”) Emergency Motion for Stay Under NRAP 27(e) and Joinder (“CBD Stay Motion”). This Opposition is based on the memorandum of points and authorities below and other pleading and papers on file herein and in the district court and administrative agency proceedings below.

NRAP 26.1 DISCLOSURE

The undersigned counsel of record certifies that the following are persons and entities as described in NRAP 26.1(a) and must be disclosed:

1. Respondents Nevada Cogeneration Associates Nos. 1 and 2 are businesses located in Clark County, Nevada. NCA may be considered affiliates, or subsidiaries, of Northern Star Generation, LLC and Panamint Capital, LLC.
2. Dyer Lawrence, LLP, by and through Francis C. Flaherty and Sue S. Matuska, is the law firm that represents NCA before this Court.

MEMORANDUM OF POINTS AND AUTHORITIES

I. INTRODUCTION

The Stay Motions have not been filed by Appellant State Engineer, but by other appellants, who have been in large part aligned with the State Engineer. Though largely aligned with the State Engineer, neither SNWA nor CBD possess authority to speak for the State Engineer or bind him to any course of conduct with the other respondents or before this Court. On June 8, 2022, the State Engineer did file a very short partial joinder to the Stay Motions, in which he stated:

The State Engineer . . . agrees that a stay pending the appeal(s) of the district court's Findings of Fact, Conclusion of Law and Order Granting Petitions of Judicial Review ("Order Vacating Order 1309") is appropriate.

In the absence of Order 1309, which establishes a maximum amount of groundwater pumping that can be sustained within the aquifer delineated as the Lower White River Flow System ("LWRFS"), and in light of the finding in the Order Vacating Order 1309, the State Engineer *is without means* to address the next *management and administrative steps* to identify how to *balance the interests of water right holders* within the LWRFS while being protective of the water resource.

State Engineer's Partial Joinder at 2-3 (emphasis added). The quoted language is remarkable in its lack of specificity regarding the joinder and as a frank admission that the State Engineer argues in favor a stay so that he can continue to act beyond his authority and in derogation of the due process rights of NCA and other respondents. When the State Engineer says that he is without "means," that is nothing more than "code" for his lack of "authority." Likewise, "management and administrative steps" and "balanc[ing] the interests of water right holders" are code

for “joint administration” and “conjunctive management,” both of which the district court held in no uncertain terms that the State Engineer lacks authority to undertake. Order Vacating Order 1309 at 27:8-20, at 28:3-13, at 29:9-15 (SNWA Motion for Stay Ex. 5 at 210-12).

This Court, NCA and other respondents are without the benefit of the State Engineer’s position, stated on the record, regarding what effect the requested stay may have on the other respondents, such as NCA, who hold senior groundwater rights that they have been actively using for decades and who prevailed in their petitions for judicial review in the district court. But we do know that the State Engineer views a stay as a license to exceed his powers during the pendency of this appeal.

SNWA and CBD assert irreparable injury absent a stay; however, the authorities cited by SNWA show that it is NCA that will suffer serious or irreparable injury if this Court grants a stay, because a stay will have the effect of reinstating State Engineer Order 1309 (“Order 1309”) (SNWA Motion for Stay Ex. 1) pending what could be a lengthy appeal in this matter. Order 1309 would then once again unlawfully hang over NCA’s head like the sword of Damocles.

II. ARGUMENT

The standards enumerated in NRAP 8(c) guide this Court’s decision.

A. NRAP 8(c)(1) - The Object of the Appeals will not be Defeated Absent a Stay.

SNWA and CBD have stated that the object of their appeals is the protection of senior surface water rights and the Moapa dace and its habitat. SNWA Stay Motion at 8; CBD Stay Motion at 9:2-3. But in procedural terms, such statements can only be viewed as factual context. The actual object of the appeals can only be reinstatement of Order 1309 or a remand to the district court in the hope of a similar, ultimate outcome. SNWA and CBD have failed to demonstrate how reinstatement of Order 1309 or remand to the district court would be defeated absent a stay.

B. NRAP 8(c)(2) - Neither SNWA nor CBD will Suffer Serious or Irreparable Injury if the Stay is Denied.

SNWA asserts that “[a]ny act which destroys or results in substantial change in property, either physically or in character in which it has been held, does irreparable injury.” SNWA Stay Motion at 9. SNWA appends three citations to the foregoing quote, but it only appears in *Memory Gardens v. Pet Ponderosa Memorial Gardens*. 88 Nev. 1, 4, 492 P.2d 123, 125 (1972). And the facts of the *Memory Gardens* case were vastly different than the case *sub judice*; therefore, SNWA’s reliance on the case is misplaced.

Memory Gardens involved a lease in which the lessor agreed to supply the lessee with water so that it could operate a pet cemetery. The dispute arose when the lessor “summarily terminated the water supply to the [lessee’s] property [and w]ithin a short period of time the grass, shrubs and trees dried up and died.” *Id.* at 2, 492 P.2d at 123. The Court found that “[r]endering the pet cemetery barren and

devoid of grass and shrubbery and keeping it in that condition was an irreparable physical change,” which destroyed or resulted in substantial change to the property and thus constituted irreparable injury. *Id.* at 4, 495 P.2d at 125.

In support of its Stay Motion, SNWA has presented nothing concrete to this Court that there will be a substantial, irreparable physical change in terms of spring flow in the Muddy River Springs Area or surface flows in the Muddy River during the pendency of its appeal. Nor has SNWA presented evidence in its Stay Motion that there will be a substantial change in the character of its water rights during the pendency of its appeal. SNWA has merely argued that absent a stay, the State Engineer will be unable to utilize the 8,000 afa pumping limit established in Order 1309 “*to prevent* increased groundwater pumping *[i]f pumping increases* above the current amount of 8,000 afa.” SNWA Stay Motion at 10 (emphasis added).

SNWA also argues that the district court’s order creates “significant ambiguity” regarding the State Engineer’s ability to protect senior water rights because the court found he was without “legal authority to jointly administer groundwater basins and conjunctively manage groundwater and surface water.” *Id.* at 11. The State Engineer only possesses the authority delegated to him by the Legislature. *Wilson v. Pahrump Fair Water, LLC*, 481 P.3d 853, 856, 137 Nev. Adv. Rep. 2 *8 (2021). Thus, by asking this Court to issue a stay to resolve an “ambiguity” in the scope of the State Engineer’s authority, SNWA actually asks this

Court to legislate and grant him such authority during the pendency of the appeal.

But “legislating” in any context is plainly the province of the Nevada Legislature, and the Court should reject this invitation to impinge upon the function of a coordinate branch of government. *Andrews v. Nevada State Bd. of Cosmetology*, 86 Nev. 207, 208, 467 P.2d 96 (1970) (official powers of an administrative agency cannot be “created by the courts in the exercise of their judicial function.”). For the same reason, this Court should decline to grant a stay to fill an alleged “void” in the powers of the State Engineer to “seek alternative means to protect existing rights during the pendency of this appeal.” SNWA Stay Motion at 11.

CBD cites *Czipott v. Fleigh*, 87 Nev. 496, 499, 489 P.2d 681, 683 (1971), for the proposition that the destruction of a party’s property is “sometimes regarded as an irreparable injury.” CBD Stay Motion at 11:11-14. CBD has no water rights or other property in the LWRFS affected by Order 1309, and neither it nor any other appellant have demonstrated that any water right will be “destroyed.” Thus, this is not the same situation as *Czipott*, where there was real, concrete and imminent danger of horse excrement infiltrating the water source:

[T]he floor around the pumphouse was cracked, there was ground erosion surrounding the pumphouse and the corral was located 22 feet from the well. A test showed some signs of contamination which was not present before the horses were on the premises.

Id. at 498, 489 P.2d at 682.

Thereafter, CBD cites and briefly discusses two cases: *Amoco Prod. Co. v. Village of Gambell*, 480 U.S. 531, 107 S. Ct. 1396 (1987), which concerned an injunction sought under the Alaska National Interest Lands Conservation Act and, *Sierra Club v. Marsh*, 816 F.2d 1376 (9th Cir. 1987), which concerned a preliminary injunction sought under the Endangered Species Act of 1973. CBD Stay Motion at 11:15-22. Although the cited cases offer a glimpse into judicial thinking about injunctive relief in the context of those specific and specialized federal statutes, neither of those statutes are before this Court; thus, the cited authorities are of little utility for this Court in conducting its NRAP 8(c) analysis.

C. NRAP 8(c)(3) - NCA Will Suffer Irreparable or Serious Injury if the Stay is Granted.

The district court's order restored NCA's water rights to their appropriate status—very senior groundwater rights in the Black Mountains Area Hydrographic Basin. NCA has been using its fully certificated water rights on a continuous basis for 29 years to generate electricity for Nevada consumers. Exhibit 1 (Dist. Ct. ROA No. 580 at 39732). NCA invested hundreds of millions of dollars for the construction and operation of their power plants. As explained by the district court:

The prior appropriation doctrine in Nevada, the “driest state in the nation” becomes particularly critical when, as in the instant case, there is not enough water to satisfy all of the existing rights of the current water holders, ***and the threat of curtailment looms ominously in the near future.*** One of the greatest values of a senior priority right is the assurance that the holder will be able to use water even during a time of water shortage because junior water rights holder will be curtailed

first. Thus, *senior right holders rely* on their senior priority rights when developing businesses, entitling and permitting land development, negotiating agreements, *making investments*, obtaining permits and various approvals from State and local agencies, and generally *making financial and other decisions based on the relative certainty of their right*.

Priority in time of a right is only as valuable as where the holder stands in relation to others in the same situation, or more specifically in this case, in the same basin.

Order Vacating Order 1309 at 22:15-26 (SNWA Motion to Stay Ex. 5 at 210) (emphasis added) (*quoting United States v. State Eng'r*, 117 Nev. 585, 592, 27 P.3d 51, 55 (2001)).

Thus, by their Stay Motions, SNWA and CBD seek to undertake an “act which . . . results in substantial change in [NCA’s] property . . . or in [the] character in which it has been held,” and which will do “irreparable injury” to NCA. *Memory Gardens*, 88 Nev. at 4, 492 P.2d at 125. This is so because upon reinstatement of Order 1309, the hundreds of millions of dollars NCA has invested and the power it generates for southern Nevada will once again be at risk, because within Order 1309, the State Engineer proclaimed:

The maximum quantity of groundwater that may be pumped from the Lower White River Flow System Hydrographic Basin on an average annual basis without causing further declines in Warm Springs Area spring flow and flow in the Muddy River *cannot exceed 8,000 afa and may be less*.

SNWA Ex. 1 at 65 (emphasis added).

SNWA asserts that respondents, including NCA, will suffer no serious or irreparable harm if this Court issues a stay because “existing groundwater pumping will be allowed to continue in the LWRFS” and that “[i]n Order 1309 the State Engineer did not cut off any existing groundwater pumping.” SNWA Stay Motion at 12. But this so-called “assurance” from SNWA rings hollow, because it comes only from SNWA, and *not* from the State Engineer, who, as discussed *supra*, supports a stay so that Order 1309 will be at his full disposal, including the ability to determine that groundwater pumping must be *less* than 8,000 afa. Notably, although the State Engineer could have adopted or affirmed this attempted reassurance from SNWA in the partial joinder he filed, he failed or refused to do so.

Thus, Nevada consumers who rely upon NCA, may find themselves at the mercy of a curtailment order from the State Engineer in the putative new superbasin. That would be a “substantial change in . . . [the] character” of NCA’s water rights, and thus serious or irreparable injury. *Memory Gardens*, 88 Nev. at 4, 492 P.2d at 125. Order 1309 thus causes serious or irreparable injury to NCA’s senior groundwater rights by changing the character of those rights—stripping them of the seniority they held in their basin by combining them with other groundwater and surface water rights in other basins and the Muddy River stream system.

D. NRAP 8(c)(4) - SNWA and CBD are Not Likely to Prevail on the Merits of their Appeals.

Briefly, the overarching issue, distilled to its essence, is: All of the appellants

argue that in some fashion, the Legislature delegated to the State Engineer the authority to aggregate together, for purposes of priority and potential curtailment as deemed necessary, groundwater permits, fully certificated groundwater rights and fully vested and adjudicated surface water rights spanning seven different hydrographic basins, where those same rights have been historically administered in separate basins, and where based on and in reliance upon that history, respondents have invested hundreds of millions of dollars of infrastructure for power generation and other uses of water.

The State Engineer simply does not possess such sweeping and breathtaking authority. In an effort to demonstrate such authority, SNWA has: (1) cobbled together bits and pieces of different statutes and argued that the sum of such bits and pieces is somehow greater than the individual parts, but that is simply not the case; and, (2) cited to decisions from this Court that putatively place this Court's imprimatur on such authority, but the cases SNWA relies upon never addressed the issue in the manner it is presented in the case sub judice—does or does not the State Engineer have authority to impose multi-basin, joint administration and conjunctive management on vested water rights?¹

¹ CBD's citation to a Seventh Judicial District Court decision (CBD Stay Motion at 14:4-12) may be summarily disregarded pursuant to NRAP 36(c)(2) and (3).

In 1970, this Court held: “Official powers of an administrative agency cannot be assumed by the agency, nor can they be created by the courts in the exercise of their judicial function. The grant of authority to an agency *must be clear*.” *Andrews*, 86 Nev. at 208, 467 P.2d at 96 (*citing Federal Trade Comm’n v. Raladam Co.*, 283 U.S. 643 (1931); *Cabell v. City of Cottage Grove*, 130 P.2d 1013 (Ore. 1942)). The State Engineer is a creature of statute and his authority is limited to that “which the legislature expressly or implicitly delegates.” *Pahrump Fair Water, LLC*, 481 P.3d at 856, 137 Nev. Adv. Rep. 2 at *8 (*quoting Clark Cty. v. State, Equal Rights Comm’n*, 107 Nev. 489, 492, 813 P.2d 1006, 1007 (1991); *see Howell*, 124 Nev. at 1230, 197 P.3d at 1050 (noting that the State Engineer cannot act beyond statutory authority). Thus, SNWA’s “close enough” argument must be rejected.

III. CONCLUSION

This Court should deny the Stay Motion, thereby leaving the district court order fully intact, and thus preventing the State Engineer’s unlawful usurpation of the Legislature’s authority and the deprivation of due process wrought by Order 1309. SNWA and CBD have failed to satisfy the criteria required by NRAP 8(c) to obtain a stay, and the partial joinder filed by the State Engineer demonstrates the danger to NCA and other respondents if the stay is granted.

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RESPECTFULLY SUBMITTED this 8th day of June, 2022.

DYER LAWRENCE, LLP

By: 

Francis C. Flaherty

Sue S. Matuska

Attorneys for Respondents Nevada

Cogeneration Associates Nos. 1 and 2

CERTIFICATE OF SERVICE

I hereby certify that on June 8, 2022, service of the forgoing **NEVADA COGENERATION ASSOCIATES NOS. 1 AND 2 RESPONSE (OPPOSITION) TO SOUTHERN NEVADA WATER AUTHORITY'S EMERGENCY MOTION FOR STAY UNDER NRAP 27(E) OF DISTRICT COURT'S ORDER GRANTING PETITIONS FOR JUDICIAL REVIEW PENDING APPEAL AND CENTER FOR BIOLOGICAL DIVERSITY'S EMERGENCY MOTION FOR STAY UNDER NRAP 27(E) AND JOINDER** was filed electronically with the Clerk of the Court, and therefore electronic service was made in accordance with the master service list as follows:

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DATED this 8th day of June, 2022.



Kelly Gilbert

EXHIBIT 1

EXHIBIT 1

Rebuttal Report Pertaining to Interim Order 1303

Prepared on behalf of:

Nevada Cogeneration Associates
420 N. Nellis Blvd., #A3-400
Las Vegas, Nevada 89110

Prepared by:



This Rebuttal Report is being submitted containing the signature and stamp of Jay Dixon, one of three authors of this Report, and is thus in compliance with NAC 625.612 as Jay Dixon is the licensee who has responsible charge for this Rebuttal Report. The other two authors of this Report were travelling on this day and, because of the impending deadline for submission of Rebuttal Reports, were unavailable to physically place their signatures and stamp on the Report – but they will provide a separate page containing their signatures and stamp upon their return within the following week (August 19-23).

Jason Dixon, P.E.

Robert Coache, P.E.

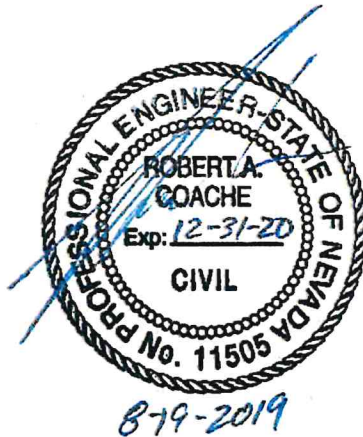
Hugh Ricci, P.E.

Rebuttal Report Pertaining to Interim Order 1303

Prepared on behalf of:

Nevada Cogeneration Associates
420 N. Nellis Blvd., #A3-400
Las Vegas, Nevada 89110

Prepared by:



Jason Dixon, P.E.

Robert Coache, P.E.



Hugh Ricci, P.E.

Rebuttal Report Pertaining to Interim Order 1303

Prepared by Jay Dixon, P.E., Robert Coache, P.E. and Hugh Ricci, P.E. (on behalf of NCA-1 and 2)

August 16, 2019

Overview

Nevada Cogeneration Associates Nos. 1 and 2 (NCA 1 and 2, or NCA) operate combined cycle gas-fired cogeneration facilities located at the southern end of the Lower White River Flow System (LWRFS). NCA 1 and NCA 2 began commercial operations in June 1992 and February 1993, respectively. Collectively, the two plants account for 170 MW in baseload generation capacity. NCA sells 100% of its electric output to NV Energy under the terms of a long-term Power Purchase Agreement and both facilities supply hot exhaust gas and chilled water to Georgia Pacific (GP) and Pacific Coast Building Products' (PABCO) gypsum facilities under the terms of an Energy Purchase Agreement. NCA 2 supplies chilled water to nearby PABCO via a closed loop. NCA 1 supplies chilled water to GP, which sends water back (directly) from their well.

The NCA facilities have played an integral role in economic output in the region for more than 25 years. NCA's water rights have been placed to continuous use since construction of facilities in 1992 and 1993. The continued access of their certificated water rights is critical for NCA's sustained operations.

The following discussion points are being provided as a representation of NCA's position relative to Interim Order 1303 (Order 1303) issued by the Nevada State Engineer (NSE). These points form the basis for NCA's rebuttal to issues identified by various stakeholders who submitted Reports in July 2019 as required per Order 1303. This Rebuttal Report is being submitted on behalf of NCA as the companies are stakeholder with interests that may be directly affected by any future water right developments and management decisions implemented by the State Engineer appurtenant to the LWRFS.

Rebuttal Comments

1. Standing of Non-Governmental Organizations Without Water Rights:

NCA objects to the inclusion and participation of Non-Governmental Agencies (NGO), such as the Center for Biological Diversity (CBD) and Great Basin Water Network (GBWN). In consideration of these NGOs as representing "interested persons," and with respect to a determination of a state water engineer or agency, a participant challenging such a determination must be asserting its own rights and interests, not those of a third party, and must demonstrate an injury in fact sufficient to confer common-law standing. *94 C.J.S (Corpus Juris Secundum) Waters § (458)*. Historically, it is the understanding of these authors that the NSE has required participants in hearings before the NSE to demonstrate an interest in either the affected real property that is directly affected by the water involved or, more often, in the water rights themselves in order to demonstrate such "standing" to participate in challenging or questioning any hydrologic determinations made by the State Engineer involving water rights in a particular basin. In this matter, the purpose of this portion of the proceeding, as was explained by Deputy Administrator Micheline Fairbank at the Prehearing Conference held on August 8, 2019, is to "determine what the sustainability is..." for the *stakeholders*.

These NGO participants are not "stakeholders." Furthermore, the NGOs do not own or control any water rights within the Muddy Rivers Spring Area (MRSA) or the LWRFS and do not own or control any property containing the habitat for threatened or endangered species. The threatened and endangered species of the MRSA and the springs to support these species are under the jurisdiction of the United States Fish and Wildlife Service (USFWS). The threatened and endangered species of Blue Point and Rogers Springs and the springs to support these species are under the jurisdiction of the United States National Park Service (NPS).

“Aggrieved” parties in a hearing process typically involve an applicant or protestant in a contested water right application determination. The NGOs here do not own land or water rights that would be affected by the NSE decisions within the LWRFS. Moreover, Order 1303 has not yet resulted in any decisions that provide the basis for a stakeholder to be “aggrieved” per the traditional understanding of that term; therefore, the NGOs have nothing to protest. Because the NGOs do not own land or water rights within the LWRFS and the basis for a grievance or protest does not exist, the NGOs do not have any legal standing in this process.

Given the obvious lack of legal standing and the limited hearing time allowed for this process, providing any significant time to these participants beyond mere public comment is a significant departure from prior State Engineer process and procedure.

2. Proposal by the NPS to include all of the Black Mountains Area Basin in the LWRFS.

The NPS is the only known stakeholder recommending that the LWRFS boundary currently proposed by the State Engineer be modified to include the entire Black Mountains Area (BMA), Basin 215. As currently proposed, the LWRFS includes a small portion of the northwest corner of the BMA north of the Las Vegas Shear Zone on the basis that NCA carbonate production wells appear to be hydraulically connected to the same sedimentary rocks that are present in southern Garnet Valley (Interflow, 2019¹).

The position taken by the NPS for this recommendation appears to be based on an unsubstantiated flow path from Garnet Valley, beneath California Wash and the Black Mountain Area basins that discharges at Rogers and Blue Point Springs located within the Lake Mead National Recreation Area (Tetra Tech, 2012²). However, if true, groundwater from the Paleozoic carbonate aquifer would have to pass through Mesozoic clastic sediments and the Tertiary basin-fill evaporites (Muddy Creek and/or Horse Spring) in the lower thrust plate; a theory that is not supported by observed groundwater elevations in Garnet, Black Mountains and California Wash as described by Interflow (2019). Furthermore, differences between regional carbonate groundwater water chemistry and measurements from Roger and Blue Point Springs substantiate the lack of a direct connection between these springs and the regional carbonate aquifer.

Further justification for excluding the eastern portion of the BMA is supported by significantly different geology observed in wells completed near Lake Las Vegas. In this area, subsurface conditions are dominated by the Muddy Creek Formation, which consists of gypsum and siltstone conglomerates. The only potential groundwater resource in the southeastern portion of BMA (outside of the portion included within the LWRFS) may be the Tertiary Thumb Member of the Horse Spring Formation, which consists of sandstone and volcanic breccia (Castor, et.al., 2000³ and Sitton, 2010⁴).

In summary, various discontinuities observed in the mapped geology, subsurface structures, potentiometric surfaces and groundwater geochemistry fully support the State Engineer’s decision to include only the northwestern portion of the BMA. The portion of the BMA basin currently included within the proposed LWRFS boundary should remain as designated.

¹ Interflow Hydrology, Inc., 2019. Garnet Valley Groundwater Review for APEX Industrial Complex, City of North Las Vegas, Clark County, Nevada.

² Tetra Tech GEO, 2012. Predictions of the Effects of Groundwater Pumping in the Colorado Regional Groundwater System, Southeastern Nevada, 28p. plus figures and 2 appendices.

³ Castor, S.B., Faulds, J.E., Rowland, S.M., and dePolo, G.M., 2000, Geologic map of the Frenchman Mountain Quadrangle, Clark County, Nevada: Nevada Bureau of Mines and Geology.

⁴ Sitton, M.E., 2010, Stratigraphic analysis of the lower Horse Spring Formation in the Frenchman Mountain Block, Lake Mead domain: Insights into paleogeography and ties to the Gold Butte Block: GSA Abstracts w/programs, v. 42, n.5, p. 471.

3. Proposal by the USFWS to include the Lower Meadow Valley Wash Basin in the LWRFS.

The Lower Meadow Valley Wash (LMVW), Basin 205, should continue to be managed outside of the LWRFS. As part of the Order 1303 report submitted by the USFWS⁵ a proposal was made to include LMVW basin within the LWRFS. The USFWS noted that carbonate aquifer monitoring in the vicinity of LMVW is sparse, but Wilson (2019)⁶ interpreted the upper carbonate potentiometric surface to be higher than observed alluvial aquifer levels from NV Energy wells near the southern basin boundary. These wells were pumped extensively up through the latter part of the 1980s and have not been used since. While alluvial aquifer levels continue to recover from the historic pumping, the water chemistry has not recovered, with TDS observations in the range of 3,000 mg/l (Converse Consultants, 2010⁷). The nearest carbonate groundwater levels are monitored in wells EH-3 and EH-7. EH-7 is situated within Weiser Wash and proximal to the Glendale Thrust Fault located only 1 mile southeast of the LMVW hydrographic basin boundary (Figure 1). There is obvious communication between the alluvial aquifer levels in the LMVW and carbonate levels as reflected in the hydrographs for EH-8a and 8b (Figures 2 and 3). EH-8a is completed in the lower alluvial aquifer and the EH-8b is completed within the underlying Muddy Creek formation. Both hydrographs exhibit continuous recovery from historical pumping by NV Energy within their LMVW wellfield.

⁵ USFWS, 2019. Issues Related to Conjunctive Management of the Lower White River Flow System. Presentation to the Office of the Nevada State Engineer in Response to Order 1303.

⁶ Wilson, J.W., 2019, Drilling, construction, water chemistry, water levels, and regional potentiometric surface of the upper carbonate-rock aquifer in Clark County, Nevada, 2009–2015: U.S. Geological Survey Scientific Investigations Map 3434, scale 1:500,000, <https://doi.org/10.3133/sim3434>

⁷ Converse Consultants, 2010. Groundwater Level Monitoring Program, 2009 Annual Report. Prepared for NV Energy.



Figure 3. Southern portion of the Lower Meadow Valley Wash Basin and monitoring well locations.

Site Name 205 S14 E66 35CABA1
Well Name: EH-8a
Owner: Nevada Power Company
Elevation: 1534.03
USGS Site ID:
Well Log(s):
Depth:

Perforations From:
Perforations To:
Latitude (Decimal Degrees NAD 83): 36.67357
Longitude (Decimal Degrees NAD 83): -114.57781
Location Accuracy:
Status: Active
Permit Number:

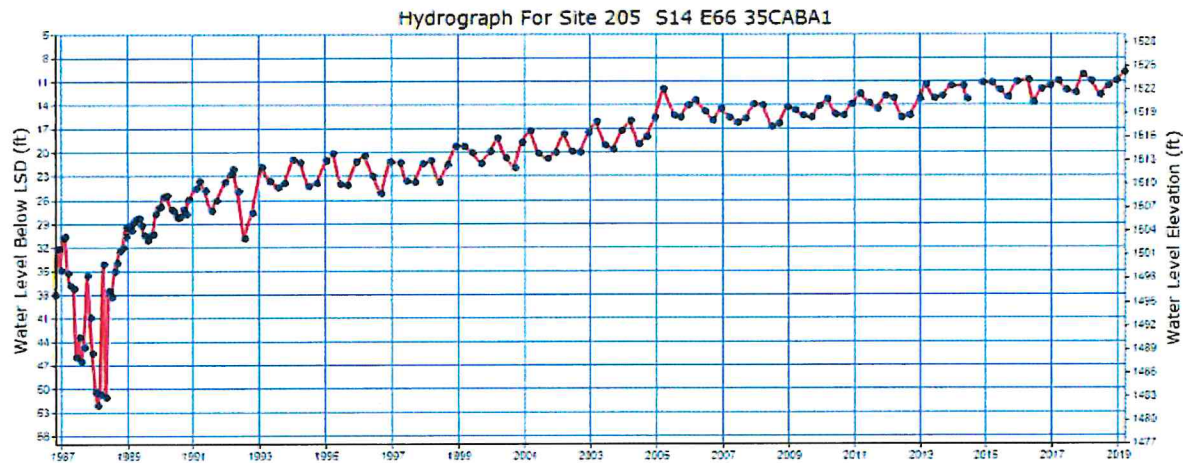


Figure 2. NV Energy monitoring well EH-8a located in southern Lower Meadow Valley Wash basin. The well is screen within the Muddy Creek Formation (NDWR, 2019).

Site Name 205 S14 E66 35CABA2
Well Name: EH-8b
Owner: Nevada Power Company
Elevation: 1534.03
USGS Site ID:
Well Log(s):
Depth:

Perforations From:
Perforations To:
Latitude (Decimal Degrees NAD 83): 36.67357
Longitude (Decimal Degrees NAD 83): -114.57781
Location Accuracy: 1
Status: Active
Permit Number:

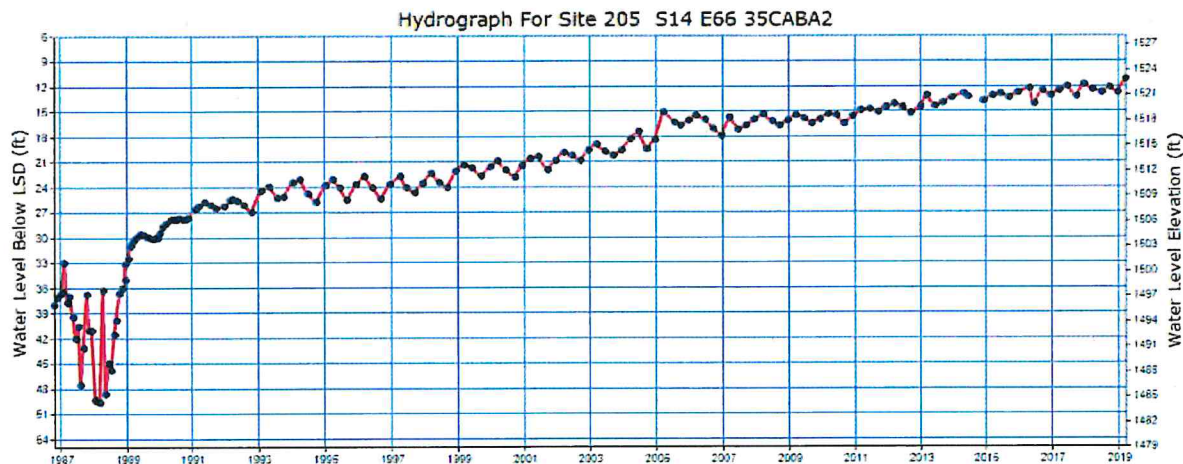


Figure 3. NV Energy monitoring well EH-8b located in southern Lower Meadow Valley Wash basin. The well is screen within the alluvial aquifer; nested monitoring well screened below EH-8a in the underlying Muddy Creek sediments (NDWR, 2019).

A similar recovery (to the LMVW alluvial aquifer) is observed in the EH-3 and EH-7 hydrographs (Figures 4 and 5) with no apparent response to the regional signal exhibited in other carbonate wells near the Muddy River Springs area such as EH-4 and 5b. The lack of continuity between water level trends observed in the LMVW when compared to alluvial and carbonate water levels is supported by geologic descriptions provided in LVVWD (2001)⁸ and Page et. al. (2006)⁹. Within the southern portion of the LMVW basin, the entire Paleozoic section has been folded and thrust faulted from the west to the east through compressional forces, which caused folding and overturning of the original flat-lying beds. The shearing resulted in older rock overlying younger rock units in some locations such as along the Glendale Thrust to the east. These structures help explain the apparent lack of a consistent (LWRFs) regional response in carbonate water levels and Muddy Creek and alluvial groundwater levels at the south end of the LMVW basin.

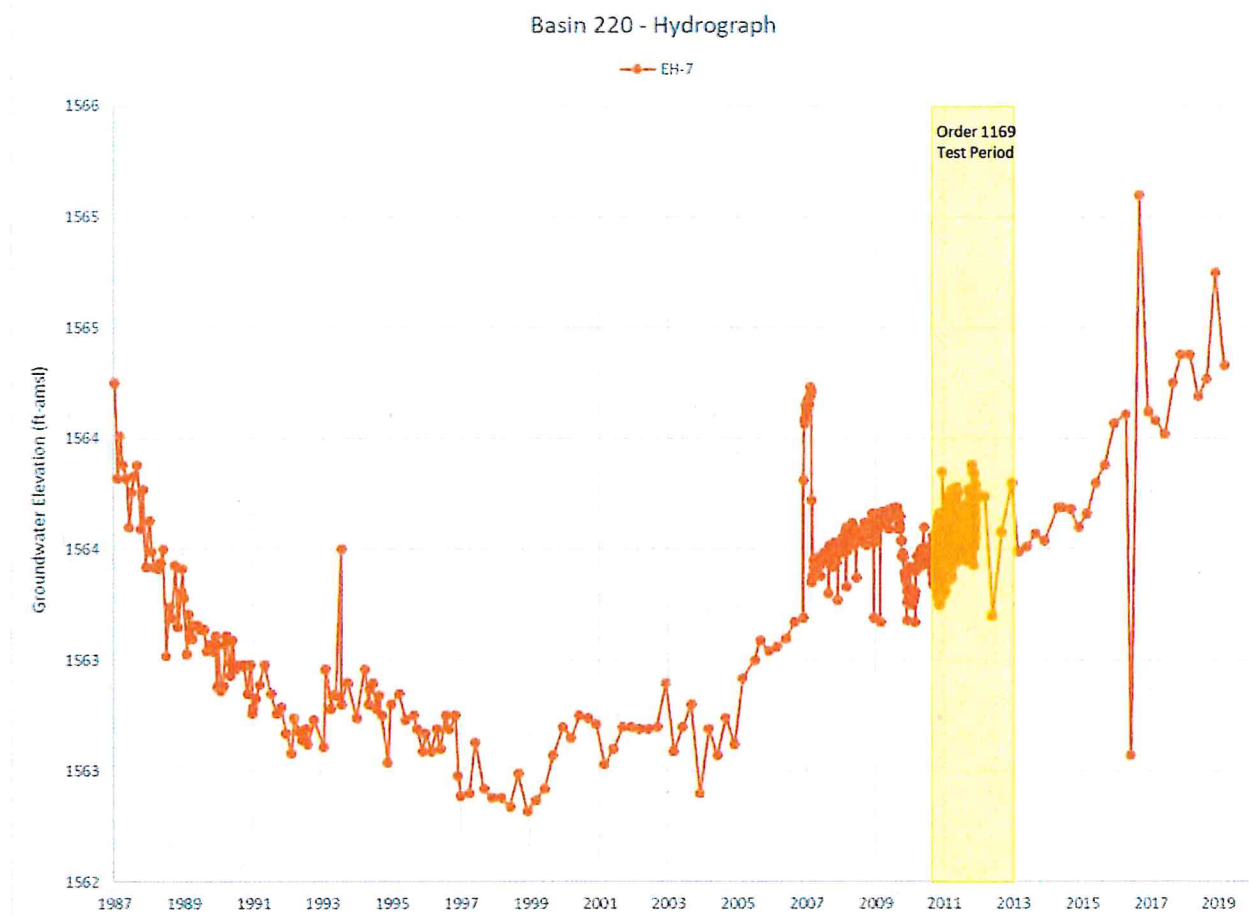


Figure 4. Carbonate monitoring well located approximately 1 mile east of the LMVW basin boundary (NDWR, 2019).

⁸ Las Vegas Valley Water District (LVVWD), 2001, Water Resources and Ground-Water Modeling in the White River and Meadow Valley Flow Systems, Clark, Lincoln, Nye and White Pine Counties, Nevada.

⁹ Page, W.R., Scheirer, D.S., Langenheim, V.E., and Berger, M.A., 2011, Revised Geological Cross Sections of Parts of the Colorado, White River, and Death Valley Regional Groundwater Flow Systems, Nevada, Utah, and Arizona: U.S. Geological Survey Open-File Report 2006-1040, 1 sheet, 25 p. pamphlet.

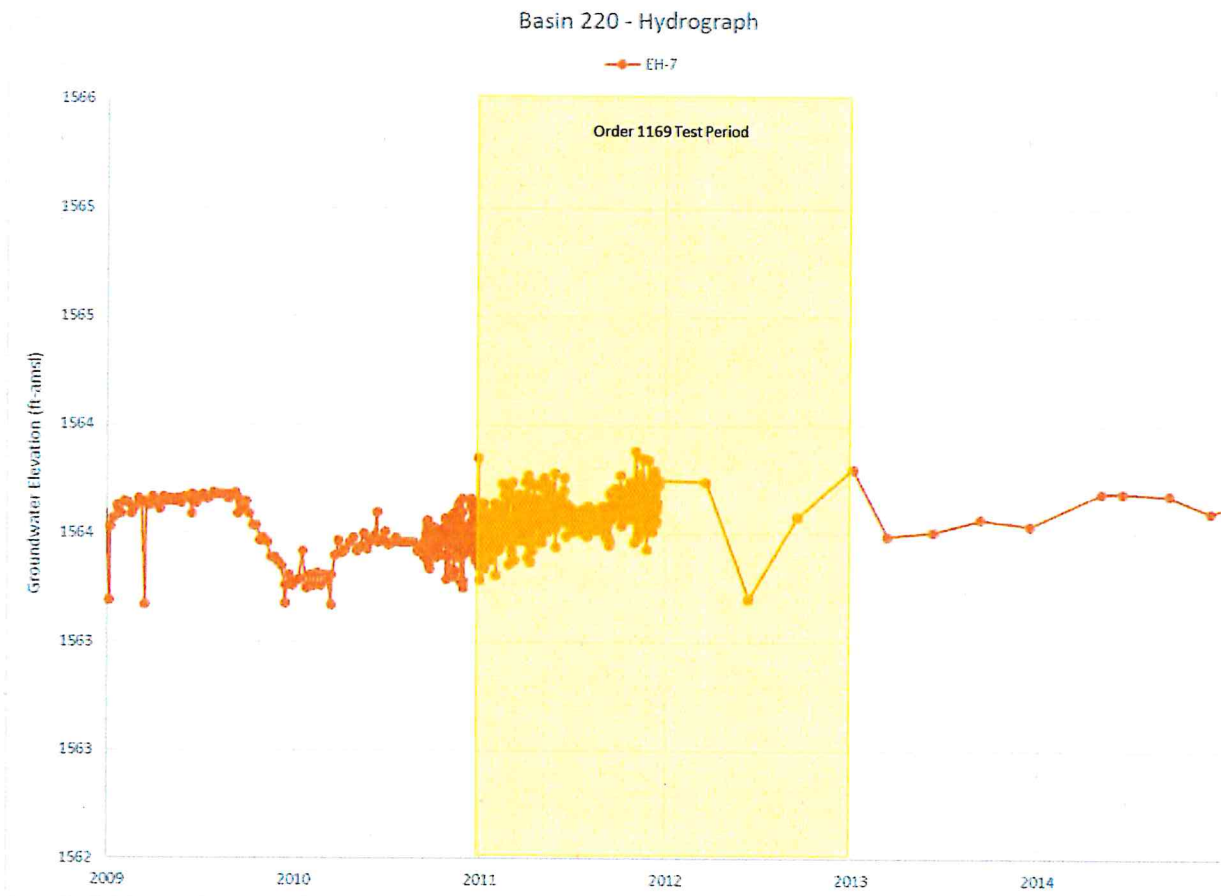


Figure 5. Carbonate monitoring well located approximately 1 mile east of the LMVW basin boundary. Hydrograph reflects water levels during the 2 years leading up, during and following the Order 1169 aquifer test. Note absence of any regional carbonate response (NDWR, 2019).

While some flux of shallow alluvial aquifer water may occur through the southern boundary of the LMVW aquifer it is probably limited, and future alluvial groundwater development is unlikely due to the poor water chemistry. Furthermore, as explained in Burbey (1997)¹⁰ and shown in geologic sections included in Rowley, et. al. (2017)¹¹, development of a carbonate aquifer source in the LMVW (anywhere near the southern boundary) would require a well completed to a depth of approximately 4,000 ft, which is highly unlikely. For these reasons and due to the lack of continuity between observed water levels within the LMVW compared with regional trends observed within the LWRFS, it is our recommendation that the NSE continue managing the LMVW separately from the LWRFS.

¹⁰ Burbey, T. J., 1997, Hydrogeology and potential for ground-water development, Carbonate-Rock Aquifers, southern Nevada and southeastern California: U. S. Geological Survey Water Resources Investigations 95-4168, 65 p.

¹¹ Rowley, P.D., G.L. Dixon, E.A. ManKinen, K.T. Pari, D.K. McPhee, E.H. KcKee, A.G. Burns, J.M. Watrus, E.B. Ekren, W.G. Patrick, and J.M. Bandt, 2017. Geology and geophysics of White Pine and Lincoln counties, Nevada, and adjacent parts of Nevada and Utah—the geologic framework of regional groundwater flow systems. Nevada Bureau of Mines and Geology Report 56. Scale 1:250,000, 4 plates.

4. Proposal to include the Kane Springs Basin in the LWRFS.

As currently proposed by the NSE, Order 1303 does not include Kane Springs Valley (KSV). However, there is significant correlation between KMW-1 and impacts from pumpage within the LWRFS with effects from present day pumpage within the LWRFS observed in well KMW-1. Therefore, it stands to reason that KSV be added to the LWRFS to protect existing senior rights.

In response to the NSE's Interim Order 1303 Lincoln County Water District and Vidler Water Company (Lincoln/Vidler) submitted a report titled "Lower White River Flow System Interim Order #1303 Report Focused on the Northern Boundary of the Proposed Administrative Unit" dated July 3, 2019 (Lincoln/Vidler Report).

Lincoln/Vidler makes a number of assertions in the Lincoln/Vidler Report¹² with regards to the pumpage of groundwater within Kane Springs Valley (KSV), which conflict with the results of the Order 1169 aquifer test conducted within the LWRFS.¹³ NCA disagrees with the following points from the Lincoln/Vidler report:

- The effects of pumping from KSV would not be felt for over 100 years outside of KSV.
- There is no discernible trend/pattern in water levels overtime between production well KPW-1 and pumping trends.
- There is no correspondence between the water level trends in wells in KSV/northern Coyote Spring Valley (CSV), and wells located in southern CSV.
- The trend in water levels in both KMW-1 and CSV-4 indicate water levels are still being affected by the 2005 precipitation event.

Based on the these points, Lincoln/Vidler concluded in part that:¹⁴

"...there is no evidence-based reason to impose that plan on basins outside of the Order No. 1169 geographic area. In fact, and on the contrary, there are science-based reasons to exclude KSV/northern CSV from the LWRFS as identified in this report."

Additionally, based on the key points and conclusion, Lincoln/Vidler makes two main recommendations as follows¹⁵:

A. Continue to exclude KSV from the LWRFS administrative unit.

The scientific data supports excluding KSV from the LWRFS administrative unit. The most salient point is that the carbonate wells KPW-1 in southern KSV and CSV-4 in northern CSV have different hydraulic heads than other heads further south in the LWRFS. This was explained by the new geophysical data that was collected from northern CSV, which shows there are several structural controls, including faults that occur in the northern CSV and would represent impediments for groundwater flowing from KSV/northern CSV into the LWRFS groundwater basins. There is no

¹² Pages 6-1 and 6-2 of Lincoln/Vidler Report Titled "Lower White River Flow System Interim Order #1303 Report Focused on the Northern Boundary of the Proposed Administrative Unit" dated July 3, 2019

¹³ Pages 6-1 and 6-2 of Lincoln/Vidler Report Titled "Lower White River Flow System Interim Order #1303 Report Focused on the Northern Boundary of the Proposed Administrative Unit" dated July 3, 2019

¹⁴ Page 6-2 of Lincoln/Vidler Report Titled "Lower White River Flow System Interim Order #1303 Report Focused on the Northern Boundary of the Proposed Administrative Unit" dated July 3, 2019

¹⁵ Page 7-1 and 7-2 of Lincoln/Vidler Report Titled "Lower White River Flow System Interim Order #1303 Report Focused on the Northern Boundary of the Proposed Administrative Unit" dated July 3, 2019

indication from the water level data of either KMW-1 or CSV-4 that there were any noticeable effects from the Order No. 1169 aquifer test. What was observed and was significant was the dissipating effects of an over-arching precipitation event in 2005 that affected water levels in these wells for years.

In support of the conclusions and subsequent recommendation that the NSE continue to exclude KSV and the northern portion of CSV from the LWRFS administrative unit, Lincoln/Vidler appears to misrepresent statements contained in Rulings issued prior to the availability of Order 1169 aquifer test data and misrepresents the Order 1169 data. The most significant of these misrepresentations or contradictions are discussed below.

B. The NSE did not include KSV in the Order No. 1169 aquifer test.

The statement, while true, is misleading, as Order 1169 was issued by the NSE on March 8, 2002, at which time there were no active groundwater permits or viable applications within KSV. Therefore, there were no uses or wells to be monitored at the time Order 1169 was issued by the NSE and subsequently there was no reason to include a hydrologic basin that had no uses or wells to monitor.

C. Lincoln/Vidler makes the claim that the NSE has already ruled on the issue of whether the appropriation of groundwater from KSV would affect the Muddy River Springs Area (MRSA) Hydrographic Basin, or for that matter other springs of interest. To validate this claim Lincoln/Vidler cites excerpts from Ruling 5712 as follows:

*"The State Engineer finds there is not substantial evidence that the appropriation of the limited quantity [of water] being granted under this ruling will likely impair the flow at Muddy River Springs, Rogers Springs or Blue Point Springs."*¹⁶

To further support their claim Lincoln/Vidler cites NSE Ruling 5712 as follows¹⁷:

"The State Engineer finds there is not substantial evidence that the appropriation of a limited quantity of water in Kane Springs Valley Hydrographic Basin will have any measurable impact on Muddy River Springs that warrants the inclusion of Kane Springs Valley in Order No. 1169."

Ruling 5712 was issued on February 2, 2007, approximately seven years prior to the conclusion of the Order 1169 aquifer test resulting in observed impacts within the LWRFS directly attributable to the test at MX-5. As reported in SNWA's report titled Assessment of Lower White River Flow System Water Resource Conditions and Aquifer Response dated Assessment (SNWA Assessment Report), the pumping stresses imposed during the Order 1169 aquifer test were very apparent and by the end of the 2-year aquifer test, discharge from Pederson Spring was reduced to about one-third of its pre-test flow, from 0.21 to 0.07 cfs and discharge measured at the Warm Springs West gage declined about 8 percent, from 3.70 to 3.41 cfs. Both springs are located within the complex referred to as the MRSA. Additionally, after the pump test was halted discharge at the Warm Springs West gage continued to decline and, had the

¹⁶ Page 20 of Ruling 5712 dated February 02, 2007

¹⁷ Page 21 of Ruling 5712 dated February 02, 2007

pump test or operation of the MX-5 well continued, the initial trigger of 3.2 cfs at the Warm Springs West gage would have been reached before the end of 2014.¹⁸

More concerning than the actual impacts caused by the Order 1169 aquifer test is the observation that the carbonate-aquifer water levels have not recovered to pre-test levels, spring flows measured at the Pederson Spring and Warm Springs West gages have not recovered to pre-test levels and system recovery achieved its maximum levels between early 2015 and early 2016, with both carbonate aquifer water levels and spring flow trending lower.

- D. Lincoln/Vidler claims that the NSE's determination that there would be no impairment from pumping in KSV as referenced above was affirmed seven years later in Ruling 6254 and quotes the NSE as follows:

*"...the State Engineer found that where no significant effects would be felt for hundreds of years, the upgradient water could be appropriated."*¹⁹

Based on this truncated excerpt Lincoln/Vidler claims that "KSV groundwater can be developed because there will be no significant impact, if any, from appropriation of the groundwater for hundreds of years."²⁰ The Lincoln/Vidler stated claim based on a truncated finding in Ruling 6254 is a misrepresentation of the actual finding by the NSE in Ruling 6254.

The full finding in the NSE Ruling 6254 states as follows:

"For basins similar to Coyote Spring Valley, where there is no groundwater evapotranspiration and all of the groundwater flows in the subsurface to an adjacent basin, recent rulings have limited the perennial yield to the portion of recharge from precipitation in that basin that was not needed to satisfy rights in the immediate downgradient basin. In State Engineer's Ruling Nos. 6165, 6166, and 6167, there was a consideration for how long it might take for an existing water right to be impacted, and the State Engineer found that where no significant effects would be felt for hundreds of years, the upgradient groundwater could be appropriated...."

The vast majority of the scientific literature supports the premise that, unlike other separate and distinct basins in Nevada that do not feature carbonate-rock aquifers, all of the Order 1169 basins share virtually all of the same supply of water. The Order 1169 pumping test further supports the conclusion that pumping from any of the five basins with a close hydrologic connection (Coyote Spring Valley, Muddy River Springs Area, Hidden Valley, Garnet Valley and California Wash) will have a similar impact on water levels in the five-basin area and on the Muddy River spring flows. Therefore, because these basins share a unique and close hydrological connection and share virtually all of the same source and supply of water, unlike other basins in Nevada, these five basins will be jointly managed. The perennial yield of these basins cannot be more than the total annual supply of 50,000 acre-feet. Because the Muddy River and Muddy River

¹⁸ Pages 5-13 SNWA report "Assessment of Lower White River Flow System Water Resource Conditions and Aquifer Response" dated June 2019.

¹⁹ Page 23 of Ruling 6254 dated January 29, 2014

²⁰ Page 2-3 of Lincoln/Vidler Report Titled "Lower White River Flow System Interim Order #1303 Report Focused on the Northern Boundary of the Proposed Administrative Unit" dated July 3, 2019

springs also utilize this supply, and are the most senior water rights in the region, the perennial yield is further reduced to an amount less than 50,000 acre-feet. The State Engineer finds that the amount and location of groundwater that can be developed without capture of and conflict with senior water rights on the Muddy River and springs remains unclear, but the evidence is overwhelming that unappropriated water does not exist.”²¹

Rulings 6165, 6166 and 6167 referenced by Ruling 6254 are appurtenant to Cave Valley, Dry Lake Valley and Delamar Valley, all of which are hydrologically different than CSV and KSV. Additionally, the reason for referencing Ruling 6254 was to acknowledge how the NSE had previously managed basin groundwater outflow and impacts to down gradient basin. In the case of NSE Ruling 6254 the NSE found that pumping from any of the five basins that were part of the Order 1169 aquifer test has a similar impact on water level in the five-basin area and on the Muddy River spring flows.

In addition to truncating the full finding by the NSE, Lincoln/Vidler fails to acknowledge the finding in the previously stated Ruling 5712 relevant to their applications which states:²²

“Given the unique hydrologic connection between the Kane Springs Valley Hydrographic Basin and the Coyote Spring Valley Hydrographic Basin, the development of ground water within Kane Springs Valley will ultimately affect water levels and flows in the White River regional carbonate-rock aquifer system. However, the State Engineer believes a small amount of water can be developed in the Kane Springs Valley and not unreasonably impact existing rights in the discharge areas of the White River carbonate-rock aquifer system, which are already fully appropriated. Well KMW-1 lies within 1,000 feet of Coyote Spring Valley and pumping simulations by the Applicant show a cone of depression extending well into Coyote Spring Valley...”

E. The Lincoln/Vidler transmittal letter dated July 3, 2019²³, states in part that:

“Groundwater pumping from Kane Springs Valley is extremely remote from the Muddy River Springs Area, and based on the available data during the State Engineer Order 1169 Aquifer Test, there were no effects that resulted in a change in water level in southern Kane Springs Valley.”

As previously stated, Ruling 5712 was issued on February 2, 2007 approximately seven years prior to the conclusion of the Order 1169 aquifer test which resulted in the significant impacts to the LWRFS. While there was no pumpage from KMW-1 during the Order 1169 aquifer test pumping simulations provided by Lincoln/Vidler at the April 2006 KSV hearing and referenced in Ruling 5712 show a cone of depression extending well into Coyote Spring Valley.

In the SNWA Assessment Report (2019), SNWA found that there was a high correlation between well EH-4 and spring discharge; based on this high correlation between EH-4 and spring discharge SNWA determined that it stood to reason that the observed carbonate well responses could be correlated to that of EH-4 to assess if their responses are caused by the same stresses affecting the spring

²¹ Page 23 and 24 of Ruling 6254 dated January 29, 2014

²² Page 15 of Ruling 5712 dated February 2, 2007

²³ Lincoln Vidler Interim Order 1303 Transmittal Letter dated July 3, 2019

discharge. SNWA also stated that high correlations would also further confirm the hydraulic connectivity of the LWRFS.²⁴ SNWA then used the average monthly values of hydraulic head from water-level elevation records of the representative carbonate wells, including CSVN-4. These values for CSVN-4 were then plotted against EH-4 for the period of 2003 to 2019.²⁵ See Figure 6.

²⁴ Page 5-11 of SNWA report "Assessment of Lower White River Flow System Water Resource Conditions and Aquifer Response" dated June 2019.

²⁵ Page 5-12 of SNWA report "Assessment of Lower White River Flow System Water Resource Conditions and Aquifer Response" dated June 2019.

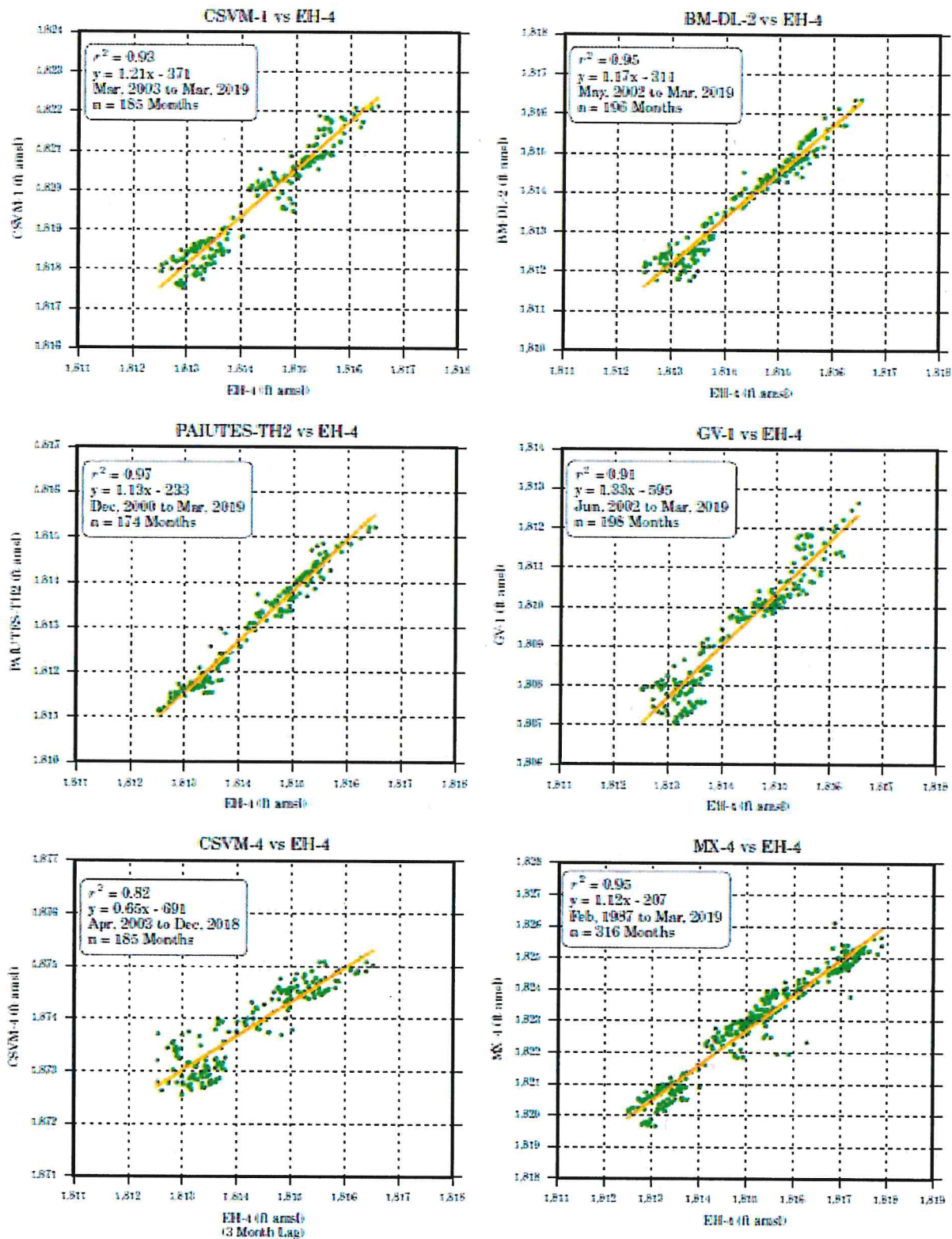


Figure 6. Correlation of Hydraulic Heads at Well EH-4 with Hydraulically Connected Carbonate Wells (SNWA, 2019).

There was a high correlation between all the carbonate wells plotted against EH-4 with the correlation of CSVW-4 and EH-4 resulting in a R_2 value of 0.82. These high correlations between carbonate wells in the LWRFS indicate a high level of hydraulic connectivity across all the basins within the LWRFS.

While SNWA did not calculate a correlation between EH-4 and KMW-1, SNWA did provide a figure identified as Figure 7 (below), which illustrates hydrographs for both CSVW-4 and KMW-1 at the same scale for both date and elevation axis's for easy comparison.²⁶

²⁶ Page 5-14 of SNWA report "Assessment of Lower White River Flow System Water Resource Conditions and Aquifer Response" dated June 2019.

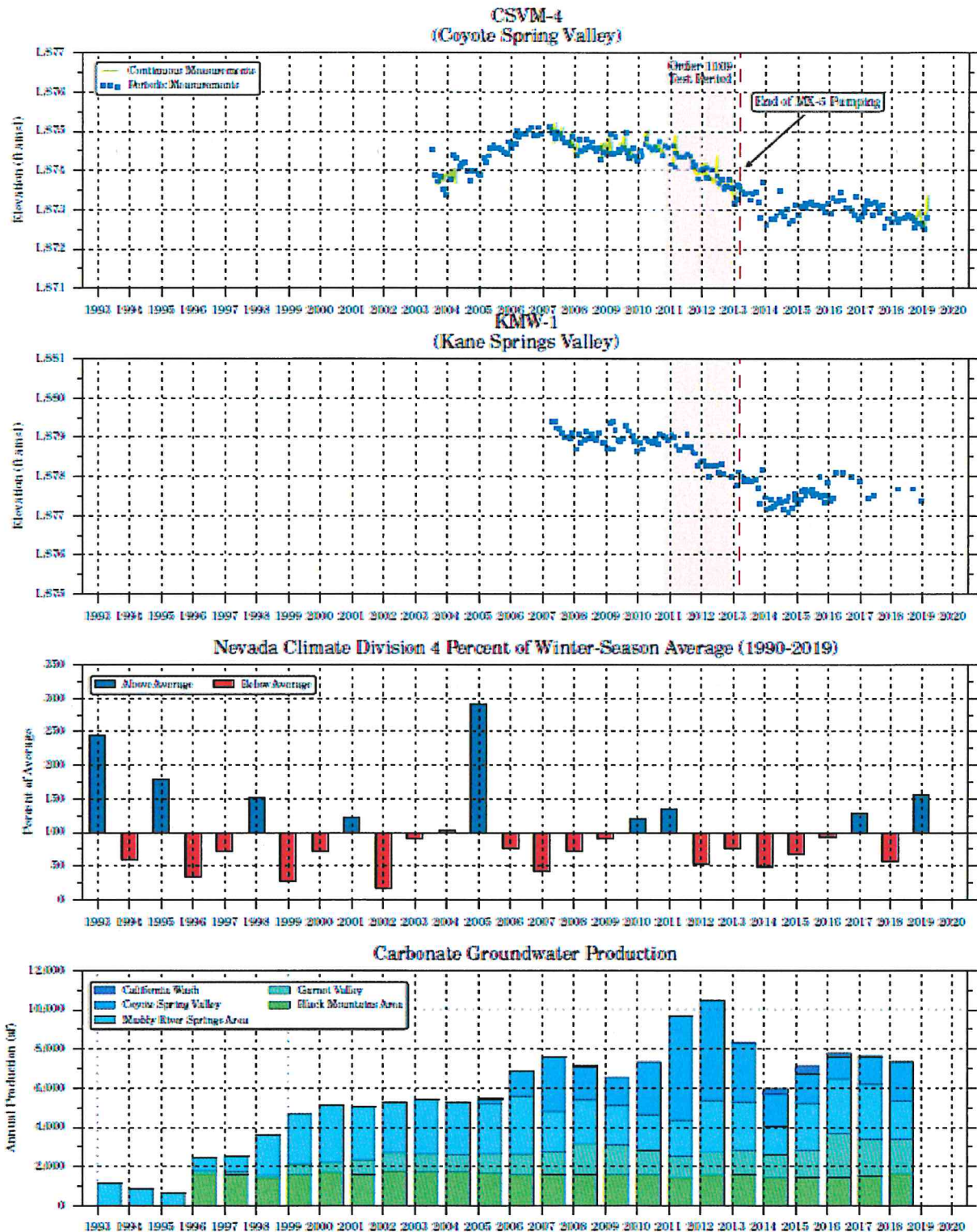


Figure 7. Carbonate-Aquifer water levels and groundwater production (SNWA, 2019).

It should be noted that an attempt to produce a graph illustrating the correlation between EH-4 and KMW-1 and the correlation between CSVM-4 and KMW-1 was made, however the data for KMW-1 could not be located as part of the 1169 data and Lincoln/Vidler does not include a table with this data in their report. Additionally, there seems to be a discrepancy in the elevation datum used for KSM-1 between SNWA and Lincoln/Vidler in that the data reported by Lincoln/Vidler is shifted approximately 0.5 feet higher than that of SNWA. This apparent difference in the elevation datum used does not affect a correlation comparison or a visual hydrograph comparison but would have an impact on any flow analysis based on elevation gradients.

A direct visual comparison of the hydrographs of CSVM-4 and KMW-1 was done for the time frame that data is available for KSM-1, (pre, during and post Order 1169 aquifer test time frame) which indicates the hydrographs for CSVM-4 and KMW-1 are virtually identical for the pre Order 1169 aquifer test, the $\approx$ two year span of the Order 1169 aquifer test and post Order 1169 aquifer test recovery. This indicates a high correlation between CSVM-4 and KMW-1, with an estimated R_2 value > 0.9 , which in turn indicates a high correlation between KMW-1 and carbonate wells in the LWRFS with a high level of hydraulic connectivity across all of the basins within the LWRFS. Additionally, well KMW-1 lies within 1,000 feet of Coyote Spring Valley and Lincoln/Vidler's own well pumping simulations show a cone of depression extending well into Coyote Spring Valley.

The Order 1169 aquifer test data does not indicate that there were no effects that resulted in a change in water level in southern Kane Springs Valley. The contrary is true in that there is a high correlation between KMW-1 and carbonate wells in the LWRFS with a high level of hydraulic connectivity across all of the basins within the LWRFS, including KSV.

The SNWA Assessment Report is neutral with regards to the inclusion of Kane Springs Valley (KSV). However, the SNWA assessment report does make various references that are supportive to the inclusion of KSV within the LWRFS. The SNWA Assessment Report, states that KSV is included in the assessments because it is tributary to the LWRFS and contributes to the local recharge.²⁷

Based on a review of all of the data, most hydrographs exhibit very similar patterns. The only apparent exception is within Coyote Spring Valley for wells CSVM-3, CSVM-4, and CSVM-5, and within Kane Springs Valley for well KMW-1. Wells CSVM-4 and KMW-1 are completed within the Kane Springs fault zone, however the responses of wells CSVM-4 and KMW-1 are similar to those of other wells in the basin, but appear to be slightly attenuated by the Kane Springs fault.²⁸

As reported in the SNWA Assessment Report, SNWA found that the relationships between the hydraulic head of carbonate wells in the LWRFS are linear and have very high correlations that range from $R^2=0.82$ to $R^2=0.97$. As these charts illustrate, groundwater levels respond in the same manner to natural and anthropogenic stresses throughout the LWRFS. The responses are indicative of a high degree of hydraulic connection within the aquifer and across all of the basins.²⁹

²⁷ Page 1-1, SNWA report "Assessment of Lower White River Flow System Water Resource Conditions and Aquifer Response" dated June 2019

²⁸ Page 5-6, SNWA report "Assessment of Lower White River Flow System Water Resource Conditions and Aquifer Response" dated June 2019

²⁹ Page 5-11-5-12, SNWA report "Assessment of Lower White River Flow System Water Resource Conditions and Aquifer Response" dated June 2019

These points can be summarized as follows:

- Kane Springs Valley is included in the assessments because it is tributary to the LWRFS and contributes to the local recharge.³⁰
- The responses of wells CSVM-4 and KMW-1 are similar to those of other wells in the basin, but appear to be slightly attenuated by the Kane Springs fault.³¹
- The relationships between the hydraulic head of the carbonate wells in the LWRFS are linear and have very high correlations. The correlation R_2 value for CSVM-4 = 0.82. The groundwater levels respond in the same manner to natural and anthropogenic stresses throughout the LWRFS. The responses are indicative of a high degree of hydraulic connection within the aquifer and across all of the basins.³²

In the event that Lincoln/Vidler develops water from KMW-1 or other wells within KSV and the NSE continues to exclude KSV from the LWRFS, the existing rights owned and controlled by NCA and other (more) senior water right users within the LWRFS could be impaired. The Lincoln/Vidler ground water rights are junior in priority to approximately 98% of the ground water rights within the LWRFS and during any curtailment of pumpage within the LWRFS, these rights would be among the first to be subject to curtailment. If KSV is excluded from the LWRFS, any pumpage from KMW-1 or other wells operated by Lincoln/Vidler within KSV would not be included in the pumpage from the LWRFS; however, the impacts from said pumpage would, most likely impact flow to the MRSA and Muddy River. In the event there are significant impacts to flows of the MRSA and Muddy River, water rights senior to the Lincoln/Vidler water rights in KSV would be curtailed while the most junior rights within the LWRFS would be allowed to continue pumpage.

It is clear that there is a high correlation between KMW-1 and impacts from pumpage within the LWRFS, present day pumpage within the LWRFS continues to impact KMW-1. Therefore, it stands to reason that Kane Springs Valley should be added to the LWRFS to protect existing senior rights.

5. Proposal to exclude the northern portion of Coyote Springs Valley.

NCA believes that the hydrologic data from the Order 1169 aquifer test clearly indicates that carbonate pumpage from the northern portion of CSV and KSW-1 within KSV will impact carbonate aquifer hydraulic head within the LWRFS, which in turn will increase impacts to springs flows within the MRSA and be detrimental to the existing groundwater rights held by NCA. It is evident that there is a high correlation between CSVM-4 and KMW-1 which in turn indicates a high correlation between CSVM-4 and KMW-1 and carbonate wells in the LWRFS with a high level of hydraulic connectivity across all the basins within the LWRFS. Therefore, there is no basis to exclude the northern portion of CSV.

Lincoln/Vidler recommend that in addition to KSV remaining excluded from the LWRFS administrative unit, the northern portion of CSV should also be excluded from the LWRFS administrative unit based upon the geophysical data and groundwater level data, geochemistry data, and groundwater temperature data.

³⁰ Page 1-1, SNWA report "Assessment of Lower White River Flow System Water Resource Conditions and Aquifer Response" dated June 2019

³¹ Page 5-6, SNWA report "Assessment of Lower White River Flow System Water Resource Conditions and Aquifer Response" dated June 2019

³² Page 5-11-5-12, SNWA report "Assessment of Lower White River Flow System Water Resource Conditions and Aquifer Response" dated June 2019

As stated by SNWA (2019), most hydrographs within the LWRFA exhibit very similar patterns. The only apparent exception is within CSV for wells CSV-3, CSV-4, and CSV-5, and within Kane Springs Valley for well KMW-1. Wells CSV-4 and KMW-1 are completed within the Kane Springs fault zone, however the responses of wells CSV-4 and KMW-1 are similar to those of other wells in the basin but appear to be slightly attenuated by the Kane Springs fault.³³

As reported in the SNWA Assessment Report, SNWA found that the relationships between the hydraulic head of carbonate wells in the LWRFS are linear and have very high correlations. Specifically, the correlation of CSV-4 and EH-4 resulted in a R_2 value of 0.82. As these charts illustrate, groundwater levels respond in the same manner to natural and anthropogenic stresses throughout the LWRFS. The responses are indicative of a high degree of hydraulic connection within the aquifer and across all of the basins within the LWRFS.³⁴

While SNWA did not calculate a correlation between EH-4 and KMW-1, SNWA did provide a figure identified as Figure 5-11 which illustrates hydrographs for both CSV-4 and KMW-1 at the same scale for both date and elevation axis's for easy comparison.³⁵

A direct visual comparison of the hydrographs of CSV-4 and KMW-1 was done for the time frame data is available for KSM-1, (pre, during and post Order 1169 aquifer test), which indicates the hydrographs for CSV-4 and KMW-1 are virtually identical for the pre Order 1169 aquifer test, the $\approx$ two year span of the Order 1169 aquifer test and post Order 1169 aquifer test recovery. This indicates a high correlation between CSV-4 and KMW-1, with an estimated R_2 value > 0.9 , which in turn indicates a high correlation between KMW-1 and carbonate wells in the LWRFS with a high level of hydraulic connectivity across all of the basins within the LWRFS.

These points can be summarized as follows:

- The responses of wells CSV-4 and KMW-1 are similar to those of other wells in the basin, but appear to be slightly attenuated by the Kane Springs fault.³⁶
- The relationships between the hydraulic head of the carbonate wells in the LWRFS are linear and have very high correlations. The correlation R_2 value for CSV-4 = 0.82. The groundwater levels respond in the same manner to natural and anthropogenic stresses throughout the LWRFS. The responses are indicative of a high degree of hydraulic connection within the aquifer and across all the basins.³⁷

NCA believes the hydrologic data from the Order 1169 aquifer test clearly indicates that carbonate pumpage from the northern portion of CSV and KSW-1 within KSV will impact carbonate aquifer hydraulic head within the LWRFS, which in turn will increase impacts to springs flows within the MRSA and be detrimental to the existing groundwater rights held by NCA.

³³ Page 5-6, SNWA report "Assessment of Lower White River Flow System Water Resource Conditions and Aquifer Response" dated June 2019

³⁴ Page 5-11-5-12, SNWA report "Assessment of Lower White River Flow System Water Resource Conditions and Aquifer Response" dated June 2019

³⁵ Page 5-14 of SNWA report "Assessment of Lower White River Flow System Water Resource Conditions and Aquifer Response" dated June 2019

³⁶ Page 5-6, SNWA report "Assessment of Lower White River Flow System Water Resource Conditions and Aquifer Response" dated June 2019

³⁷ Page 5-11-5-12, SNWA report "Assessment of Lower White River Flow System Water Resource Conditions and Aquifer Response" dated June 2019

6. Proposal by the GBWN to include the entire White River Flow System.

The Great Basin Water Network, participating in the Order 1303 process as an NGO, appears to have proposed that the State Engineer consider the entire White River Flow System when administering water resources within the LWRFS as currently proposed. This recommendation was made with no scientific basis. The Pahrnagat Shear zone (north Coyote Spring Valley) creates a substantial barrier that warrants the exclusion of the hydrographic basins north of the basin. Furthermore, the LWRFS includes the Muddy River Springs, which are the regional terminus of the White River Flow System. Hydrologic data submitted by the overwhelming majority of stakeholders with valid water rights and vested interests in the LWRFS clearly suggests that if groundwater development is managed at sustainable levels within the LWRFS, Moapa Dace habitat will be protected as will spring flows that support decreed rights on the Muddy River. If these obligations are met within MRSA there is no evidence suggesting impacts would propagate north of and beyond the LWRFS boundary as currently proposed by the State Engineer.

7. Recommended LWRFS annual pumping.

NCA supports the NSE current sustainable target of 9,318 acre-feet annually. NCA recognizes that other users within the LWRFS have recommended various changes both higher and lower to the limits established by the NSE. While NCA agrees with recommendations made by SNWA (2019)³⁸ regarding regulatory oversight to prevent and mitigate impacts to senior water-right holders. NCA believes there is currently insufficient data to warrant a reduction or increase from the target level currently suggested by the NSE. As such, NCA supports recommendations for management plans based on the conjunctive use of surface, alluvial and carbonate water sources within an adaptive management framework.

8. Consideration regarding the movement of water rights between alluvial and carbonate wells.

NCA agrees that there is a high correlation between carbonate wells in the LWRFS which indicates a high level of hydraulic connectivity across all the basins within the LWRFS, because, as the data indicate, the MRSA is hydraulically connected to the other hydrographic basins within the LWRFS. As such, NCA does not support the transfer of alluvium ground water rights within the MRSA to the carbonate system within the LWRFS as the supply source for new or future uses. The transfer of alluvial ground water rights within the MRSA to the carbonate system within the LWRFS will not mitigate impacts to the MRSA, but in fact will intensify the impacts caused by carbonate pumpage based on impacts to the springs that feed the Muddy River.

The City of North Las Vegas (CNLV) and the Moapa Band of Paiutes (MBOP) July 2019 reports both provide information supporting transfers of alluvial groundwater rights from the MRSA to the carbonate rock as a benefit to the carbonate system.

The CNLV (Interflow, 2019³⁹) defines its position supporting the transfer alluvium groundwater rights from the MRSA to the carbonate rock as follows:

- Transferring senior groundwater rights from the Muddy River Springs Area to the APEX portion of Garnet Valley appears to have merit in two regards: 1.) removing senior pumping from within the Muddy River Springs Area that appears to have historically impacted flows of the Muddy

³⁸ SNWA, 2019. "Assessment of Lower White River Flow System Water Resource Conditions and Aquifer Response" dated June 2019.

³⁹ Interflow Hydrology, Inc., 2019. Garnet Valley Groundwater Review for APEX Industrial Complex, City of North Las Vegas, Clark County, Nevada.

River, and 2.) securing more senior water rights for the APEX municipal system, in the event that groundwater rights become regulated by priority date in the LWRFS.

- The Church's wells tap the shallow alluvium (~200 ft thick) overlying the carbonate rock along the Muddy River Springs corridor. Pumping from the alluvium has been interpreted by SNWA (2013) to create a nearly 1:1 capture of Muddy River flow, as measured at the down-stream Moapa Gage.
- In recognition of the effects of pumping from established points of diversion for the Church's water rights in the alluvium along the Muddy River Springs corridor, ceasing to pump these water rights at the existing points of diversion will mitigate potential impacts to existing decreed water rights on the Muddy River, and perhaps provide an advantage to sustaining spring flows on the valley floor. This could in turn benefit the Moapa Dace habitat.

The Interflow (2019) states *"...it appears that pumping at 1500 AF/yr and possibly up to 2000 AF/yr in the APEX area has not caused detrimental water level declines...In summary, transferring of senior water rights to the APEX facilities should not be viewed as enabling greater pumping from the basin, but rather, as adding some degree of assurance to the ability to maintain pumping in APEX should future actions require management of groundwater rights by priority date, under current Nevada water law."*

NCA believes, as does Interflow/CNLV, that transfers of senior alluvial water rights should be used as a management tool to offset existing pumping from carbonate wells relying on junior water rights.

Mifflin & Associates (MAI)⁴⁰ / MBOP claims that *"...current production levels have demonstrated no impacts on MRSA flows."* The MBOP approach to the transferring alluvium groundwater rights from the MRSA to the carbonate aquifer is as follows:

- Moving the MRSA alluvial water rights to carbonate-aquifer production will produce similar (proportional to pumping) levels of impacts on the MRSA flows as already documented for the carbonate-aquifer production in Coyote Spring Valley and Arrow Canyon Wells. A move of the alluvial rights to carbonate-aquifer production in down-gradient basins (California Wash and basins to the south) where current production levels have demonstrated no impacts on MRSA flows, is the likely strategy to maximize the extent of development without unacceptable impacts on MRSA flows.

The MBOP report appears to be taking an area limited approach to the transfer of alluvium groundwater rights from the MRSA to the carbonate, in that, these transfers can be made to the location of the entities facilities as a way to get senior ground water rights, as there is limited to no impact of carbonate pumpage at each entities location on water level declines or reduction in spring flow within the MRSA.

Within the SNWA Assessment Report, SNWA makes a number of observations and conclusions with regard to ground water pumpage from the alluvium aquifer within the MRSA⁴¹. The most significant of these observations and conclusions from NCA's perspective are listed below. In some cases, the

⁴⁰ Johnson, C. and M. Mifflin, Mifflin & Associates (MAI), 2019. Water-Level Decline in the LWRFS: Managing for Sustainable Groundwater Development. Initial Report of Moapa Band of Paiutes in Response to Order #1303.

⁴¹ Pages 8-3-8-5 SNWA report "Assessment of Lower White River Flow System Water Resource Conditions and Aquifer Response" dated June 2019.

observation or comments have been abbreviated and where appurtenant, comments relative to NCA's position are provided:

- Groundwater production from the MRSA alluvial reservoir depletes Muddy River streamflow on a 1:1 basis.
- Groundwater production from MRSA carbonate wells deplete Muddy River streamflow approaching a 1:1 basis. Groundwater production from other carbonate wells in the LWRFS deplete streamflow; however, their effect cannot be readily detected from the measurements.
- A significant increase in carbonate groundwater production, such as that which occurred during the NSE Order 1169 aquifer test, will cause sharp declines in carbonate-aquifer water levels and spring discharges.
- The results of the Order 1169 aquifer test demonstrate that for the areas directly upgradient of the MRSA (i.e., Arrow Canyon and Coyote Spring Valley), impacts propagate to the high-elevation springs within a matter of weeks or months. In the long-term, the location of the production wells does not matter as groundwater withdrawn anywhere within the connected carbonate aquifer or the MRSA alluvial reservoir will impact the MRSA discharge and, consequently, deplete Muddy River streamflow.
- The data indicates that pumping simply cannot occur without conflicting with senior rights. While it is unreasonable to assume that all pumping in the LWRFS would be eliminated, it should not be permitted to continue without strict regulatory oversight and appropriate mitigation to effected senior water-right holders and adequate protections for the Moapa dace.
- Production wells completed in the alluvial reservoir adjacent to the Muddy River capture groundwater that would otherwise discharge to the river. In addition, MRSA production wells completed in the carbonate aquifer capture water that would otherwise replenish the alluvial reservoir through diffuse subsurface flow or discharge from discrete springs. Capturing this groundwater depletes the source of supply to the alluvial reservoir and springs, thereby, depleting the streamflow. In each case, this groundwater production conflicts with senior Muddy River water rights.
- Changing points of diversion to move groundwater production from the MRSA alluvial reservoir to locations sourced by the carbonate aquifer will not mitigate these conflicts, only delay their inevitable occurrence. Such changes would exacerbate issues associated with the already over-appropriated carbonate aquifer by accelerating the timing of impacts to the high-elevation springs due to the additional groundwater production. The timing of impacts will vary based on the magnitude, duration, and location of groundwater production. The impacts may occur relatively quickly, within weeks or months, if additional groundwater production were to occur in areas directly upgradient from the MRSA. Groundwater production in areas farther away, may take longer, but the properties of the aquifer are such that these impacts will eventually result in reduced spring discharge and depletions of Muddy River streamflow.

In the SNWA Assessment Report, SNWA found that there was a high correlation between well EH-4 and spring discharge, based on this high correlation between EH-4 and spring discharge SNWA determined that it stood to reason that the observed carbonate well responses could be correlated to that of EH-4 to assess if their responses are caused by the same stresses affecting the spring discharge. SNWA also stated that high correlations would also further confirm the hydraulic connectivity of the LWRFS.⁴² SNWA then used the average monthly values of hydraulic head from water-level elevation records of the representative carbonate wells the average monthly hydraulic head of a number of wells, including

⁴² Pages 5-6-5-12 of SNWA report "Assessment of Lower White River Flow System Water Resource Conditions and Aquifer Response" dated June 2019.

Paiutes-TH2 located in California Wash and GV-1 located in Garnet Valley. These values for Paiutes-TH2 and GV-1 were then plotted against EH-4 for the period of 2000 to 2019 and 2002 to 2019.⁴³ See Figure 6.

There was a high correlation between all the carbonate wells plotted against EH-4 with the correlation of Paiutes-TH2 and EH-4 resulting in a R_2 value of 0.97 and GV-1 and EH-4 resulting in a R_2 value of 0.91. These high correlations between carbonate wells in the LWRFS indicate a high level of hydraulic connectivity across all of the basins within the LWRFS.

The high correlations between carbonate wells in the LWRFS indicate a high level of hydraulic connectivity across all of the basins within the LWRFS. While the timing of impacts from carbonate pumpage located outside the MRSA such as Garnet Valley and California Wash may take a little longer, the properties of the carbonate aquifer are such that these impacts as seen during the Order 1169 aquifer test will impact the MRSA, because, as the data indicates, the MRSA is hydraulically connected to the other hydrographic basins within the LWRFS. The results of the Order 1169 aquifer test indicate that the impacts from carbonate pumpage within the LWRFS are the sum of all the parts, no matter size or location.

During the Order 1169 aquifer test there were significant impacts to high altitude springs in the MRSA caused by a lowering of the hydraulic head in the carbonate aquifer as a result of carbonate pumpage. Additionally, there were limited impacts to the flows of the Muddy River resulting from carbonate pumpage and a 1:1 impact to flows of the Muddy River from alluvial pumpage. Over time it is expected that carbonate pumpage within the LWRFS will capture flow to alluvial reservoir which in turn will ultimately capture spring discharge within the MRSA and Muddy River stream flow.

As demonstrated by SNWA there is a 1:1 impact to flows of the Muddy River from alluvial pumpage. Therefore, the transfer of alluvium water rights located within the MRSA to the carbonate system within the LWRFS as the supply source for new or future uses will not mitigate impacts to the MRSA, but in fact increases the impacts caused by carbonate pumpage. The reason for this is straight forward. Once pumpage from the alluvium for quantity X ceases the flow of the Muddy River increases by quantity X and conversely, once pumpage from the alluvium for quantity X begins, Muddy River flow decreases by quantity X, therefore the alluvium pumpage has neither a positive or negative impact on springs within the MRSA. While pumpage from the alluvium aquifer within the MRSA impacts senior Muddy River water rights these impacts can be mitigated by simply leasing or purchasing Muddy River shares to account for the impacts resulting in a form of conjunctive management to benefit both parties and the resource. The same cannot be said for the transfer of alluvium water rights located within the MRSA to the carbonate system within the LWRFS as supply source for new or future uses. When this transfer is made, the opportunity for conjunctive management of quantity X from the alluvium aquifer within the MRSA and the Muddy River no longer exists. Additionally, the pumpage of quantity X of alluvium water rights from the LWRFS carbonate system will result in a proportional lowering of the carbonate aquifer hydraulic head, equivalent to quantity X, as there is a high degree of hydraulic connection within the carbonate aquifer and across all of the basins resulting in additional impacts to the MRSA. The loss of the opportunity to conjunctively manage quantity X and the proportional lowering of the carbonate aquifer hydraulic head, equivalent to quantity X results in a impact twice that of quantity X to the resource.

⁴³ Page 5-12 of SNWA report "Assessment of Lower White River Flow System Water Resource Conditions and Aquifer Response" dated June 2019

NCA agrees with the observation that production wells completed in the alluvial reservoir adjacent to the Muddy River capture groundwater that would otherwise discharge to the Muddy River. Additionally, NCA believes that moving groundwater production from the MRSA alluvial reservoir to locations sourced by the carbonate aquifer for new or future uses will not mitigate conflicts to the MRSA, only delay their inevitable occurrence. Such changes would exacerbate issues associated with the already over-appropriated carbonate aquifer by accelerating the timing of impacts to the high-elevation springs due to the additional groundwater production.

Conclusions and Recommendations

1. Standing of Non-Governmental Organizations Without Water Rights

NCA objects to the inclusion and participation of NGOs at this point of the administrative process based on the obvious lack of legal standing. Considering the limited hearing time allowed for this process, providing any significant time to these participants beyond mere public comment is a significant departure from prior State Engineer process and procedure.

2. Proposal by the NPS to include all of the Black Mountains Area Basin in the LWRFS

NCA supports the LWRFS boundary with inclusion of only the northwestern portion of the Black Mountain Area Hydrographic Basin as currently described in Order 1303; no changes are recommended. There is substantial geological, hydrologic and geochemical evidence to justify the inclusion of only the northwestern portion as currently described.

3. Proposal by the USFWS to include the Lower Meadow Valley Wash Basin in the LWRFS

Order 1303 does not include the Lower Meadow Valley Wash (LMVW) Hydrologic Basin as part of the LWRFS. As discussed within this rebuttal report observed water level trends within alluvial, Muddy Creek and nearby carbonate monitoring wells reflect a clear disconnect with observed trends in the LWRFS regional carbonate levels. Furthermore, the likelihood of development of carbonate water sources within the basin are slim based on the extreme depth of carbonate geology and mapped structural features that separate the basin from the LWRFS.

4. Proposal to include the Kane Springs Basin in the LWRFS

Currently Order 1303 does not include Kane Springs Valley (KSV). However, there is significant correlation between KMW-1 and impacts from pumpage within the LWRFS with effects from present day pumpage within the LWRFS observed in well KMW-1. Therefore, it stands to reason that KSV be added to the LWRFS to protect existing senior rights.

5. Proposal to exclude the northern portion of Coyote Springs Valley.

NCA believes that the hydrologic data from the Order 1169 aquifer test clearly indicates that carbonate pumpage from the northern portion of CSV and KSW-1 within KSV will impact carbonate aquifer hydraulic head within the LWRFS, which in turn will increase impacts to springs flows within the MRSA and be detrimental to the existing groundwater rights held by NCA. It is evident that there is a high correlation between CSVM-4 and KMW-1 which in turn indicates a high correlation between CSVM-4 and KMW-1 and carbonate wells in the LWRFS with a high level of hydraulic connectivity across all the basins within the LWRFS. Therefore, there is no basis to exclude the northern portion of CSV.

6. Proposal by the GBWN to Include the entire White River Flow System

NCA does not support the inclusion of the entire White River Flow System (WRFS) as joint management unit. The Pahrangat Shear zone (north Coyote Spring Valley) creates a substantial barrier that warrants the exclusion of the hydrographic basins north of the basin. The LWRFS includes the Muddy River Springs, which are the regional terminus of the regional WRFS. Hydrologic data submitted by the overwhelming majority of stakeholders with valid water rights and vested interests in the LWRFS suggests that if groundwater development is managed at sustainable levels within the LWRFS, Moapa Dace habitat will be protected as will spring flows that support decreed rights on the Muddy River. If these obligations are met within the MRSA there is no evidence that suggests impacts would propagate north of and beyond the LWRFS boundary as currently proposed by the State Engineer.

7. Recommended LWRFS annual pumping

NCA supports the State Engineer's current system yield target of 9,318 acre-feet annually for the LWRFS. NCA recognizes that other users within the LWRFS have suggested a lower perennial yield target and while NCA did not touch on the sustainable yield in this rebuttal report, the company believes there is insufficient data at this time to warrant a reduction or increase from the current target level. As such, NCA supports recommendations for management plans based on the conjunctive use of surface, alluvial and carbonate water sources within an adaptive management framework.

8. Considerations regarding the movement of water rights between alluvial and carbonate wells

NCA agrees that there is a high correlation between carbonate wells in the LWRFS which indicates a high level of hydraulic connectivity across all the basins within the LWRFS, because, as the data indicate, the MRSA is hydraulically connected to the other hydrographic basins within the LWRFS. As such, NCA does not support the transfer of alluvium ground water rights within the MRSA to the carbonate system within the LWRFS as the supply source for new or future uses. The transfer of alluvial ground water rights within the MRSA to the carbonate system within the LWRFS will not mitigate impacts to the MRSA, but in fact intensify the impacts caused by carbonate pumpage based on impacts to the springs that feed the Muddy River.