IN THE SUPREME COURT OF THE STATE OF NEVADA

ADAM SULLIVAN, P.E., NEVADA STATE ENGINEER, DIVISION OF WATER RESOURCES, DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES,

Appellant,

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. /

SOUTHERN NEVADA WATER AUTHORITY,

Appellant,

vs.

SUPREME COURT NO. 84739
District Court Case No. A816761
(Consolidated with Supreme Court Cases 84741, 84742 and 84809)

SUPREME COURT NO. 84741
(Consolidated with Supreme Court Cases 84739, 84742 and 84809)

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. /	
CENTER FOR BIOLOGICAL DIVERSITY, Appellant, vs.	**SUPREME COURT NO. 84742** (Consolidated with Supreme Court Cases 84739, 84741 and 84809)
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. / MUDDY VALLEY IRRIGATION COMPANY, Appellant, 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. 84809** (Consolidated with Supreme Court Cases 84739, 84741 and 84742)

Appeal from the Eighth Judicial District Court, Clark County
District Court Case No. A-20-816761- C
(Consolidated with Case Nos. A-20-817765-P, A-20-818015-P, A-20-817977-P, A-20-818069-P, A-20-817840-P, A-20-817876-P, A-21-833572-J)

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NRAP 26.1 DISCLOSURE STATEMENT

The undersigned counsel of record certifies that the following are persons and entities described in NRAP 26.1(a), and must be disclosed. These representations are made in order that the justices of the Court may evaluate possibly disqualifications or recusal.

Respondent Coyote Springs Investment, LLC ("CSI") is a Nevada limited liability company. Wingfield Nevada Group Holding Company, LLC is a parent company of CSI, and no publicly traded company owns 10% or more of its stock.

CSI is presently represented by Kent Robison and Hannah Winston of Robison, Sharp, Sullivan & Brust; Bradley Herrema of Brownstein Hyatt Farber Schreck, LLP; William Coulthard of Coulthard Law; and Emilia Cargill.

In the course of the proceedings leading up to this appeal, CSI was also represented by Therese Shanks.

Dated this 9th day of January, 2023.

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NRAP 26.1 DISCLOSURE STATEMENT

The undersigned counsel of record certifies that the following are persons and entities described in NRAP 26.1(a), and must be disclosed. These representations are made in order that the justices of the Court may evaluate possibly disqualifications or recusal.

Respondent, Lincoln County Water District ("Lincoln"), is a political subdivision of the State of Nevada, created for the purpose of providing adequate and efficient water service within Lincoln County, Nevada. Respondent, Vidler Water Company, Inc. ("Vidler"), is a Nevada corporation authorized to conduct business in the state of Nevada.

Respondent Vidler's parent company is D.R. Horton, Inc., a Delaware corporation and a publicly held company that owns 10% or more of Vidler's stock.

Respondent Lincoln is presently represented by the Lincoln County District Attorney and Great Basin Law. Vidler is represented by Allison MacKenzie, Ltd.

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Snell & Wilmer, L.L.P. has been substituted out of this case and no longer represents Lincoln.

Dated this 9th day of January, 2023.

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NRAP 26.1 DISCLOSURE STATEMENT

Pursuant to NRAP 26.1, the undersigned counsel of record certifies that the following are persons and entities as described in NRAP 26.1(a) and must be disclosed. These representations are made in order that the justices of the Supreme Court and the judges of the Court of Appeals may evaluate possible disqualification or recusal.

Respondent Georgia-Pacific Gypsum LLC ("Georgia-Pacific") is a wholly-owned subsidiary of Koch Industries, Inc.

Respondent Republic Environmental Technologies, Inc. ("Republic") is a wholly-owned subsidiary of Republic Services, Inc.

The following law firm has lawyers who appeared for Georgia-Pacific and Republic in the case or are expected to appear on their behalf in this Court: McDonald Carano LLP.

Dated this 9th day of January, 2023.

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/s/ Lucas Foletta
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JANE SUSSKIND #15099
Attorneys for Respondent Georgia-Pacific Gypsum LLC and Republic Environmental Technologies, Inc.

NRAP 26.1 DISCLOSURE STATEMENT

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

Respondents Nevada Cogeneration Associates Nos. 1 and 2 ("NCA") are businesses located in Clark County, Nevada. NCA may be considered affiliates, or subsidiaries, of Northern Star Generation, LLC and Panamint Capital, LLC.

Dyer Lawrence, LLP, by and through Francis C. Flaherty and Sue S. Matuska, is the law firm that represents NCA before this Court.

NCA was previously represented before the State Engineer and in the district court by Alex J. Flangas, Esq. and the law firm of Kaempfer Crowell.

Dated this 9th day of January, 2023.

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Attorneys for Nevada Cogeneration Associates Nos. 1 and 2

NRAP 26.1 DISCLOSURE STATEMENT

The undersigned counsel of record certifies that the following are persons and entities described in NRAP 26.1(a), and must be disclosed. These representations are made in order that the justices of the Court may evaluate possibly disqualifications or recusal.

Respondent Apex Holding Company, LLC ("Apex") is a Nevada limited liability company. Apex is a privately owned company and no publicly traded company owns 10% or more of its stock. Respondent Dry Lake Water, LLC ("Dry Lake") is a Nevada limited liability company. Dry Lake is a privately owned company and no publicly traded company owns 10% or more of its stock.

Apex and Dry Lake are presently represented by Christian T. Balducci of Marquis Aurbach.

Dated this 9th day of January, 2023.

MARQUIS AURBACH
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/s/ Christian T. Balducci
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Attorneys for Apex Holding Company, LLC and Dry Lake Water, LLC

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INTRODUCTION

With Order 1309, the State Engineer, for the first time in history, combined seven separate hydrographic basins into one. The State Engineer did so without statutory authority and without regard to the due process rights of participants in the Order 1309 proceedings. Indeed, Order 1309 contravenes Nevada's long-established statutory water law scheme, which requires the State Engineer to manage Nevada's hydrographic basins on an individual basis—a requirement the State Engineer concedes he has historically followed. 49 JA 23299, 23304.

The District Court recognized as much, and this Court properly identified the legal issues associated with his action as the appropriate basis for this appeal. Notwithstanding this Court's clear direction to identify specific statutory support for the State Engineer's consolidation of the seven basins, Appellants[1] failed to cite a single statute or group of statutes that explicitly or implicitly authorized that consolidation. Instead, Appellants, implicitly acknowledging the absence of any

[1] The Respondents collectively refer to Southern Nevada Water Authority ("SNWA"), Center for Biological Diversity ("CBD"), and Muddy Valley Irrigation Company ("MVIC") as the Appellants given that each filed a notice of appeal and joint opening brief. However, the Respondents refer to the State Engineer individually throughout the brief given his direct role in issuing Order 1309 and depriving the Respondents due process in doing so. Moreover, the Respondents note that the State Engineer has admitted to violating SNWA's and MVIC's due process rights in issuing Order 1309 and has conceded that this Court should affirm the District Court in that regard. Appellant's Opening Brief ("AOB"), 3 n.6. Thus, neither SNWA nor MVIC are properly considered appellants in this matter.

such authority, posit that no such authority is necessary because Order 1309 constitutes nothing more than a set of "factual findings" regarding the delineation of the purported "LWRFS aquifer". In doing so, Appellants disingenuously attempt to avoid the questions posed by this Court and gain access to a more favorable standard of review.

As the District Court properly concluded, Appellants' contention that Order 1309 constitutes mere factual findings is meritless; Order 1309 indisputably constitutes a management directive with immediate and ongoing effect. Among other things, it reordered the priority of water rights in the seven basins and subjected them to a generally applicable pump limit, all on the basis of previously undisclosed criteria. Thus, the State Engineer relegated senior groundwater right holders in one basin to a more junior position to water right holders in formerly separate basins, in contravention not only of Nevada law's requirement that basins be administered independently, but the prior appropriation doctrine and due process as well.

Appellants' newly created "aquifer by aquifer" groundwater management requirement and their conflation of the terms "aquifer" and "basin" cannot save their arguments. Nor can their misplaced defense of "conjunctive management" and "joint administration" as used in Order 1309. Because no statute or set of statutes explicitly or implicitly authorized the State Engineer's consolidation of

basins and because he failed to comport with due process in issuing Order 1309, this Court must affirm the District Court.

STATEMENT OF THE ISSUES

I. Statutory Authority

A. Whether the State Engineer had statutory authority to "delineate" seven hydrographic basins as a single hydrographic basin for "joint administration" and "conjunctive management" of the water rights therein.

II. Due Process

A. Whether the State Engineer's notice and hearing procedure satisfied due process.

B. Whether the hearing satisfied due process and afforded the Respondents a full and complete opportunity to address the implications of Order 1309.

C. Whether the State Engineer's nondisclosure of the six criteria upon which he relied in Order 1309 to evaluate the "connectivity of the basins" satisfied due process.

STATEMENT OF THE CASE

This appeal stems from a district court order granting the Respondents' petitions for judicial review and adjudicating the State Engineer's Order 1309 void. Order 1309 involves an area in Nevada referred to as the Lower White River Flow

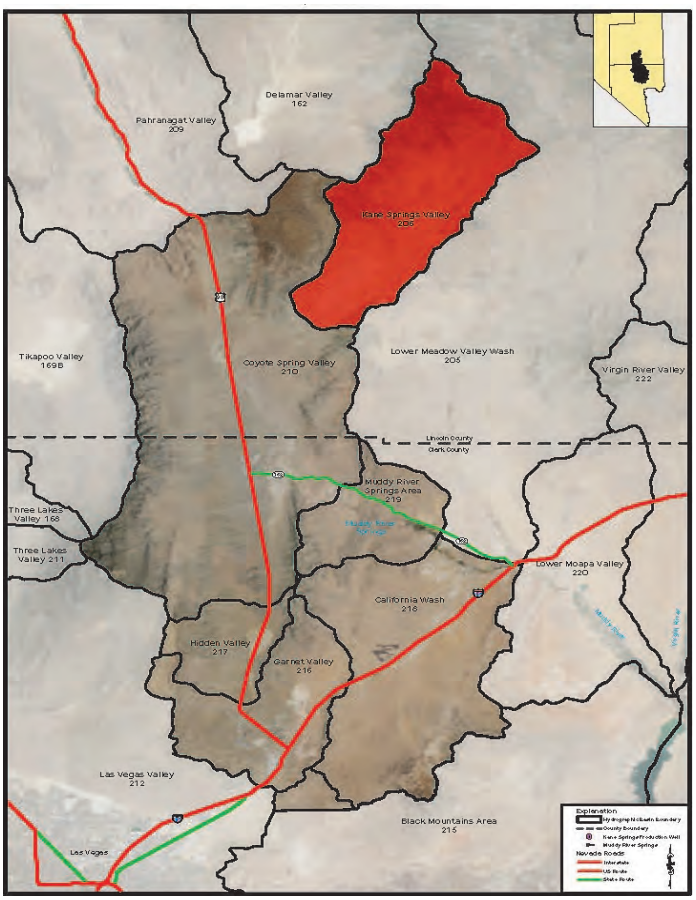
System ("LWRFS"). Since approximately 2001, the State Engineer has entered rulings and orders discussing the alleged hydraulic connection of the separate basins in the LWRFS area. In Order 1309, the State Engineer, for the first time in Nevada history, combined seven separate hydrographic basins into one single hydrographic basin and applied a pump cap across all of the basins, regardless of the specific basin's impact *vel non* on spring flows and Muddy River flow. In so doing, the State Engineer erased the boundaries among those separate basins, thereby reordering the relative priority rights of the groundwater rights holders in the seven basins. Worse, the State Engineer did not give the water rights holders adequate notice of the management decisions he ultimately made in Order 1309, and he did not disclose the evidentiary criteria he applied.

The District Court concluded that (1) the State Engineer does not have statutory authority to issue Order 1309; (2) Order 1309 violates the prior appropriation doctrine; and (3) Order 1309 was issued without due process.

Following the entry of the District Court's order, the State Engineer, SNWA, CBD, and MVIC appealed. The State Engineer concedes he violated SNWA's and MVIC's due process rights and has agreed this Court should affirm the District Court's decision granting SNWA's and MVIC's petitions for judicial review in part. *See* AOB 3 n.6. Thus, there is no case or controversy remaining between SNWA, MVIC, and the State Engineer.

STATEMENT OF THE FACTS

In Order 1309, the State Engineer combined seven separate hydrographic basins into one basin, as shown on the following map:



18 JA 7927, 7976 Location Map of the LWRFS (Kane Springs shown in red; remaining basins shown in dark brown)).

Order 1309 is the latest order in a string of orders and rulings issued by the State Engineer over the past two decades concerning the basins in the LWRFS area. Those orders and rulings comprise the context in which Order 1309 was entered and demonstrate why the State Engineer's reliance on statutes having nothing to do with the issues in this case cannot authorize Order 1309.

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I. The Prevailing Respondents.

A. CSI is the developer of the master planned community Coyote Springs. CSI has certificated and permitted water rights in the amount of 4,140 acre feet annually ("afa") in the Coyote Spring Valley Basin (Basin 210) ("Coyote Spring Valley"). CSI also holds 246.96 afa of permitted water rights in Kane Springs Valley Hydrographic Basin (Basin 206) ("Kane Springs").

B. Lincoln is a political subdivision of the State of Nevada, created for the purpose of providing adequate and efficient water service within Lincoln County. Lincoln and Vidler hold permitted and most-senior groundwater rights granted by the State Engineer in Kane Springs.

C. Both Georgia-Pacific and Republic are long-established businesses located in Garnet Valley Hydrographic Basin (Basin 216) ("Garnet Valley") that use and rely on certificated, proven or otherwise fully used groundwater rights to support their operations.

D. Nevada Cogeneration Associates Nos. 1 and 2 operate combined cycle gas-fired cogeneration facilities located near the southeastern boundary of the LWRFS area. The points of diversion for the fully certificated water rights owned and utilized by NCA are located entirely within a narrow part of the Black Mountains Area Hydrographic Basin (Basin 215) ("Black Mountains Area").

E. Apex and Dry Lake hold water rights in Garnet Valley and in the

Black Mountains Area.

II. Brief History of Water Applications Prompting the 1169 Pump Test.

In 2001, several parties, including SNWA, MVWD, and CSI, applied for new and additional groundwater rights in Coyote Spring Valley, Black Mountains Area, Garnet Valley, Hidden Valley, Muddy River Springs Area ("MRSA"), and Lower Moapa Valley. *See* 3 JA 824, 827. The State Engineer issued Order 1169 on March 8, 2002, which held those applications in abeyance because he did not have enough information to determine if *additional* water was available for appropriation under these *new* applications. *See id*. at 829-30. Order 1169 described the thick layers of the dense carbonate rock aquifer system that underlies Southern Nevada, north and east to White Pine County, and the Utah border. *See id*. at 826.

In his order, the State Engineer acknowledged that significant research was done, but found that several complicated factors needed to be addressed to understand the availability of additional water in these basins. *Id*. at 826. Thus, the State Engineer ordered the applicants to conduct a study on the availability of water, pursuant to NRS 533.368.[2] *See id.* at 829-30.[3] As a result, the 1169 Pump

[2] NRS 533.368(1) allows for the State Engineer to conduct a study prior to granting new water rights under NRS 533.370.

Test was ordered and conducted to quantify the availability of unallocated groundwater for *additional* appropriation, not to determine whether existing water rights should be curtailed. *See id*. Pursuant to Ruling 5712, Kane Springs was specifically excluded from the 1169 Pump Tests. *See* 3 JA 864, 867, 886. The State Engineer concluded there was not substantial evidence that the appropriation of a limited quantity of water in Kane Springs would have any measurable impact on the Muddy River Springs given the physical characteristics of the aquifers in Kane Springs. *See id*.

III. Order 1169A's Pump Test.

Order 1169A described the pump test provided for in Order 1169 to "stress" the Carbonate Aquifer through two years of pumping and examining water levels in monitoring wells throughout the LWRFS area. 3 JA 819-23. Some Participants in the Aquifer test included SNWA/Las Vegas Valley Water District ("LVVWD"), MVWD, CSI, Moapa Band of Paiutes, and Nevada Power Company. *Id*. at 820. Pumping included an average of approximately 5,300 afa in Coyote Spring Valley and 14,535 afa total pumping, of which 3,840 afa was alluvial pumping from the MRSA basin. *See* 2 JA 326, 330. The participants engaged in the 1169 Pump

[3] The Appellants claim the study was ordered "pursuant to NRS 534.110(2)(b)." See AOB 14. But Order 1169 expressly authorizes the pump tests under NRS 533.368 and does not mention NRS 534.110(2)(b).

Tests from 2010 to 2012. 3 JA 820. The participants submitted their pump test results in 2013. 2 JA 326, 330.

Following the 1169 Pump Test, the State Engineer issued Rulings 6254-6261, a series of rulings relying on the 1169 Pump Test results. *See, e.g.*, 3 JA 920, 920-50 (denying pending applications for new water rights in Coyote Spring Valley); 2 JA 399-400 (denying pending applications of certain Order 1169 study participants in Coyote Spring Valley, Garnet Valley, Hidden Valley, California Wash, MRSA and the Black Mountains Area). These orders function to protect existing water rights holders, including Respondents. Notably, the State Engineer denied all pending applications on a basin-by-basin basis notwithstanding his determination that each basin had a hydrologic connection with the carbonate aquifer.

IV. Interim Order 1303.

On January 11, 2019, nearly 17 years after issuing Order 1169, the State Engineer issued Interim Order 1303. *See* 2 JA 394, 408. Interim Order 1303 identified Coyote Spring Valley, MRSA, Hidden Valley, Garnet Valley, California Wash, and a portion of the Black Mountains Area as a "joint administrative unit". *See id.* at 406. Kane Springs was not included in Interim Order 1303. *See id*. Interim Order 1303 also imposed a temporary moratorium on approvals for

subdivisions pending another public process to determine the groundwater availability in the LWRFS area. *See id*. at 407.

Interim Order 1303 directed that reports should be filed that address the following matters:

> a. The geographic boundary of the hydrologically connected groundwater and surface water systems comprising the Lower White River Flow System;
>
> b. The information obtained from the Order 1169 aquifer test and subsequent to the aquifer test and Muddy River headwater spring flow as it relates to aquifer recovery since the completion of the aquifer test;
>
> c. The long-term annual quantity of groundwater that may be pumped from the Lower White River Flow System, including the relationships between the location of pumping on discharge to the Muddy River Springs, and the capture of Muddy River flow;
>
> d. The effects of movement of water rights between alluvial wells and carbonate wells on deliveries of senior decreed rights to the Muddy River; and,
>
> e. Any other matter believed to be relevant to the State Engineer's analysis.

See id. at 406-07.

The State Engineer identified the LWRFS area as including the following hydrographic basins: Coyote Spring Valley, a portion of Black Mountains Area, Garnet Valley, Hidden Valley, California Wash, and the Muddy River Springs Area. *See id*. Kane Springs continued to be excluded as part of the LWRFS area

in Interim Order 1303. *See id*. NRS 534.110(6) was not cited or mentioned as authority for the State Engineer's request for reports or the further proceedings stated in the Order.

In July and August 2019, reports and rebuttal reports were submitted discussing the four matters set forth in Interim Order 1303. On July 25, 2019, the State Engineer issued a Notice of Pre-Hearing Conference, which occurred August 9, 2019. *See* 2 JA 697, 697-736. On August 23, 2019, the State Engineer issued a Notice of Hearing (amended August 26, 2019), noting the hearing would be "the first step" in determining how to address future management decisions, including policy decisions, relating to the LWRFS area. *See* 2 JA 464, 465 (Notice); *see* 2 JA 486, 487 (Amended Notice). Regarding Order 1303's directive that reports be filed on "any other matter believed to be relevant," the Hearing Officer stated that management or policy issues were not included in the directive. 44 JA 17359. The State Engineer ordered the parties to participate in a two-week evidentiary hearing related to these issues (the "1303 Hearing").

V. The 1303 Hearing.

The 1303 Hearing was conducted for two weeks in the fall of 2019. At the start of the administrative hearing, the State Engineer reiterated that the public administrative hearing was not a "trial-type" or contested adversarial proceeding.

See 44 JA 17357, 17359. The hearing consisted of expert testimony presented by the various participants, including, among others, the Respondents.

In December 2019, following closing statements by the participating stakeholders, the State Engineer neither engaged in any additional public process nor solicited additional input regarding "future management decisions, including policy decisions, relating to the [LWRFS] basins." *See* 2 JA 486, 487. Thus, the Order 1303 Hearing was not just the first step in the State Engineer's decisions concerning the basin management set forth in Order 1309, it was the only step.

VI. Order 1309 and the Resulting District Court Order.

The State Engineer issued Order 1309 on June 15, 2020.[4] *See generally* 2 JA 326, 326-93. The first three ordering paragraphs state as follows:

> 1. The Lower White River Flow System consisting of the Kane Springs Valley, Coyote Spring Valley, Muddy River Springs Area, California Wash, Hidden Valley, Garnet Valley, and the northwest portion of the Black Mountains Area as described in this Order, *is hereby delineated as a single hydrographic basin*. The Kane Springs Valley, Coyote Spring Valley, Muddy River Springs Area, California Wash, Hidden Valley, Garnet Valley and the northwest portion of the Black Mountains Area are hereby established as sub-basins within the Lower White River Flow System Hydrographic Basin.
>
> 2. 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.

[4] Because of its centrality to this dispute, Respondents attach Order 1309 as an addendum to their Joint Answering Brief.

> 3. The maximum quantity of water that may be pumped from the Lower White River Flow System Hydrographic Basin may be reduced if it is determined that pumping will adversely impact the endangered Moapa dace.

Id. at 390.

In other words, for the first time in Nevada history, the State Engineer combined separate hydrographic basins into one hydrographic basin. The Order does not provide guidance about administration of the new "single hydrographic basin" and provides no clear analysis to support the 8,000 afa number for the maximum sustainable yield.

Regarding the parameters for the State Engineer's consideration of evidence regarding basin inclusion and basin boundary, the State Engineer stated he "considered this evidence and testimony on the basis of a common set of criteria that are consistent with the original characteristics considered critical in demonstrating a close hydrologic connection requiring joint management in Rulings 6254-6261." *Id*. at 372-73. However, the State Engineer did not disclose these criteria to the stakeholders before or during the Order 1303 proceedings nor were those criteria even listed or disclosed in Rulings 6254-6261. *See* 3 JA 920, 920-50; 2 JA 399-400. Instead, he disclosed them for the first time in Order 1309, after the stakeholders had engaged in extensive investigations, expert reporting, and factual hearing requested by Order 1303.

Based upon these previously undisclosed criteria, the State Engineer combined the separate hydrographic basins into a single hydrographic basin. *See id*. The State Engineer also added the previously excluded Kane Springs to the combined basin and modified the included portion of the Black Mountains Area. *See* 2 JA 390. As a result of the consolidation of the basins, the relative priority of all water rights within the seven affected basins are reordered and the priorities are considered in relation to all water rights holders in the consolidated basins, rather than in relation only to the other users within the original separate basins.

Because Order 1309 constitutes a gross overreach of power where none exists, its findings were not supported by substantial evidence, and it was the result of several due-process violations, Respondents petitioned the District Court for judicial review. Following substantial briefing and oral argument, the District Court entered its Findings of Fact, Conclusions of Law, and Order Granting Petitions for Judicial Review. It concluded that (1) the State Engineer does not have statutory authority to jointly administer multiple basins by creating the LWRFS "Superbasin"; (2) the State Engineer does not have legal authority to conjunctively manage the "Superbasin"; (3) Order 1309 violates the prior appropriation doctrine; and (4) the State Engineer violated the Petitioners' due process rights in failing to provide notice to Petitioners or an opportunity to

comment on the administrative policies inherent in the basin consolidation. These appeals followed.

SUMMARY OF THE ARGUMENT

First, the State Engineer does not have statutory authority to "delineate" multiple basins as a single hydrographic basin. The statutes and case law in the AOB do not support Order 1309. While the Appellants contend that Order 1309 was merely a "factual determination", combining the seven separate basins into one effectively reorders the relative priority rights in the seven basins and relegates senior groundwater right holders in their basin to a much lower priority position than groundwater right holders in the *other* basins. Thus, Order 1309 is not merely a set of factual findings but rather a management directive that fails because the State Engineer lacked the legal authority to issue it.

Second, the State Engineer deprived Respondents of due process in issuing Order 1309 because Respondents were not provided adequate opportunity to address the management decisions set forth therein. The State Engineer repeatedly told the parties that management issues would not be discussed at the 1303 Hearing (resulting in Order 1309), thus the State Engineer's notice and hearing procedure were insufficient. Moreover, the State Engineer failed to give sufficient notice of the criteria relied upon to assess the connectivity of the separate basins in Order 1309. Accordingly, the District Court's order should be affirmed.

STANDARD OF REVIEW

I. Statutory Authority.

"[T]he scope of the State Engineer's authority . . . is a question of statutory interpretation, subject to *de novo* review." *Wilson v. Pahrump Fair Water, LLC*, 137 Nev. 10, 14, 481 P.3d 853, 856 (2021). The State Engineer cannot act beyond the scope of his statutory authority. *Howell v. Ricci*, 124 Nev. 1222, 1230, 197 P.3d 1044, 1050 (2008). The State Engineer contends this Court should defer to his interpretation of his statutory power; however, this Court "is free to decide purely legal questions . . . without deference to the agency's decision." *Town of Eureka v. Off. of State Eng'r of State of Nev., Div. of Water Res.*, 108 Nev. 163, 165, 826 P.2d 948, 949 (1992). This is especially true here, where the State Engineer's interpretations are inconsistent with the plain language of the statutes.

While the Appellants rely on NRS 533.450(10), this Court has explained that the presumption in NRS 533.450(10) "does not extend to purely legal questions, such as the construction of a statute, as to which the reviewing court may undertake independent review." *In re Nevada State Eng'r Ruling No. 5823*, 128 Nev. 232, 239, 277 P.3d 449, 453 (2012) (internal quotations omitted).

II. Due Process.

This Court reviews constitutional challenges, including a violation of due process rights, *de novo*. *Eureka Cty. v. Seventh Judicial Dist. Court*, 134 Nev. 275,

279, 417 P.3d 1121, 1124 (2018) (citing *Callie v. Bowling*, 123 Nev. 181, 183, 160 P.3d 878, 879 (2007)). Contrary to the statement of the Standard of Review in the AOB, the State Engineer's interpretation of due process requirements for proper notice and hearing are not considered persuasive because the issues in this appeal involve legal questions only. And any applicable standard of review of State Engineer decisions presupposes the fullness and fairness of the administrative proceedings, a presupposition not appropriate in this case. *See Revert v. Ray*, 95 Nev. 782, 787, 603 P.2d 262, 264-65 (1979) (when procedures grounded in basic notions of fairness and due process are not followed and the resulting administrative decision is arbitrary, oppressive, or accompanied by a manifest abuse of discretion, this court will not hesitate to intervene) (citing *State ex rel. Johns v. Gragson*, 89 Nev. 478, 515 P.2d 65 (1973)).

ARGUMENT

I. THE STATE ENGINEER DOES NOT HAVE STATUTORY AUTHORITY TO COMBINE MULTIPLE BASINS INTO ONE FOR "JOINT ADMINISTRATION" OR "CONJUNCTIVE MANAGEMENT".

A. No Nevada Statute Authorizes the State Engineer to "Delineate" Multiple Basins as One Basin for Any Purpose.

In Order 1309, the State Engineer "delineated" the seven basins as a single hydrographic basin. 2 JA 326, 390. No Nevada statute authorizes the State Engineer to redefine, combine, or "delineate" the 232 hydrographic basins that

were established in the 1960s and have been relied upon since. The State Engineer's attorney admitted during oral argument before the lower court that there was no explicit statutory authority for Order 1309. 49 JA 22412, 22586-89, 22605. In fact, his counsel conceded that Order 1309 combined the basins into one basin even though "the rest of his authority does apply to managing on a basin by basin basis". *Id*. at 22589.

The Appellants' use of the terms "joint administration" and "conjunctive management" is intentionally misleading. As the District Court correctly explained, taking into "account how water use in one basin may affect the water use in an adjoining or closely related basin when determining how best to 'actively manage' a basin" is "much different than how the State Engineer defines 'joint management': erasing the borders of seven already established legal administrative units and creating one legal superunit in the LWRFS superbasin." 49 JA 23299, 23325.

The Appellants concede the State Engineer's authority must derive from a statute but make vague references to his "mosaic of powers" and "statutory duties" directing him to protect senior rights, the "public resource", the Moapa dace, and "public trust" in an attempt to avoid their burden to identify the plain language of the statutes. *See* AOB 27, 41. The Appellants cite NRS 534.110(6), NRS 534.030, NRS 534.120, and NRS 534.024(1)(e), yet none of these statutes provide the

authority they claim the State Engineer holds to issue Order 1309. *See* AOB 27; 2 JA 326, 326-91.

To determine whether the State Engineer has statutory authority to enter Order 1309, "the plain meaning of the relevant text guides the answer." *Pahrump Fair Water*, 137 Nev. at 14, 481 P.3d at 856 (citing *Coast Hotels & Casinos, Inc. v. Nev. State Labor Comm'n*, 117 Nev. 835, 840, 34 P.3d 546, 550 (2001)); *Doolin v. Dep't of Corr.*, 134 Nev. 809, 811, 440 P.3d 53, 55 (Nev. App. 2018) ("To ascertain the Legislature's intent, we first focus our inquiry on the statute's plain language, avoid[ing] statutory interpretation that renders language meaningless or superfluous.") (alteration in original).

i. NRS 534.110(6) Does Not Authorize Order 1309.

The Appellants contend NRS 534.110(6) "mandated" the State Engineer's "action in Order 1309". AOB 28. However, the plain language of the statute does not authorize the State Engineer to combine multiple basins into one for any purpose.

NRS 534.110(6) creates a two-step curtailment process. NRS 534.110(6), like the entire statutory scheme for Nevada's water law, provides for investigations and curtailment on a basin-by-basin basis. NRS 534.110(6) does not authorize investigations to change the boundaries of established basins, combine those basins into a single basin, and then curtail the groundwater rights based upon restructured

priority dates in the consolidated basin. *See* NRS 534.110(6); *see also* 49 JA 23299, 23324-25.

Notably, even if the State Engineer had authority under NRS 534.110(6) to investigate and curtail water rights across multiple basins, he was required to follow the statutory procedure to commence such action. Order 1303 does not even mention NRS 534.110(6). Accordingly, NRS 534.110(6) does not provide statutory support for Order 1309.

ii. Neither NRS 534.030 Nor NRS 534.120 Authorize Order 1309.

The Appellants contend the State Engineer "delineated the boundary of the LWRFS based on his statutory authority provided by NRS 534.030(1)-(2)", and Order 1309 "was just a continuing regulation of the area that is authorized by NRS 534.120(1)". AOB 32-33. The plain language of the statutes does not support this argument.

NRS 534.030 allows the State Engineer to designate an area "in any particular basin or portion therein" an "area of active management" *if* the water right holders in the basin petition the State Engineer to do so or *if* the State Engineer holds a hearing "within the basin" to determine whether administration of

"that basin" is justified. NRS 534.030(1)-(2).[5] Thereafter, within the area of active management, if "the groundwater basin is being depleted", the State Engineer may issue rules, regulations, and orders. Neither statute allows the State Engineer to designate multiple basins as an area of active management or to enter orders across multiple basins.

Further, the Appellants' argument is belied by Order 1309 itself, which explains that six of the seven basins affected by Order 1309 were designated decades ago. *See* 2 JA 326, 326-27 (Kane Springs has never been designated). The State Engineer designated six of the basins under NRS 534.030 individually, at different times, and not in relation to the other basins. *See* 3 JA 835-63 (Orders designating six of the basins). Moreover, the State Engineer did not designate them for the reasons the State Engineer now asserts require consolidating them. *See id.*

The Appellants concede that Kane Springs has never been designated under NRS 534.030 and therefore, admit that NRS 534.120 cannot provide authority to subject Kane Springs to Order 1309. AOB 33. It is illogical that Order 1309 could be considered an order under NRS 534.120 for some of the basins but not others. Moreover, the subsections of NRS 534.120 list several tools that the State Engineer

[5] Neither of these procedural requirements occurred because neither Order 1169 nor Order 1303 were orders for designation of multiple basins under NRS 534.030.

can use in an area of active management. Not one of those tools allows the State Engineer to "delineate" multiple basins as one. Thus, the plain language of these statutes does not provide support for Order 1309.

iii. NRS 533.024(1)(e) is a Legislative Declaration that Does Not Provide the State Engineer Authority for Order 1309.

The Appellants argue the Legislature "has ***explicitly*** stated that it is the policy" of Nevada to conjunctively manage surface water and groundwater in Nevada, this policy "declaration" is entitled to great weight, and NRS 533.024(1)(e) constitutes a "ratification and confirmation of this Court's and the State Engineer practices of conjunctive management." AOB 57-58, 60 (emphasis added). However, NRS 533.024(1)(e) provides, in relevant part, that "[i]t is the policy of this State . . . [t]o manage conjunctively the appropriation, use and administration of all waters of this State, regardless of the source of the water." This statute does not authorize the combination of multiple basins for "joint administration" or "conjunctive management", as the State Engineer uses those terms.

In fact, the State Engineer has informed the Legislature that "although the 2017 Legislative declaration [(NRS 533.024(1)(e))] recognizes the hydrological connection that often exists between groundwater and surface water sources, the ***statute does not provide the framework necessary to effectively implement the***

Legislature's policy direction." 48 JA 21553, 21582-21584 (emphasis added) (*Minutes of the Meeting of the Assembly Comm. on Nat. Res., Agric., and Mining,* Feb. 27, 2019, 2019 Leg., 80th Sess. (Nev. 2019) (testimony of Tim Wilson, Acting State Engineer)).[6] Indeed, the State Engineer recently testified similarly before the Interim Subcommittee on Public Lands, specifically referencing the District Court's decision in this matter and lamenting the lack of clarity around his authority: "[conjunctive management] is the policy directive of the Legislature, but it is not explicit as to how we are to implement that policy directive, and there is no explicit authority bestowed upon the state engineer to conjunctively manage water resources." *See* RJN, Exhibit 1 (*Minutes of the Meeting of the Assembly Subcommittee on Public Lands,* May 23, 2022, 2022 Interim Legislature (Nev. 2022) at 21).

The Nevada Legislature's Subcommittee on Public Lands approved the request of a bill draft based on the State Engineer's testimony. *See* RJN, Exhibit 5 (*Minutes of the Meeting of the Assembly Subcommittee on Public Lands,* August

[6] As set forth in the Respondents' Joint Request for Judicial Notice (filed contemporaneously herewith) ("RJN"), the State Engineer has conceded in Order 1329, an order entered subsequent to Order 1309, that his legislative efforts to obtain the statutory authority to "conjunctively manage" groundwater and surface water in the manner he desires failed in the 2019 session. *See* RJN, Exhibit 4 (Order 1329) ("However, in the 2019 Legislative session, ***the statutory revisions required to give the State Engineer authority to implement the draft regulation were unsuccessful***.") (48 JA 21606, 21612-13) (emphasis added).

22, 2022, 2022 Interim Legislature (Nev. 2022) at 11-12) (specifically requesting "a bill to clarify the processes and authority for the conjunctive management of surface and groundwater basins, including, without limitation, the public notification processes, appeals processes, and the role of science in modifying management practices within such basins.").

Furthermore, as a statement of policy, the Legislature's declaration does not constitute a grant of authority under this Court's case law, but rather merely offers interpretive guidance. *See, e.g*, *Pawlik v. Shyang-Fenn Deng*, 134 Nev. 83, 85, 412 P.3d 68, 71 (2018). Even if one construes the statute as an express grant of authority, the State Engineer's interpretation would result in an unconstitutional reading of the provision, as the Legislature has failed to provide "standards . . . sufficient to guide the agency with respect to the purpose of the law and the power authorized," as required by this Court's jurisprudence. *Sheriff, Clark County v. Luqman*, 101 Nev. 149, 153, 697 P.2d 107, 110 (1985); *State v. Castaneda*, 126 Nev. 478, 481, 245 P.3d 550, 552-53 (2010) (construction of a statute that would render that statute unconstitutional must be avoided). The statement of policy simply does not authorize Order 1309, and the Court should reject the State Engineer's contention that it does.

iv. The State Engineer Interpretation of "Basin" is Unreasonable.

For the first time on appeal, the Appellants contend that the word "basin" is ambiguous and suggest that the term is synonymous with the word "aquifer". AOB 35. This Court should not consider these new arguments raised for the first time on appeal. *See Old Aztec Mine, Inc. v. Brown*, 97 Nev. 49, 52, 623 P.2d 981, 983 (1981) ("A point not urged in the trial court, unless it goes to the jurisdiction of that court, is deemed to have been waived and will not be considered on appeal."). The State Engineer did not argue the word "basin" was ambiguous in the proceedings below because it is not. Further, the State Engineer specifically admitted the basins in Nevada are used for "'water planning and management purposes'". 47 JA19725, 19765.[7]

In 1943, the Legislature authorized the State Engineer to "enter into agreements with the United States Geological Survey [("USGS")] . . . for cooperation in making stream measurements, underground water studies, snow surveys, or any investigations ***related to the development and use of the water***

[7] In fact, the Appellants' new argument that basins are aquifers and thus factual determinations rather than administrative units is belied by their own argument that the seven hydrographic basins were established with knowledge of the "interconnectedness of the LWRFS". AOB 37.

resources of Nevada." NRS 532.170 (emphasis added).[8] In 1968, USGS and the Nevada Division of Water Resources published an index of the hydrographic basins in Nevada. *See* Rush, F.E., 1968, Index of hydrographic areas in Nevada: Nevada Division of Water Resources Information Report ("Rush Report").[9] The map at the end of the Rush Report plainly shows that Nevada has 232 distinct hydrographic basins that are used for water management. *See id*.; *see also* 5 JA 2302 (State Engineer Map – State of Nevada Water Resources and Inter-Basin Flows). Thus, when the Nevada Legislature refers to a "basin" in Nevada's water law statutes, the only reasonable interpretation is that it is referring to the administrative units used to manage water in Nevada–the 232 established hydrographic basins.

The Appellants now claim the word "basin" is ambiguous because it can have "separate meanings in separate contexts." AOB 35. But the context at issue is what the Legislature intended the word "basin" to mean in drafting Nevada's water law statutes. *Gold Ridge Partners v. Sierra Pac. Power Co.*, 128 Nev. 495, 500-01, 285 P.3d 1059, 1062-63 (2012). The Appellants cannot manufacture an

[8] Citing NRS 532.170, the Appellants contend that "[t]he Legislature directed the State Engineer distinguish those aquifers, with the help of the USGS." AOB 36. The statute does not say that. The statute does not even reference aquifers.

[9] http://images.water.nv.gov/images/publications/Information%20series/6.pdf (last visited December 30, 2022).

ambiguity by suggesting unreasonable interpretations of the term "basin" that have never been applied or adopted by the State Engineer, courts, or water right holders. *See Great Basin Water Network v. State Eng'r*, 126 Nev. 187, 196, 234 P.3d 912, 918 (2010) (explaining "[a]n ambiguous statute is one that is capable of more than one *reasonable* interpretation") (emphasis added).

The Appellants also now claim a "[b]asin can refer to a definable aquifer, which is a single source of water supply, and a single 'geological formation or structure that stores or transmits water, or both.'" AOB 35. This is blatantly false. NRS 534.0105 defines "aquifer" as a "geological formation or structure that stores or transmits water, or both." NRS 534.0105 does not include "basin" within the definition of an aquifer nor does it reference "a single source of water supply." Moreover, several statutes refer to a "system of aquifers" without requiring or suggesting that such a system can, should, or must constitute a "basin". *See, e.g.*, NRS 534.0125, NRS 534.0145, NRS 534.015.

The fact that the Legislature specifically defined the term "aquifer" and continued to use the distinct term "basin" demonstrates these are separate terms that are not interchangeable. *See Dezzani v. Kern & Assocs., Ltd.*, 134 Nev. 61, 65, 412 P.3d 56, 59-60 (2018) (explaining when the Legislature uses distinct terms, one term cannot be implied within the meaning of a defined term); *Allstate Ins. Co. v. Fackett*, 125 Nev. 132, 138, 206 P.3d 572, 576 (2009) ("We read statutes within

a statutory scheme harmoniously with one another to avoid an unreasonable or absurd result."); *McGrath v. State Dep't of Pub. Safety*, 123 Nev. 120, 123, 159 P.3d 239, 241 (2007) (concluding "the Legislature intended to use words in their usual and natural meaning"); *Davis v. Mich. Dep't of Treasury*, 489 U.S. 803, 809, 109 S.Ct. 1500, 103 L.Ed.2d 891 (1989) ("It is a fundamental canon of statutory construction that the words of a statute must be read in their context and with a view to their place in the overall statutory scheme.").

The Appellants also claim that a "basin" can refer to (1) a river basin such as the Truckee River Basin or the Colorado River Basin, (2) the 232 hydrographic basins that have been established in Nevada, or (3) the entire Great Basin, which encompasses the entire state of Nevada. AOB 35-36. As indicated *supra*, the only reasonable interpretation is the second. It is illogical that the Legislature's statutes in NRS Chapter 533 and 534 could effectively be amended by referring to any of a variety of terms in the State Engineer's (administrative agency's) own Water Words Dictionary that include the word basin. The Appellants' suggestion that the term "basin," as used throughout NRS Chapters 533 and 534, could mean the Great Basin or the Truckee River Basin is nonsensical and would lead to absurd results.

The Appellants' new attempts at statutory interpretation fail as they are inconsistent with the plain language of the statutes, contrary to the practice of water management over the past 50 years, and would create complete uncertainty

for water right holders.[10] Accordingly, this Court should reject the Appellants' unreasonable interpretations and manufactured claims of ambiguity.

B. No Nevada Statute Authorizes the State Engineer to "Delineate" Multiple Hydrographic Basins as a Single Hydrographic Basin Due to Professed Concerns About the Public Welfare, Public Trust, or the Endangered Species Act.

The State Engineer is a creature of statute, and his actions must be within a statutory grant of authority. *Wilson v. Pahrump Fair Water, LLC*, 137 Nev. 10, 14, 481 P.3d 853, 856 (2021) (explaining "[t]he State Engineer's powers thereunder are limited to 'only those . . . which the legislature expressly or implicitly delegates'" (quoting *Clark Cty. v. State, Equal Rights Comm'n*, 107 Nev. 489, 492, 813 P.2d 1006, 1007 (1991)); *see also Howell v. Ricci*, 124 Nev. 1222, 1230, 197 P.3d 1044, 1050 (2008) (holding the State Engineer cannot act beyond his statutory authority).

[10] While the State Engineer and Appellants now deny that Nevada's basins have historically been managed on a basin-by-basin basis, the State Engineer's office admitted it to the Legislature and specifically asked for "express acknowledgement to the Office of the State Engineer to administer water rights based upon the resource of the water right, not artificial administrative boundaries." RJN, Exhibit 1, 24 (*Minutes of the Meeting of the Subcommittee on Pub. Lands of the Joint Interim Standing Committee on Nat. Resources*, May 23, 2022) (testimony of Micheline Fairbank). In response, a legislator expressed concern that the State Engineer was "almost calling for a revolution in Nevada water law by talking about prior[ ] appropriation doctrine being either completely suppressed or turned over to [the State Engineer] to do what you think is right in each basin based on the scientific approach." *Id*.

To avoid the reality that no statute authorizes Order 1309, the Appellants focus on broad issues they contend provide "independent" sources of authority for Order 1309. According to the Appellants, Order 1309 is necessary to "fulfill [the State Engineer's] statutory duties to protect the public interest and the public trust", and his statutory authority should be interpreted "broadly" so that he can prevent the state from liability under the federal Endangered Species Act ("ESA"). AOB 41. No Nevada statute authorizes the State Engineer to combine multiple basins into one out of concern for an endangered species, to protect the public interest or public trust, or to comply with the Endangered Species Act.

In support of their argument, the Appellants cite NRS 533.023, NRS 533.367, and NRS 533.370(2). The plain language of these statutes simply does not authorize the State Engineer to combine basins for any purpose and are not even applicable to this case. *See* NRS 533.023 (defining the term "wildlife purposes"); NRS 533.367 (applies to a person seeking a right to use water from a spring or water which has seeped to the surface of the ground); NRS 533.370(2) (applies to new water applications). Accordingly, none of the statutes cited by the Appellants authorizes the State Engineer to combine separate hydrographic basins into a single hydrographic basin to manage existing water rights.

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C. The State Engineer's Claim that Order 1309 Simply Contains Factual Findings is Contradicted by the Order Itself, Which Concludes with Management Directives.

The Appellants' refashioned defense of Order 1309 depends on the validity of the assertion that the Order is simply a factual determination of the limits of the "LWRFS aquifer." AOB 4.[11] This is a fiction created by the Appellants to obtain a more (inapplicable) deferential standard of review and avoid having to identify specific statutory authority for the actions taken by the State Engineer. The Appellants blatantly mischaracterize Order 1309 in asserting that "[t]he findings in Order 1309 are properly limited to Interim Order 1303's specific list of factual questions." AOB 6. The findings in Order 1309 and "criteria" adopted therein conclusively demonstrate Order 1309 did not simply define "the boundaries of the shared aquifer" but rather applied previously undisclosed criteria to create the new "LWRFS basin" as a *management tool with immediate effect.* AOB 81. The State Engineer did not defer management decisions; he specifically undertook them.

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[11] Similarly, the Appellants' representation that the State Engineer is "required" and authorized to "define aquifers" as the first step of water management is inconsistent with the statutes cited in the AOB. *See, e.g*, NRS 533.024(1)(c) (legislative policy statement); NRS 533.364 (applies to interbasin transfers of groundwater); NRS 533.3705 (applies to initial applications); NRS 534.030(4) (supervision of wells); NRS 534.110(2) (permits the State Engineer to assess the perennial yield of aquifers if overpumping is indicated).

i. Order 1309 is an Administrative Tool.

Order 1309 changed the relative priorities of water rights holders within the original hydrographic basins. The District Court properly concluded that "as a result of the consolidation of the basins, the relative priority of all water rights within the seven affected basins will be reordered and the priorities will be considered in relation to all water rights holders in the consolidated basins, rather than in relation only to the other users within the original separate basins." 49 JA 23299, 23326. The Appellants contend this is incorrect because the State Engineer supposedly has not changed priorities *yet*. *See, e.g.*, AOB 5, 79.

The doctrine of prior appropriation has been part of Nevada's common law since the 1800's. *See Lobdell v. Simpson*, 2 Nev. 274, 277-78 (1866). "Nevada's water statutes embrace prior appropriation as a fundamental principle. Water rights are given '***subject to existing rights***,' NRS 533.430(1), given dates of priority, NRS 533.265(2)(b), and determined based on relative rights, NRS 533.090(l)-(2)." *Min. Cnty. v. Lyon Cnty.*, 136 Nev. 503, 513, 473 P.3d 418, 426 (2020) (emphasis added). Thus, "[i]n Nevada, the doctrine of prior appropriation determines the priority of both pre-1905 vested water rights and modern statutory water law." *Rand Properties, LLC v. Filippini*, Docket No. 78319 (Unpublished Disposition) WL 1619306 (Order Affirming in Part and Reversing in Part, April 9, 2021).

It is universally understood that the priority of a water right is its most valuable component. *See* Gregory J. Hobbs, Jr., *Priority: The Most Misunderstood Stick in the Bundle*, 32 Envtl. L. 37, 43 (2002) ("Priority determines the value of a water right"). It is fundamental in Nevada that "a loss of priority that renders rights useless 'certainly affects the rights' value' and 'can amount to a de facto loss of rights.'" *Wilson v. Happy Creek, Inc.*, 135 Nev. 301, 313, 448 P.3d 1106, 1115 (2019) (quoting *Andersen Family Assocs. v. State Eng'r*. 124 Nev. 182, 190, 191, 179 P.3d 1201 (2008).

Order 1309 clearly violates the prior appropriation doctrine. The State Engineer intended Order 1309 to *immediately* alter the *effective* priority of water rights within the seven basins.[12] Appellants' arguments to the contrary nonsensically disregard the State Engineer's decision to manage the separate basins as a single hydrographic basin, a decision obviously intended to provide (and in fact providing) the very "mechanism" to manage the priorities within the basins in relation to previously unrelated "senior rights."

[12] Not only did the Legislature choose not to afford the State Engineer with discretion to alter priority rights in this manner, but it also affirmatively requires the State Engineer to preserve priority rights when performing his statutory duties. *See, e.g.*, NRS 534.110(6) (providing any curtailment "be restricted to conform to priority rights"); NRS 534.110(7); NRS 533.040(2) ("If at any time it is impracticable to use water beneficially or economically at the place to which it is appurtenant, the right may be severed from the place of use and be simultaneously transferred . . . ***without losing priority of right***.") (emphasis added).

Nothing could make this clearer than the State Engineer's own assertion in his brief before the District Court that the hydrographic area in which a junior right holder stakes its claim is irrelevant under the prior appropriation doctrine. 47 JA 19725, 19766. He contended there that "[d]ue to the close hydrological connection that the State Engineer has scientifically determined as a matter of fact, [petitioners'] rights . . . were always subject to older (more senior) existing rights, including those protected by the Muddy River Decree" regardless of which basin to which they were originally attached. *Id*. This could not be further from the truth and demonstrates the State Engineer's callous and shocking disregard for the doctrine of prior appropriation and priority of water rights.

Indeed, the District Court record contains other similar instances of the State Engineer admitting Order 1309 was not intended to be merely factual in nature, but rather was intended to and indeed does serve as a management tool. *See e.g.*, *id*. at 19743 (admitting that Order 1309 determined pumping cap and allowed the State Engineer to "jointly administer the LWRFS"); 49 JA 22738, 22791 ("Priority curtailment is what we're dealing with here where if there's not enough water in the system for all the water rights, then you start to cut people off who are the most junior").

The legal definition of "basin" further undermines the State Engineers' assertion that establishment of a single superbasin was a purely factual exercise.

Citing NRS 534.030(1)(b)'s plain meaning, the District Court concluded that "a *basin* is intended to be an *administrative unit*, defined by boundaries described by 'legal subdivision as nearly as possible.'" 49 JA 23299, 23324.

In subjecting the basins to a single 8,000 afa pump cap, the State Engineer engaged in further management of the new basin. The *application* of the cap across what were previously seven hydrographic basins is management of the new basin. Like consolidating the basins, imposing this pumping cap across all the basins means all of the water rights in the seven basins are subject to a new limit. This new limit provides legal parameters for the rights themselves and informs the usefulness and value of the right. It furthermore reflects that curtailment of water rights in the new basin will occur in relation to the new pump limit regardless of the security that senior rights holders may have previously enjoyed based on their relative seniority within their original basins.

The State Engineer's assessment of the pump data for the establishment and application of the pump cap underscores the fact that applying the cap to the whole of the seven basins was not merely a factual determination but rather a management action based on the State Engineer's view of practical imperatives.

The State Engineer acknowledged that pumping in different basins impacts spring flow differently and that the direct effect of pumping in distinct basins is still unknown given the structural complexity and heterogeneity of the basins. *See*

2 JA 326, 384. Nevertheless, the State Engineer implemented an 8,000 afa pump cap across all basins subject to Order 1309.

The State Engineer's decision to apply the pump cap across the entirety of the seven basins is inconsistent with his own conclusions regarding the heterogeneity of the consolidated basins and the fact that pumping in the separate basins impacts spring flows differently.

Accordingly, consolidating the separate basins into a new single administrative unit or "super basin" was *intended* as a management decision to subjugate carbonate water rights within the 1000 square mile area to "senior' rights along the Muddy River and Muddy River Springs Area for the purpose of preserving the efficacy of those senior rights.

Thus, the Order had the *immediate* effect of creating super priority for Muddy River and Muddy River Springs Area rights across previously separate hydrographic basins, diminishing the value of the Respondents' existing and planned applications for this water and the economic value of these rights.

As a result, the Appellants' argument that nothing has been curtailed *yet* cannot be a legal basis for validating this crude management tool. [13]

[13] The cap applies not only to carbonate groundwater rights, but also to groundwater rights sourced in the alluvial aquifer adjacent to the Muddy River. Appellants disingenuously ignore this separate aquifer in their brief, notwithstanding that the importance of the alluvial aquifer and its relationship to

ii. In Order 1309, the State Engineer Selectively Utilized Information Collected in the 1303 Hearing to Support Administrative and Management Decisions, Not Simply to Support Factual Conclusions.

The disingenuous contention that Order 1309 merely "defined the LWRFS by delineating its exterior boundaries" is belied not only by the explicit management directives included in the order but also the State Engineer's framework for considering the boundaries of the single basin.[14] The outcome of Order 1309 was not a factual determination of a subsurface aquifer, but rather a legally indefensible and confusing "*designation*" of a "*joint administrative unit*."

The following excerpts from Order 1309 clearly reflect that the State Engineer's purpose in weighing the 1303 evidence was to support a decision to

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the Muddy River and to the carbonate aquifer are identified in the fourth issue of Order 1303 and much of the concluding pages of Order 1309. *See e.g.*, 2 JA 326, 389. The inventory of LWRFS Groundwater Rights by Priority (3 JA 1665, 1665-80) reveals that approximately 6,500 acre feet of water rights having among the most senior priorities in the new "basin" are alluvial rights located in the MRSA. Accordingly, the vast majority of water rights that could continue to be pumped under the 8,000 acre foot cap are not carbonate rights at all, but alluvial rights in the MRSA, which, by the State Engineer's own assessment, have the most direct impact on the Muddy River. 2 JA 326, 389.

[14] Respondents dispute the evidence the State Engineer applied and relied upon to reach the "factual" conclusions underpinning Order 1309's administrative decisions and do not concede this evidence meets the substantial-evidence standard. However, despite the Appellants' reliance in the Opening Brief on the purported validity of these "facts" to support a right to "deference," Respondents will respect the Court's deferral of evaluation of the quality of the State Engineer's evidence until future briefing, should the Court conclude it necessary to consider that question.

combine the different basins into the newly created basin, not to simply define the subsurface carbonate aquifer. Indeed, he carried through on this objective despite also acknowledging that *additional studies* would be required to specifically identify the extent of the carbonate aquifer and subsurface connectivity—an identification he now contends was previously completed. And his principal tool in this effort was, contrary to the State Engineer's contention, the six criteria identified in the Order for inclusion in the new basin.

As these excerpts make clear, the six criteria do not simply distill the "facts" elicited in the Order 1303 Hearing, *see, e.g.*, AOB 6, but rather selectively identify information used by the State Engineer to justify the boundary of a consolidated new hydrographic basin.

Regarding the decision to include the entirety of the Coyote Springs Hydrographic Basin:

> **WHEREAS,** limited evidence and testimony were provided by participants advocating to either include or exclude the northern portion of Coyote Spring Valley. The State Engineer finds …..while information …… is convincing and supports a finding that local, potentially discrete aquifers may exist in parts of the northern Coyote Springs Valley, *his criteria for defining the LWRFS calls for the inclusion of the entirety of the basin in the LWRFS.*

2 JA 326, 378 (emphasis added).

Regarding the inclusion of a specific portion of the Black Mountains Area:

> a more inclusive approach . . . places the boundary to the south of the NCA production wells. . . . *It also better honors the State Engineer's criteria by acknowledging the uncertainty in the data while reflecting a recognized physical boundary in the carbonate-rock aquifer.*

Id. at 376 (emphasis added).

Regarding exclusion of Las Vegas Valley and the Lower Meadow Valley Wash Hydrographic Basins and the result-oriented purpose of the criteria:

> *WHEREAS, the geographic extent of the LWRFS is intended to represent the area that shares both a unique and close hydrologic connection and virtually all of the same source and supply of water, and therefore will benefit from joint and conjunctive management. . . . For other sub-basins such as Kane Springs Valley and the area around the NCA production wells in the Black Mountain Area, there is persuasive evidence to support their inclusion or exclusion; however, the State Engineer's criteria and available data mandate their inclusion. . . . For other basins whose inclusion was advocated, such as the northern portion of Las Vegas Valley and the Lower Meadow Valley Wash, the State Engineer finds that data do not exist to apply his criteria, and therefore they cannot be considered for inclusion into the LWRFS.*

Id. at 379 (emphasis added).

What is obvious from these excerpts is that the State Engineer selectively chose information presented in the 1303 Hearing to develop self-serving criteria

that could be used to justify the creation of a single basin—a new administrative unit with immediate regulatory, legal and economic ramifications.

D. Any Basis for the Conjunctive Management of Groundwater and Surface Water Does Not Provide Legal Support for the Joint Administration and Consolidation of Separate Hydrographic Basins.

Curiously, Appellants devote considerable focus on the State Engineer's "authority to conjunctively manage groundwater and surface water". *See* AOB 46-60. If Order 1309 were merely factual, the Appellants would not need to attempt to justify the decision to "conjunctively manage" the basins. Notwithstanding, the Appellants attempt to incorporate irrelevant case law and distract the Court from the only relevant issue here—whether the State Engineer has the statutory authority to "*delineate the LWRFS as a single hydrographic basin for joint administration"*. The Appellants conflate the conjunctive management of groundwater and surface water with the unprecedented "joint administration" of pre-existing hydrographic basins.

Indeed, Respondents were not concerned with the State Engineer's authority to conjunctively manage groundwater and surface water in a basin, and made this distinction clear throughout the District Court proceedings. *See e.g.*, 49 JA 22738, 22949 (argument distinguishing between the issue of whether the State Engineer can conjunctively manage groundwater and surface flows and the "issue of first

impression" central to Order 1309, which "is combining basins to make them one"); 49 JA 23034, 23178 (argument describing the question of law as whether the State Engineer has "authority to form this superbasin and engage in conjunctive management"); 49 JA 22738, 22886 (argument indicating that the State Engineer "sought input about the geographic boundary"). That notwithstanding, the Appellants mischaracterize the term "conjunctive management" in the context of this controversy, which focuses on the joint or conjunctive management of hydrographic basins.

Appellants cite NRS 534.110(6) as providing authority for "conjunctive management" as they use the term. That provision does not explicitly reference "conjunctive management" at all. As noted above, this provision in no way provides statutory authority for the consolidation of multiple basins into one. Indeed, it is not even clear how it could be interpreted to support "conjunctive management" like that described by the Appellants.

That said, and what is perhaps most important, is that, as described above, the 1303 Hearing was not merely an "investigation" into the separate basins, and the result was not limited to curtailment within individual basins; instead, the State Engineer consolidated seven basins into one and applied a pump cap across the whole of the previously existing seven basins. This action was unprecedented and

entirely beyond the scope of what is contemplated by the plain language of NRS 534.110(6).

The case law cited by the Appellants to contend the State Engineer has authority to "conjunctively manage" is equally unavailing. Appellants' reliance on *Cappaert v. United States*, 426 U.S. 128, 96 S. Ct. 2062 (1976) and *United States v. Orr Water Ditch Co.*, 600 F.3d 1152 (2010) is misplaced. As the *Cappaert* court highlighted, "[f]ederal water rights are not dependent upon state law or state procedures." 426 U.S. at 145, 96 S. Ct. at 2073. Thus, decisions of federal courts concerning federal reserved water rights are irrelevant to the authority conferred by the Nevada Legislature to the State Engineer regarding "conjunctive management" as the State Engineer characterizes the term.

Orr did not concern federal reserved water rights. The court in *Orr* held that because the federal district court was the decree court for the Truckee River, it had jurisdiction over the Pyramid Lake Paiute Tribe's claim that a State Engineer ruling granting *new* groundwater applications adversely affected or conflicted with their decreed Truckee River rights. *Orr*, 600 F.3d at 1159-60. Like the *Cappaert* decision, the *Orr* decision did not address whether the State Engineer has the broad authority he claims in Order 1309. Demonstrably, none of the decisions cited by the State Engineer concerned the re-prioritization of existing (permitted and

certificated) water rights or involved multiple hydrographic basins such as in Order 1309.

Citing *Eureka County v. State Engineer*, 131 Nev. 846, 359 P.3d 1114 (2015), without the accountability of a pinpoint citation, the Appellants claim that the State Engineer "has a duty not to impair vested rights, and to protect senior rights and the public interest, when issuing ***and managing*** groundwater rights" and that "[t]his Court found that the State Engineer must ***manage*** groundwater pumping to protect senior surface water right holders (i.e., conjunctive management)." AOB 25 & n.107 (emphasis added); AOB 51-52 (emphasis added).

The word "manage" does not even appear in this Court's *Eureka County* decision. In contrast to the re-prioritization ("joint management") of Respondents' existing groundwater rights here, the "rights" at issue in *Eureka County* were pending, new "applications to appropriate water" and "applications to change the point of diversion, the place of use, and the manner of use of . . . existing water rights." 131 Nev. at 848, 359 P.3d at 1116. This Court focused on the lack of substantial evidence for the State Engineer's reliance on a yet-to-be-established mitigation plan based upon the language of NRS 533.370(2), which concerns approval or rejection of "applications" that conflict with existing rights, not the management of existing water rights. 131 Nev. at 850, 852-53, 855, 359 P.3d at 1117, 1118-19, 1120.

The actions of the State Engineer at issue in the *Pyramid Lake Paiute v. Washoe County* case involved intra- and inter-basin "transfer applications" regarding existing groundwater rights, applications for new water rights and consideration of "the public interest" as required by NRS 533.370(2). *Pyramid Lake Paiute Tribe of Indians v. Washoe County*, 112 Nev. 743, 918 P.3d 697 (1996). AOB 41 & n.172; AOB 42 & n.178. The Appellants' reliance on this case is misplaced because it involved applications for a new water appropriation or a new use of an existing water right that may conflict with existing rights, not an attempt by the State Engineer to engage in "conjunctive management" in the manner seen in Order 1309.

As discussed *supra*, the State Engineer has no statutory charge to protect endangered species, such as the Moapa dace, nor does his obligation to consider the public interest in approving or rejecting new applications to appropriate water, or applications to change the manner or place of use of existing water rights, equate to the expansive authority he seeks to engage in "conjunctive management" in the manner done so in Order 1309. Nevada's water right statutes do not permit reallocation of adjudicated rights when implementing the public trust doctrine. *Mineral County v. Lyon County*, 136 Nev. 503, 520, 473 P.3d 418, 431 (2020) (holding the public trust doctrine "requires that allocations of water rights have ***certainty and finality*** so that rights holders may effectively direct water usage to

its beneficial use, without undue uncertainty or waste.") (emphasis added). While the Appellants contend "water rights are 'subject to regulation for the public welfare,'" Order 1309 undermines the "certainty and finality" that Respondents and all water right holders rely upon. AOB 42 & n.177

Moreover, while this Court explained in *Mineral County* that our Legislature "has established a comprehensive statutory scheme regulating the procedures for acquiring, changing, and losing water rights in Nevada," 136 Nev. 503 at 513, 473 P.3d at 426, that is a far cry from authority for the State Engineer to "regulate" (here, manage/reprioritize) Respondents' existing water rights in the manner done so in Order 1309.

The Appellants have taken considerable license in expounding on the import of this Court's recent holding in *In re Determination of the Relative Rights in & to All Waters*, Docket No. 84275 (Unpublished Disposition) WL 1421434 (Order Dismissing Appeal, May 4, 2022). In that case, this Court determined an NRCP 54(b) certification was improper because "the legislature has determined that an appeal may be taken only from the district court's decree, and certification as to only part of the whole matter necessarily results in piecemeal litigation and is improper in adjudication cases." *Id*. at *2.

The Appellants claim that *Griffin v. Westergard*, 96 Nev. 627, 615 P.2d 235 (1980), demonstrates "before 1980, the State Engineer was engaging in what we

now call conjunctive management." AOB 52-53. Once again, *Griffin* involved new applications for additional permits to appropriate water in a singular basin, the grant of which would conflict with existing rights, not the creation of a new basin or the curtailment of existing water rights like Order 1309. *Griffin*, 96 Nev.at 630, 615 P.2d at 237. Likewise, *Pyramid Lake Paiute Tribe of Indians v. Ricci*, 126 Nev. 521, 245 P.3d 1145 (2010), also cited by Appellants (AOB at 53), involved a change application in a single hydrographic basin, and there was no management (curtailment) of existing rights. 126 Nev. at 523, 245 P.3d at 1146. Thus, none of the case law cited by the Appellants supports their arguments.

E. Appellants Have Existing Statutory Authority, the Muddy River Decree, and the MOA to Adequately Administer and Manage Surface and Groundwater.

The Legislature provided methods in the statutory scheme for the State Engineer to curtail, forfeit, designate, and manage an over-appropriated basin—and those provisions do not look like Order 1309. For example, the State Engineer may designate "as a critical management area any basin in which withdrawals of groundwater consistently exceed the perennial yield of the basin." NRS 534.110(7)(a). The designation of a basin is appealable. NRS 534.110(7).

Under the critical management area statute, once a basin has been designated for at least 10 years, the State Engineer is then required to order withdrawals be restricted unless a groundwater management plan has been

approved for that basin. *Id.* A groundwater management plan is developed by "a majority of the holders of permits or certificates to appropriate water in the basin" rather than by fiat of the State Engineer. NRS 534.037(1). Likewise, the State Engineer has the authority to order mandatory curtailment of water rights in a basin if he complies with NRS 534.110(6).

Moreover, once an area has been properly designated by the State Engineer under relevant statutory provisions, only then is the State Engineer authorized to "make such rules, regulations and orders as are deemed essential" for the designated basin or portion of a basin. NRS 534.120(1).

The State Engineer did not follow the statutory scheme for designating basins, initiating curtailment or declaring a basin a critical management area and allowing stakeholders to develop a management plan. The Legislature has given the State Engineer the tools to protect water supply in over-appropriated basins.[15] The expression of such authority excludes alternative methods not expressly adopted by the Legislature. *See Slade v. Caesars Entm't Corp.*, 132 Nev. 374, 380-81, 373 P.3d 74, 78 (2016) (citing Antonin Scalia & Bryan A. Garner, Reading Law: *The Interpretation of Legal Texts* 107 (2012) ("The expression of

[15] Notably, the State Engineer did not combine numerous hydrographic basins in Order 1329 establishing Interim Procedures in the Humboldt River Region to manage groundwater to prevent conflict with Humboldt River Decree surface rights. Thus, consolidating basins is not necessary for "conjunctive management."

one thing implies the exclusion of others.")). Rather than act within his statutory authority, the State Engineer re-framed and deviated from existing Nevada water law without Legislative mandate.

Likewise, Muddy River decree right holders are able to return to the Decree court to enforce their rights if groundwater pumping is allegedly diminishing their rights. *See e.g.*, NRS 533.450(1) (Any person feeling himself aggrieved by any order or decision of the State Engineer . . . when the order or decision relates to the administration of determined rights). No Muddy River decree right holder has initiated any action in the Decree court contending its rights have been diminished by any specific groundwater pumping in any of the subject seven groundwater basins.

Finally, the Appellants entirely dismiss the proactive steps certain water right holders have taken for the protection of the Moapa dace. On February 14, 2005, Lincoln and Vidler filed applications to appropriate groundwater in Kane Springs. *See* 3 JA 864, 864-65. The United States Department of the Interior, Fish and Wildlife Service ("USFWS") filed a protest contending that Kane Springs should be included in the 1169 Pump Tests. *See* 18 JA 8262, 8262-73. On August 1, 2006, Lincoln, Vidler, and USFWS entered into an Amended Stipulation for Withdrawal of Protests for Applications 72218, 72219, 72220 and 72221. *See id*. This stipulation set forth triggers acceptable to USFWS to reduce

Lincoln's and Vidler's groundwater pumping to protect the Moapa dace. *See id.* at 8271-72. Additionally, the USFWS stipulated groundwater pumping from Kane Springs subject to certain conditions such as direct payment of $50,000 to USFWS for the restoration of the Moapa dace habitat. *See id*. at 8269-73. Since 2006, Lincoln, Vidler, and USFWS have performed and continue to perform under the Amended Stipulation's terms.

Also in 2006, CSI, MVWD, USFWS, SNWA, and the Moapa Band of Paiutes, entered into a memorandum of agreement (the "MOA") adopting mitigation policies to support the Moapa dace while CSI developed the Community. *See* 5 JA 2928, 2928-53. The MOA included mitigation measures to reduce potential adverse effects on the Moapa dace and its habitat, *i.e.*, voluntary pumping reductions to maintain minimum instream flows to protect the Moapa dace, and financial payments by SNWA and CSI and CSI's relinquishment of 460 afa of its water rights to remain unpumped in the deep aquifer. *See id*. at 2935-39. Such obligations have been satisfied and the parties continue to work together under the MOA to promote the survival and recovery of the Moapa dace and its habitat. The MOA has no expiration date. *See id.* at 2928-53, 44 JA 17827, 17843. Thus, there are substantial existing protections in place for the Moapa dace, which the Appellants ignore.

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II. THE STATE ENGINEER VIOLATED THE RESPONDENTS' DUE PROCESS RIGHTS IN ISSUING ORDER 1309.

"Although proceedings before administrative agencies may be subject to more relaxed procedural and evidentiary rules, due process guarantees of fundamental fairness still apply." *Dutchess Bus. Serv.'s, Inc. v. Nev. State Bd. of Pharmacy*, 124 Nev. 701, 711, 191 P.3d 1159, 1166 (2008). "Administrative bodies must follow their established procedural guidelines and give notice to the defending party of 'the issues on which decision will turn and . . . the factual material on which the agency relies for decision so that he may rebut it.'" *Id.*

With respect to notice and hearing, Nevada law requires that "the notice will accurately reflect the subject matter to be addressed and that the hearing will allow full consideration of it." *Public Serv. Comm'n of Nev. v. Southwest Gas Corp.*, 99 Nev. 268, 271, 772 P.2d 624, 626 (1983). "Notice must be given at an appropriate stage in the proceedings to give parties meaningful input in the adjudication of their rights." *Eureka County v. Seventh Jud. Dist. Ct.*, 134 Nev. 275, 280-281, 417 P.3d 1121, 1125-26 (2018) (citing *Hamdi v. Rumsfeld*, 542 U.S. 507, 533 (2004)).

The Nevada Constitution protects against the deprivation of property without due process of law. Nev. Const. art 1, § 8(5). Water rights are regarded and protected as real property in Nevada. *Eureka County*, 134 Nev. at 279, 417 P.3d at 1124 (quoting *Application of Filippini*, 66 Nev. 17, 21-22, 202 P.2d 535, 537

(1949)). Respondents, as owners of existing water rights, are entitled to constitutional protection of their property rights, including procedural due process. *See id*. Here, the State Engineer violated the Respondents' due process rights.

A. The State Engineer's Notice and Hearing Procedure Failed to Satisfy the Requirements of Due Process.

The notice and hearing procedure employed by the State Engineer grossly failed to satisfy the requirements of due process. First, the State Engineer did not put the Respondents on notice that he would make management decisions for the seven basins at the conclusion of the 2019 hearing. Second, at the hearing, the parties were not afforded a full and complete opportunity to address the implications of the State Engineer's decision to subject the basins to "conjunctive management" and "joint administration". *See* 49 JA 23299, 23327-32.

Nothing in the notice and hearing procedure indicated the State Engineer would consider changing the boundaries of seven separate hydrographic basins (six previously designated), delineate them as a single hydrographic basin with one maximum quantity of groundwater that could be pumped from the single basin, or reprioritize the priority rights in the basins.

Notably, even if the State Engineer had given notice of these topics, the State Engineer expressly prevented the parties from addressing them at the hearing, which compounds the due process violation. *See*, *e.g.*, 2 JA 326, 390; 2 JA 703,

706 ("*This larger substantive policy determination is not part of the particular proceeding. That's part of later proceedings.*") (emphasis added); 2 JA 464, 464-484; 2 JA 486, 486-503; 44 JA 17357, 17359 (hearing officer stating that management decisions will be made in "subsequent decisions"); 43 JA 17198, 17198-17207 (Georgia Pacific and Republic Closing Argument, outlining policy questions for consideration by the State Engineer at later proceedings, proceedings that never took place); 2 JA 394, 406-07. The exclusion of these issues ensured that the State Engineer's decision was not based on a fully developed record.

The Appellants' arguments that the State Engineer afforded the Respondents due process in this case stem from their refusal to acknowledge the very obvious and fundamental fact that consolidating multiple basins as one is a management decision that reorders the priority rights of the Respondents' water rights. The State Engineer even acknowledged the Respondents' concerns that "***creating an administrative unit at this time inherently directs policy without providing for due process***." 2 JA 326, 378 (emphasis added). Staying true to form, the State Engineer summarily disregarded this concern without genuine consideration.

This Court must reject the Appellants' egregious mischaracterization of Order 1309. The Appellants' representations to this Court concerning the import of Order 1309 are false and belied by Order 1309's own language. The order effectuates a management scheme with far reaching consequences that create grave

uncertainty for Nevada water right holders. The State Engineer clearly violated Respondents' due process rights. The District Court should be affirmed.

B. The Respondents Did Not Have a Full and Complete Opportunity to Address the Implications of Order 1309.

The Appellants alarmingly characterize due process as "an elusive concept" which is incapable of being defined with precision and varies depending on "specific factual contexts". AOB 61. Apparently, due process is an "elusive concept" to the State Engineer because he sees no issue with noticing a hearing on a specific subject matter only to make a determination based on a standard that was not disclosed, discussed, nor assessed at the hearing. The State Engineer plainly did not comply with constitutional due process requirements in his Order 1303 proceedings.

The Appellants contend because the Order 1303 proceeding was "investigative" with a limited fact-finding objective, due process rights were not implicated and if any due process was required, the State Engineer provided notice and an opportunity to be heard that far exceeded the flexible, concept-specific demands of due process. AOB 18, 61-62. However, the State Engineer plainly acknowledged in the lower court that procedural due process is satisfied by "notice and an opportunity to be heard" citing *Wilson v. Pahrump Fair Water, LLC*, 137 Nev. 10, 17, 481 P.3d 853, 859 (2021). 47 JA 19773. The State Engineer

acknowledged that property interests were involved by deeming water right holders as "stakeholders" in the Interim Order 1303 proceedings and soliciting input and participation from "any stakeholder with interests that may be affected by water right development within the LWRFS" on the four topics listed in Interim Order 1303. 2 JA 394, 406. That the State Engineer's administrative record is large, that the hearing was long, and that the State Engineer issued a lengthy 66 page decision does not mean that the State Engineer complied with due process. *See* AOB at 62-63, 66-67.

The Appellants incorrectly apply the balancing test from *Mathews v. Eldridge* in their due process analysis. AOB 66. In *Mathews*, the Court weighed three factors to determine whether an evidentiary hearing was required prior to the termination of Social Security disability benefits. *Mathews v. Eldridge*, 424 U.S. 319, 349, 96 S.Ct. 893, 910, 47 L.2d. 2d 18, 58 (1976). The factors included the type of property interest at stake, "the risk of an erroneous deprivation of such interest through the procedures used," and the Government's interest in the procedural process it chose. *Id.* at 335, 96 S. Ct. at 903. These factors demonstrate that the State Engineer was required to afford the Respondents the opportunity to address the management decisions in Order 1309 during the 1303 Hearing.

First, the priority date of a water right is an essential component of the water right that cannot be stripped away without damaging the right itself. *Wilson v.*

Happy Creek, Inc., 135 Nev. 301, 312, 448 P.3d 1106, 1115 (2019). Moreover, "a loss of priority that renders rights useless 'certainly affects the rights' value' and 'can amount to a de facto loss of rights.'" *Andersen Family Assocs. v. Hugh Ricci, P.E.*, 124 Nev. 182, 190-91, 179 P.3d 1201, 1206 (2008). Respondents are entitled to constitutional due process protections when their water rights are involved because water rights are vested property rights. *Eureka Cty.*, 134 Nev. at 281, 417 P.3d at 1126.

Second, Respondents were entitled to give meaningful input in the adjudication of their rights and to be notified before the management and policy decisions were made by the State Engineer in Order 1309, even if the specific "how" and "who" of the State Engineer's management determination (curtailment specifics) is decided in a future proceeding. *Id*. at 280-281, 417 P.3d at 1125. By combining previously individual basins, which had relative priorities within their respective basins, into one large basin, the State Engineer changed the priority rights of all water right holders in those seven basins and put constitutionally protected property rights in jeopardy. By failing to disclose this intention or the criteria to be considered to address any property concerns, the procedures in place were wholly insufficient.

Finally, Respondents' property rights were certainly affected, and Respondents deprived of their priority interests through the insufficient procedures

used by the State Engineer in the Order 1303 proceedings. The government's interest in this particular procedure does not outweigh Respondents' loss of their property interests. The State Engineer unquestionably violated Respondents' due process rights in failing to provide notice or an opportunity to comment on the administrative policies inherent in the basin consolidation.

Appellants' citation to portions of the record in footnote 270 of their Opening Brief does not support their contention that "findings that relate to joint administration or conjunctive management were all within the scope of Interim Order 1303 and addressed by parties." AOB 70. All the citations in footnote 270 are to Order 1309 itself or the parties' witness and exhibit lists, closing statements and one rebuttal report addressing the four topics listed by the State Engineer in Interim Order 1303. Suspiciously, the citations to the record stop short of actual testimony and evidence in the proceeding showing that the parties addressed joint administration or conjunctive management.

C. The State Engineer's Nondisclosure of the Six Criteria He Used to Evaluate the Connectivity of the Basins and Determine the "New Consolidated Basin Boundary" Did Not Satisfy the Requirements of Due Process.

Appellants contend the District Court erred when it held that the State Engineer violated the Respondents' due process rights by not disclosing the criteria he used to evaluate hydrologic connection before the Order 1303 hearing. AOB

70. Just as Appellants' focus on conjunctive management undermines their argument that Order 1309 is simply a factual finding, their defense of due process in the use of these criteria depends on obscuring the distinction between factual conclusions and management decisions.

In Order 1309, the State Engineer disclosed for the first time six criteria he used to determine the basin boundary of the new consolidated basin. 2 JA 326, 372-73. Four of the six criteria depend on a comparison of water level data, primarily collected during the Order 1169 Pump Tests. Criteria numbers 5 and 6 are based on inferences of subsurface geologic structures based on surficial geologic maps.

Appellants contend Respondents had prior notice of these criteria because the State Engineer stated in Order 1309 he developed the six "new" criteria based on the considerations set forth in Rulings 6254-6261, which were based upon the 1169 Pump Tests, as the standard for determining the geographic boundary of the new basin. 2 JA 326, 372. Notably, criteria 4, 5, and 6 were not even referenced in Rulings 6254-6261.[16] Of course, the meaningful moment to disclose the

[16] It is not clear criteria 2 was explicitly discussed in Rulings 6254-6261. Moreover, criteria 4 would not apply to Rulings 6254-6261, and the State Engineer specifically relied on criteria 4 in Ruling 5712 to exclude Kane Springs from the new basin. Worse, it appears criteria 5 and 6 were created after the submission of evidence and after the hearing specifically to include Kane Springs and the revised portion of the Black Mountain Area into the new superbasin.

criteria was not *after* the Respondents' opportunity to present evidence ended. But, during the process that led to the issuance of Order 1309, none of the Respondents had access to the criteria the State Engineer ultimately used to determine the boundary of this new basin—the State Engineer identified the criteria for redrawing hydrographic basins for the first time when he issued Order 1309 based on the evidence presented at the hearing. This violated Respondents' due process rights because they were given no notice of nor any opportunity to address the State Engineer's criteria.

Several Respondents included detailed criticisms of the evidentiary value of the six criteria in their Petitions, arguing that the criteria failed to meet a standard of substantial evidence and thus were arbitrary and capricious and a violation of due process. *See, e.g.*, 1 JA 21, 41-42 (CSI Petition); 1 JA 141, 149-50 (Lincoln/Vidler Petition); 47 JA 19205, 19221-23 (GP-R Opening Brief). "Substantial evidence" is not at issue here; however, the State Engineer's untimely disclosure of the criteria plainly deprived Respondents of the "opportunity to offer a contrary presentation" and "meaningful input in the adjudication of their rights," given the *use* of the criteria to create a *management* unit. AOB 70 (citations omitted). The Appellants deliberately conflate "basin boundary" in a geologic sense with the "basin boundary" of the newly created administrative basin. *See, e.g.*, AOB 72. The two are not synonymous.

The United States Supreme Court has explained that "[a] party is entitled, of course, to know the issues on which decision will turn and to be apprised of the factual material on which the agency relies for decision so that he may rebut it." *Bowman Transp., Inc. v. Arkansas-Best Freight Sys., Inc.*, 419 U.S. 281, 288 n. 4 (1974). This Court has confirmed and reiterated the Supreme Court's discussion in *Bowman*: "[T]he Due Process Clause forbids an agency to use evidence in a way that forecloses an opportunity to offer a contrary presentation." *Eureka Cnty. v. State Engineer*, 131 Nev. 846, 855, 359 P.3d 1114, 1120 (2015) (citing and quoting *Bowman*, 419 U.S. 281, 288 n.4, with approval); *see also Eureka Cty. v. Seventh Jud. Dist. Ct.*, 134 Nev. at 280, 417 P.3d at 1125 ("It is equally fundamental that the right to notice and an opportunity to be heard must be granted at a meaningful time and in a meaningful manner." (quoting *Fuentes v. Shevin*, 407 U.S. 67, 80 (1972) (quotation marks and citations omitted))).

The Amended Notice ***only*** provided an opportunity for the parties that submitted Order 1303 reports to explain their positions and conclusions with respect to the four questions posed for consideration in Order 1303. *See* 2 JA 464, 464-84 (Notice); 2 JA 486, 487 (Amended Notice). These questions did not relate to management of the basins—"conjunctive or joint administration"—but

rather appeared related to factual inquiries. Thus, the State Engineer failed to notify the Respondents that management decisions would be made.

Thus, Order 1309 violates due process because it applies a standard that impacts Respondents' water rights after the presentation of evidence and after the hearing, thereby preventing Respondents from addressing the six criteria. Not only did the Notice and Amended Notice not adequately notify the parties that the State Engineer would enter a management decision, but the Hearing Officer consistently directed the parties to avoid the subject, compounding the due-process violation.

Had the State Engineer disclosed the six criteria during the Order 1303 proceedings, the participants would certainly have addressed the disparity between the directive to avoid management and policy discussion and the obvious purpose of the criteria to support a management decision. Participants would have required an opportunity to address the administrative ramifications of basin consolidation, or potentially could have dissuaded the State Engineer from this decision before engaging in the arbitrary policy proceedings that the parties had been led to believe would occur in due course.

By failing to disclose his criteria for joint administration, the State Engineer precluded the participants from providing input that would have allowed for the full consideration of the issue, an unquestionable violation of

their due process rights. Accordingly, this Court should affirm the District Court's Order.

CONCLUSION

Order 1309 is void as it is contrary to Nevada law and the prior appropriation doctrine. Moreover, the State Engineer violated the Respondents' due process rights in issuing Order 1309. Accordingly, the Respondents respectfully request that this Court affirm the District Court's Order.

Dated this 9th day of January, 2023.

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CERTIFICATE OF COMPLIANCE

1. I hereby certify that this Respondents' Joint Answering Brief complies with the formatting requirements of NRAP 32(a)(4), the typeface requirements of NRAP 32(a)(5), and the type style requirements of NRAP 32(a)(6) because:

This brief has been prepared in a proportionally spaced typeface using Microsoft Word 16 in 14 font and Times New Roman type.

2. I further certify that this brief complies with the page or type-volume limitations of NRAP 32(a)(7) because, excluding the parts of the brief exempted by NRAP 32(a)(7)(C), it is proportionately spaced, has a typeface of 14 points or more, and contains 13,891 words.

3. Finally, I hereby certify that I have read this brief, and to the best of my knowledge, information, and belief, it is not frivolous or interposed for any improper purpose. I further certify that this brief complies with all applicable Nevada Rules of Appellate Procedure, in particular NRAP 28(e)(1), which requires every assertion in the brief regarding matters in the record to be supported by a reference to the page and volume number, if any, of the transcript or appendix where the matter relied on is to be found. I understand that I may be

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subject to sanctions in the event that the accompanying brief is not in conformity with the requirements of the Nevada Rules of Appellate Procedure.

Dated this 9th day of January, 2023.

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CERTIFICATE OF SERVICE

I certify that on the 9th day of January 2023, I served a copy of **RESPONDENTS' JOINT ANSWERING BRIEF** upon all counsel of record:

_____BY MAIL: I placed a true copy thereof enclosed in a sealed envelope addressed as follows:

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ADDENDUM

INDEX

IN THE OFFICE OF THE STATE ENGINEER
OF THE STATE OF NEVADA

#1309

ORDER

DELINEATING THE LOWER WHITE RIVER FLOW SYSTEM HYDROGRAPHIC BASIN WITH THE KANE SPRINGS VALLEY BASIN (206), COYOTE SPRING VALLEY BASIN (210), A PORTION OF BLACK MOUNTAINS AREA BASIN (215), GARNET VALLEY BASIN (216), HIDDEN VALLEY BASIN (217), CALIFORNIA WASH BASIN (218), AND MUDDY RIVER SPRINGS AREA (AKA UPPER MOAPA VALLEY) BASIN (219) ESTABLISHED AS SUB-BASINS, ESTABLISHING A MAXIMUM ALLOWABLE PUMPING IN THE LOWER WHITE RIVER FLOW SYSTEM WITHIN CLARK AND LINCOLN COUNTIES, NEVADA, AND RESCINDING INTERIM ORDER 1303

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I. BACKGROUND OF THE ADMINISTRATION OF THE LOWER WHITE RIVER FLOW SYSTEM BASINS

WHEREAS, the State Engineer has actively managed and regulated the Coyote Spring Valley Hydrographic Basin (Coyote Spring Valley), Basin 210, since August 21, 1985; the Black Mountains Area Hydrographic Basin (Black Mountains Area), Basin 215, since November 22, 1989; the Garnet Valley Hydrographic Basin (Garnet Valley), Basin 216, since April 24, 1990; the Hidden Valley Hydrographic Basin (Hidden Valley), Basin 217, since April 24, 1990; the California Wash Hydrographic Basin (California Wash), Basin 218, since April 24, 1990; and the

Muddy River Springs Area Hydrographic Basin (Muddy River Springs Area), Basin 219, since July 14, 1971.[1]

WHEREAS, in 1984, the United States Department of Interior, Geological Survey (USGS), Water Services Division, proposed a ten-year investigation into carbonate-rock aquifers that underlay approximately 50,000 square miles of eastern and southern Nevada.[2] In 1985, a program for the study and testing of the carbonate-rock aquifer system of eastern and southern Nevada was authorized by the Nevada Legislature. In 1989, a report was published by the USGS summarizing the first phase of the study.[3] Included in the summary was a determination that:

> Large-scale development (sustained withdrawals) of water from the carbonate-rock aquifers would result in water-level declines and cause the depletion of large quantities of stored water. Ultimately, these declines would cause reductions in the flow of warm-water springs that discharge from the regional aquifers. Storage in other nearby aquifers also might be depleted, and water levels in those other aquifers could decline. In contrast, isolated smaller ground-water developments, or developments that withdraw ground water for only a short time, may result in water-level declines and springflow reductions of manageable or acceptable magnitude.
>
> Confidence in predictions of the effects of development, however, is low; and it will remain low until observations of the initial hydrologic results of development are analyzed. A strategy of staging developments gradually and adequately monitoring the resulting hydrologic conditions would provide information that eventually could be used to improve confidence in the predictions.[4]

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[1] *See* NSE Ex. 9, *Order 905*, Hearing on Interim Order 1303, official records of the Division of Water Resources. *See* NSE Ex. 8, *Order 1018*, Hearing on Interim Order 1303, official records of the Division of Water Resources. *See* NSE Ex. 5, *Order 1025*, Hearing on Interim Order 1303, official records of the Division of Water Resources. *See* NSE Ex. 6, *Order 1024*, Hearing on Interim Order 1303, official records of the Division of Water Resources. *See* NSE Ex. 4, *Order 1026*, Hearing on Interim Order 1303, official records of the Division of Water Resources. *See* NSE Ex. 7, *Order 1023*, Hearing on Interim Order 1303, official records of the Division of Water Resources; NSE Ex. 11, *Order 392*, Hearing on Interim Order 1303, official records of the Division of Water Resources.

[2] Memorandum dated August 3, 1984, from Terry Katzer, Nevada Office Chief, Water Resources Division, United States Department of Interior Geologic Survey, Carson City, Nevada to Members of the Carbonate Terrane Study.

[3] Michael D. Dettinger, *Distribution of Carbonate-Rock Aquifers in Southern Nevada and the Potential for their Development, Summary of Findings, 1985-1988*, Summary Report No. 1, U.S. Geological Survey, Department of Interior and Desert Research Institute, University of Nevada System, 1989, p. Forward. *See also* NSE Ex. 3, *Order 1169*, Hearing on Interim Order 1303, official records of the Division of Water Resources.

[4] *Id.*, p. 2.

WHEREAS, beginning in 1989 and through the early 2000s, numerous groundwater applications were filed in Coyote Spring Valley, Black Mountains Area, Garnet Valley, Hidden Valley, California Wash, and Muddy River Springs Area Hydrographic Basins seeking to appropriate more than 300,000 acre-feet annually (afa) of groundwater from the carbonate-rock aquifer underlying these basins.[5] The State Engineer held a hearing on July 12-20, 23-24, and August 31, 2001, for pending Applications 54055–54059, filed by Las Vegas Valley Water District (LVVWD) to appropriate 27,510 afa of water in Coyote Spring Valley.[6] The State Engineer conducted a hearing on Coyote Springs Investments LLC (CSI) Applications 63272–63276 on August 20-24, 27-28, 2001.[7]

WHEREAS, following the conclusions of these hearings, the State Engineer issued Order 1169 on March 8, 2002, requiring all pending applications in Coyote Spring Valley, Black Mountains Area, Garnet Valley, Hidden Valley, Muddy River Springs Area, and Lower Moapa Valley Hydrographic Basin (Basin 220), be held in abeyance pending an aquifer test of the carbonate-rock aquifer system to better determine whether the pending applications and future appropriations could be developed from the carbonate-rock aquifer.[8]

WHEREAS, in Order 1169, the State Engineer found that he did not believe that it was prudent to issue additional water rights to be pumped from the carbonate-rock aquifer until a significant portion of the then existing water rights were pumped for a substantial period of time to determine whether the pumping of those water rights would have a detrimental impact on existing water rights or the environment.[9]

WHEREAS, Order 1169 required that at least 50%, or 8,050 afa, of the water rights then currently permitted in Coyote Spring Valley be pumped for at least two consecutive years.[10] On April 18, 2002, the State Engineer added the California Wash to the Order 1169 aquifer test basins.[11]

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[5] *See* NSE Exs. 14–20, *Ruling 6254–Ruling 6260*, Hearing on Interim Order 1303, official records of the Division of Water Resources.
[6] *See* NSE Ex. 14.
[7] *Id.*
[8] *See* NSE Ex. 3.
[9] *Id.*
[10] *Id.*
[11] *See* State Engineer's Ruling 5115, dated April 18, 2002, official records of the Division of Water Resources.

WHEREAS, subsequent to the issuance of Order 1169, the United States Fish and Wildlife Service (USFWS) expressed concern that current groundwater pumping coupled with additional groundwater withdrawals in Coyote Spring Valley and California Wash may cause reduction of spring flow to the Warm Springs area, tributary thermal springs in the upper Muddy River, which serves as critical habitat to the Moapa dace (*Moapa corciacea*), an endemic fish species federally listed as endangered in 1967.[12] Due to these concerns, on April 20, 2006, the Southern Nevada Water Authority (SNWA), USFWS, CSI, the Moapa Band of Paiute Indians (MBOP) and the Moapa Valley Water District (MVWD) entered into a Memorandum of Agreement (MOA).[13]

WHEREAS, the MOA stated that all the parties shared "a common interest in the conservation and recovery of the Moapa dace and its habitat." The MOA established certain protections to the Moapa dace, including protocols relating to pumping from the regional carbonate-rock aquifer that may adversely impact spring flow to the dace habitat in the Warm Springs area. Specifically, the MOA identified conservation measures, which included protections for minimum instream flows in the Warm Springs area with trigger levels set at 3.2 cubic feet per second (cfs) at the Warm Springs West gage requiring initial action by the MOA parties, and the most stringent action required at a flow rate of 2.7 cfs.[14]

WHEREAS, the MBOP raised concerns that pumping 8,050 afa from the Coyote Spring Valley as part of the aquifer test would adversely impact the water resources at the Warm Springs area, and consequently the Moapa dace, and that the impacts would persist such that protective measures established in the MOA would be inadequate to protect the dace.[15] As a result, the Order 1169 study participants, which included the LVVWD, SNWA, CSI, Nevada Power Company,[16] MVWD, Dry Lake Water Company, LLC, Republic Environmental Technologies, Inc. (Republic),

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[12] USFWS, *Fish and Aquatic Conservation - Moapa dace*, https://bit.ly/moapadace (last accessed June 3, 2020). *See also* SNWA Ex. 8, p. 1-1.

[13] *See* NSE Ex. 236, *2006 Memorandum of Agreement between the Southern Nevada Water Authority, United States Fish and Wildlife Service, Coyote Springs Investment LLC, Moapa Band of Paiute Indians and Moapa Valley Water District*, Hearing on Interim Order 1303, official records of the Division of Water Resources.

[14] *Id.*

[15] *See* May 26, 2010, letter from Darren Daboda, Chairperson, Moapa Band of Paiutes, to Jason King, Nevada State Engineer, official records of the Division of Water Resources.

[16] Nevada Power Company, following the merger with Sierra Pacific Power Company and Sierra Pacific Resources subsequently began doing business as NV Energy. *See, e.g.*, NV Energy, *Company History*, https://bit.ly/NVEhistory (last accessed April 20, 2020).

Chemical Lime Company, Nevada Cogeneration Associates, and the MBOP, or their successors, agreed that even if the minimum 8,050 afa was not pumped, sufficient information would be obtained to inform future decisions relating to the study basins.[17]

WHEREAS, on November 15, 2010, the Order 1169 aquifer test began, whereby the study participants began reporting to the Nevada Division of Water Resources (Division) on a quarterly basis the amounts of water pumped from wells in the carbonate-rock and alluvial aquifers during the pendency of the aquifer test.

WHEREAS, on December 21, 2012, the State Engineer issued Order 1169A declaring the completion of the Order 1169 aquifer test to be December 31, 2012, after a period of 25½ months. The State Engineer provided the study participants the opportunity to file reports with the Division until June 28, 2013, to present information gained from the aquifer test in order to estimate water to support applications in the Order 1169 study basins.[18]

WHEREAS, during the Order 1169 aquifer test, an average of 5,290 acre-feet per year (afy) was pumped from carbonate-rock aquifer wells in Coyote Spring Valley, and a cumulative reported total of 14,535 afy of water was pumped throughout the Order 1169 study basins. Of this total, approximately 3,840 afy was pumped from the Muddy River Springs Area alluvial aquifer with the balance pumped from the carbonate-rock aquifer.[19]

WHEREAS, during the aquifer test, pumpage was measured and reported from 30 other wells in the Coyote Spring Valley, Muddy River Springs Area, Garnet Valley, California Wash, Black Mountains Area, and Lower Meadow Valley Wash Hydrographic Basin (Lower Meadow Valley Wash). Stream diversions from the Muddy River were reported, and measurements of the natural discharge of the Muddy River and from the Warm Springs area springs were collected daily. Water-level data were collected from a total of 79 monitoring and pumping wells within the Order 1169 study basins. All of the data collected during the aquifer test were made available to each of the study participants and the public.[20]

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[17] *See* July 1, 2010, letter from Jason King, Nevada State Engineer, to Order 1169 Study Participants, official records of the Division of Water Resources.
[18] *See* NSE Ex. 2, *Order 1169A*, Hearing on Interim Order 1303, official records of the Division of Water Resources.
[19] *See, e.g.*, NSE Ex. 1, Appendix B.
[20] *See* Division, *Water Use and Availability – Order 1169*, https://bit.ly/Order1169

WHEREAS, during the Order 1169 aquifer test, the resulting water-level decline encompassed 1,100 square miles and extended from southern Kane Springs Valley, northern Coyote Spring Valley through the Muddy River Springs Area, Hidden Valley, Garnet Valley, California Wash, and the northwestern portion of the Black Mountains Area.[21] The water-level decline was estimated to be 1 to 1.6 feet throughout this area with minor drawdowns of 0.5 foot or less in the northern portion of Coyote Spring Valley north of the Kane Springs Wash fault zone.[22]

WHEREAS, results of the two-year aquifer test demonstrated that pumping 5,290 afa from the carbonate-rock aquifer in Coyote Spring Valley, in addition to the other carbonate-rock aquifer pumping in Garnet Valley, Muddy River Springs Area, California Wash and the northwest portion of the Black Mountains Area, caused sharp declines in groundwater levels and flows in the Pederson and Pederson East springs, two springs considered to be sentinel springs for the overall condition of the Muddy River due to being higher in altitude than other Muddy River source springs, and therefore are proportionally more affected by a decline in groundwater level in the carbonate-rock aquifer.[23] The Pederson spring flow decreased from 0.22 cfs to 0.08 cfs and the Pederson East spring flow decreased from 0.12 cfs to 0.08 cfs. Additional headwater springs at lower altitude, the Baldwin and Jones springs, declined approximately 4% in spring flow during the test.[24] All of the headwater springs contribute to the decreed and fully-appropriated Muddy River and are the predominant source of water that supplies the habitat of the endangered Moapa dace.

WHEREAS, Order 1169A provided the study participants an opportunity to submit reports addressing three specific questions presented by the State Engineer: (1) what information was obtained from the study/pumping test; (2) what were the impacts of pumping under the pumping test; and, (3) what is the availability of additional water resources to support the pending applications. SNWA, USFWS, National Park Service (NPS) and Bureau of Land Management

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[21] USFWS Ex. 5, *Report in Response to Order 1303*, Hearing on Interim Order 1303, official records of the Division of Water Resources, pp. 21, 67. *See, e.g.*, NSE Ex. 14. *See also* NSE Ex. 256, *Federal Bureaus Order 1169A Report*, Hearing on Interim Order 1303, official records of the Division of Water Resources. There was no groundwater pumping in Hidden Valley, but effects were still observed in the Hidden Valley monitor well.

[22] *See, e.g.*, NSE Ex. 14. *See also* NSE Ex. 256.

[23] *See* NSE Ex. No. 236.

[24] NSE Ex. 256, pp. 43–46, 50–51. *See also,* USGS, *Water Data for Nevada,* https://bit.ly/nvwater.

(BLM), MBOP, MVWD, CSI, Great Basin Water Network (GBWN) and Center for Biological Diversity (CBD) submitted either reports or letters.

WHEREAS, in its report, SNWA addressed water levels throughout the Order 1169 basins. SNWA acknowledged that hydrologic connectivity supported the potential need for redistribution of existing pumping, and indirectly acknowledged the limitation on availability of water to satisfy the pending applications.[25] SNWA further acknowledged declines to spring flow in the Pederson and Pederson East springs as a result of the aquifer test, but characterized the decline in spring flow at the Warm Springs West location as minimal. SNWA further correlated the declining trends as associated with climate but opined that Muddy River flow did not decline as a result of the aquifer test and carbonate-rock aquifer pumping; rather, impact to Muddy River flows were due to alluvial aquifer pumping.[26]

WHEREAS, CSI, through a letter, agreed with SNWA's report and asserted that additional water resources could be developed within the Coyote Spring Valley north of the Kane Springs Fault, which supported granting new appropriations of water.[27]

WHEREAS, the United States Department of Interior Bureaus (USFWS, NPS and BLM) concluded that the aquifer test provided sufficient data to determine the effects of the aquifer drawdown as well as identify drawdown throughout the region and was sufficient to project future pumping effects on spring flow. Based upon their analysis, the Department of Interior Bureaus concluded that water-level declines due to the aquifer test encompassed 1,100 square miles throughout the Order 1169 study basins. Additionally, the Department of Interior Bureaus' analysis found a direct correlation between the aquifer test pumping and flow declines at Pederson, Plummer and Apcar units and Baldwin Spring, all springs critical to the Moapa dace habitat, and asserted that pumping at the Order 1169 rate at well MX-5 in Coyote Spring Valley could result in both of the high-altitude Pederson and Pederson East springs going dry in 3 years or less.[28]

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[25] *See* NSE Ex. 245, *Southern Nevada Water Authority Order 1169 Report*, Hearing on Interim Order 1303, official records of the Division of Water Resources, pp. 23–25.
[26] *Id.*
[27] NSE Ex. 247, *Coyote Springs Investments, LLC Order 1169 Report,* Hearing on Interim Order 1303, official records of the Division of Water Resources.
[28] *See, e.g.*, NSE Ex. 14, pp.15–18. *See also* NSE Ex. 256.

WHEREAS, the Department of Interior Bureaus further found that the groundwater withdrawals that occurred in Coyote Spring Valley during the Order 1169 aquifer test represented approximately one-third of the then existing water rights within Coyote Spring Valley, concluding that even one-third of the existing water rights could not be developed without adversely impacting spring flow to the headwaters of the Muddy River and habitat for the Moapa dace.[29] Ultimately, the Department of Interior Bureaus concluded that there was insufficient water available for the pending applications, and that the area that was subject to the Order 1169 aquifer test behaved as one connected aquifer and pumping in one basin would have similar effects on the whole aquifer.[30]

WHEREAS, MBOP's report disagreed with the magnitude of drawdown resulting from the Order 1169 aquifer test, but ultimately concluded carbonate-rock aquifer pumping in Coyote Spring Valley and the Muddy River Springs Area would have a one-to-one impact on Muddy River flows.[31] MBOP opined to the existence of a southern flow field, which included California Wash, Hidden Valley, Garnet Valley, and the northwest portion of the Black Mountains Area, that could be developed without depleting spring flows. MBOP also argued that changes in the groundwater levels were directly tied to water level declines in Lake Mead.[32]

WHEREAS, MVWD's report was limited to water levels and flows within the Muddy River Springs Area. In its report, MVWD acknowledged the groundwater level declines resulting from the aquifer test, including decreased spring flow at the Pederson springs, Warm Springs West gage and Baldwin Spring, but not at Jones Spring or Muddy Spring.[33] Ultimately, MVWD concluded that additional water was available in the Lower Moapa Valley, as that aquifer did not appear hydrologically connected to the regional carbonate-rock aquifer.

WHEREAS, GBWN presented a report that recognized the decline in the groundwater levels in Coyote Spring Valley and discharge to the Muddy River Springs Area resulting from the

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[29] *Id.*
[30] *Id.*
[31] *See* NSE Ex. 252, *Moapa Band of Paiute Indians Order 1169 Report*, Hearing on Interim Order 1303, official records of the Division of Water Resources, p. 25.
[32] *Id.*
[33] NSE Ex. 250, *Moapa Valley Water District Basin 220 Well Site Analysis*, Hearing on Interim Order 1303, official records of the Division of Water Resources; NSE Ex. 251, *Moapa Valley Water District Evaluation of MX-5 Pumping Test on Springs and Wells in the Muddy Springs Area,* dated June 24, 2013, Hearing on Interim Order 1303, official records of the Division of Water Resources.

aquifer test.[34] However, GBWN believed that the aquifer test failed to provide sufficient data to determine water availability throughout the other study basins. GBWN did assert that pumping of existing rights within all of the study basins would unacceptably decrease spring discharge.[35]

WHEREAS, CBD, relying on GBWN's technical report, opined that pumping existing water rights within the Order 1169 study basins would result in unacceptable decline in spring flow, ultimately threatening the Moapa dace and the habitat necessary for the species survival.[36]

WHEREAS, based upon the findings of the Order 1169 aquifer test, in denying the pending applications the State Engineer found: (1) that the information obtained from the Order 1169 aquifer test was sufficient to document the effects of pumping from the carbonate-rock aquifer on groundwater levels and spring flow and that the information could assist in forming opinions regarding future impacts of groundwater pumping and availability of groundwater in the study basins; (2) that the impacts of aquifer test pumping in Coyote Spring Valley was widespread throughout the Order 1169 aquifer test study basins and that the additional pumping in Coyote Spring Valley was a significant contributor to the decline in the springs that serve as the headwaters of the Muddy River and habitat for the Moapa dace; and, (3) that additional pumping from the then pending applications would result in significant regional water-level decline, and decreases in spring and Muddy River flows.[37]

WHEREAS, the basins that were included in the Order 1169 aquifer test were acknowledged to have a unique hydrologic connection and share the same supply of water.[38] The State Engineer further went on to find that the total annual supply to the basins could not be more than 50,000 acre-feet, that the perennial yield is much less than that because the Muddy River and the springs in the Warm Springs area utilize the same supply, and that the quantity and location of

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[34] NSE Ex. 246, *Great Basin Water Network Order 1169 Report*, Hearing on Interim Order 1303, official records of the Division of Water Resources.
[35] *Id.*
[36] NSE Ex. 248, *Center for Biological Diversity Order 1169 Report*, Hearing on Interim Order 1303, official records of the Division of Water Resources.
[37] NSE Exs. 14–21. The study basins include Coyote Spring Valley, Garnet Valley, Hidden Valley, Muddy River Springs Area, California Wash, and that portion of the Black Mountains Area lying within the LWRFS was defined as those portions of Sections 29, 30, 31, 32, and 33, T.18S., R.64E., M.D.B.&M.; Section 13 and those portions of Sections 1, 11, 12, and 14, T.19S., R.63E., M.D.B.&M.; Sections 5, 7, 8, 16, 17, and 18 and those portions of Sections 4, 6, 9, 10, and 15, T.19S., R.64E., M.D.B.&M.
[38] *See, e.g.*, NSE Ex. 14, p. 24.

any groundwater that could be developed without conflicting with senior rights on the Muddy River and the springs was uncertain.[39]

II. INTERIM ORDER 1303

WHEREAS, on January 11, 2019, the State Engineer issued Interim Order 1303 designating the Lower White River Flow System (LWRFS), a multi-basin area known to share a close hydrologic connection, as a joint administrative unit for purposes of administration of water rights. The Interim Order defined the LWRFS to consist of the Coyote Spring Valley, Muddy River Springs Area, California Wash, Hidden Valley, Garnet Valley, and the portion of the Black Mountains Area Hydrographic Basins as described in the Interim Order.[40] Pursuant to Interim Order 1303, all water rights within the LWRFS were to be administered based upon their respective dates of priority in relation to other rights within the regional groundwater unit.

WHEREAS Interim Order 1303 recognized the need for further analysis of the LWRFS because the pre-development discharge of 34,000 acre-feet of the Muddy River system plus the more than 38,000 acre-feet of existing groundwater appropriations within the LWRFS greatly exceed the total water budget, which was determined to be less than 50,000 acre-feet.[41] Stakeholders with interests in water right development within the LWRFS were invited to file a report with the Office of the State Engineer addressing four specific matters, generally summarized as: 1) The geographic boundary of the LWRFS, 2) aquifer recovery subsequent to the Order 1169 aquifer test, 3) the long-term annual quantity and location of groundwater that may be pumped from the LWRFS, and 4) the effect of movement of water rights between alluvial and carbonate wells within the LWRFS. Stakeholders were also invited to address any other matter believed to be relevant to the State Engineer's analysis.

WHEREAS, on May 13, 2019, the State Engineer amended Interim Order 1303 modifying the deadlines for the submission of reports and rebuttal reports by interested stakeholders. Reports

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[39] *Id.*
[40] *See* NSE Ex. 1, *Order 1303 and Addendum to Interim Order 1303*, Hearing on Interim Order 1303, official records of the Division of Water Resources.
[41] *Id.*, p. 7.

submitted by interested stakeholders were intended to aid in the fact-finding goals of the Division.[42]

WHEREAS, a public hearing was held in Carson City, Nevada between, September 23, 2019, and October 4, 2019. The purposes of this hearing were to afford stakeholder participants who submitted reports pursuant to the solicitation in Interim Order 1303 an opportunity to provide testimony on the scientific data analysis regarding the five topics within the Interim Order and to test the conclusions offered by other stakeholder participants.

WHEREAS, during the Interim Order 1303 hearing, testimony was provided by expert witnesses for the participants CSI, USFWS, NPS, MBOP, SNWA and LVVWD[43], MVWD, Lincoln County Water District and Vidler Water Company (LC-V), City of North Las Vegas (CNLV), CBD, Georgia Pacific Corporation (Georgia Pacific) and Republic, Nevada Cogeneration Associates Nos. 1 and 2 (collectively "NCA"), Muddy Valley Irrigation Company (MVIC), Western Elite Environmental, Inc. and Bedroc Limited, LLC (collectively "Bedroc"), and NV Energy.

WHEREAS, following the conclusion of the Interim Order 1303 hearing, stakeholder participants were permitted to submit written closing statements no later than December 3, 2019. The specific area evaluated, data analyzed, and methodology used varied by participant. Generally, participants relied on spring and streamflow discharge, groundwater level measurements, geologic and geophysical information, pumping data, climate data, and interpretations of aquifer hydraulics. Methodologies applied ranged from conceptual observations to statistical analysis to numerical and analytical models; the level of complexity and uncertainty differing for each.

WHEREAS, each of the participants' conclusions with respect to the topics set forth in Interim Order 1303 are summarized as follows:

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[42] *Id.*, pp. 16–17.

[43] SNWA is a regional water authority with seven water and wastewater agencies, one of which is LVVWD. References to SNWA include its member agency, LVVWD, which too retains water rights and interests within the LWRFS.

Center for Biological Diversity

The primary concern of the CBD was to ensure adequate habitat for the survival and recovery of the Moapa dace. CBD felt "that the Endangered Species Act is the primary limiting factor on the overall quantity of allowable pumping within the [LWRFS] and thus [...] geared [the] analysis toward that goal of protecting the dace." The Moapa dace primarily resides in the springs and pools of the Muddy River; protecting those areas of habitat are of the utmost importance to CBD's goal and have the collateral benefit of protecting the Muddy River decreed rights. Furthermore, CBD "believe[d] that withdrawals from the carbonate aquifer that cause a reduction in habitat quantity for the dace are a take under the Endangered Species Act and thus prohibited."[44]

CBD urges that Kane Springs Valley Hydrographic Basin (Kane Springs Valley) be included and managed as part of the LWRFS; otherwise CBD did not dispute the boundary as presented in Interim Order 1303. The inclusion of Kane Springs Valley was based on a shallow hydraulic gradient between Coyote Spring Valley and Kane Springs Valley; propagation of water level decline into Kane Springs Valley during the Order 1169 aquifer test; and a finding that the carbonate-rock aquifer extends into Kane Springs Valley. In CBD's opinion, adequate management of the LWRFS does not require that the administrative boundary include the White River Flow System north of Coyote Spring Valley.[45]

CBD identified a long-term, declining trend commencing in the 1990s in carbonate-rock aquifer water levels within the Muddy River Springs Area, which was accelerated by the Order 1169 aquifer test. Although CBD observed a partial, immediate recovery in the carbonate-rock aquifer water levels and spring flows, CBD finds that full recovery to pre-Order 1169 aquifer test conditions were never realized. Concurring with multiple other participants, CBD identified higher water levels in response to wet years despite the continued decline in the overall trend in the hydrographs. However, with regards to long-term drought, in their review of the Climate Division Data for southern Nevada, CBD saw no indication of a 20-year drought and disagreed with the conclusions and analysis presented by MBOP. Decreased spring flows in conjunction with

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[44] *See* CBD Ex. 3, *CBD Order 1303 Report by Dr. Tom Myers; 27 pp.*, Hearing on Interim Order 1303, official records of the Division of Water Resources, p. 1; Transcript 1504–1505.
[45] *See* CBD Ex. 3, pp. 1, 2, 12, 17, 19; *See* CBD Ex. 4, *CBD Order 1303 Rebuttal in Response to Stakeholder Reports by Dr. Tom Myers; 30 pp.*, Hearing on Interim Order 1303, official records of the Division of Water Resources, pp. 17–21; Tr. 1516; 1520–1521; 1526–1527; 1538–1539; CSI Ex. 2, p. 38; LC-V Ex. 2, pp. 11–14.

increased carbonate-rock aquifer pumping, led the CBD to infer the dependency of spring flows on carbonate-rock aquifer water supply.[46]

Again, with emphasis on protecting spring flows, and thus the Moapa dace habitat, CBD did not support any pumping of the carbonate-rock aquifer. CBD's desired outcome would be to avoid decreases in spring flow in the Warm Springs area attributed to continued carbonate-rock aquifer pumping. CBD postulated that surface water rights on the Muddy River will be protected by limiting carbonate-rock aquifer pumping.

Alternatively, CBD speculated that some alluvial aquifer pumping, within the Muddy River Springs Area and Coyote Spring Valley, could be sustained without significantly impacting the Warm Springs area. A preliminary estimate of 4,000 afa of sustainable alluvial aquifer pumping was proposed, based on the existing pumping within the Muddy River Springs Area and considering pumping in the 1990s near 5,000 afa when alluvial aquifer water levels were stable.[47]

Church of Jesus Christ of Latter-day Saints

The Church of Jesus Christ of Latter-day Saints (the Church) chose not to directly participate in the hearing but joined the evidentiary submissions of CNLV.[48] In response to the directives set forth in Interim Order 1303 and considering the testimony provided, the Church requests the continued administration and management of the LWRFS as identified in Interim Order 1303, and to allow for change applications throughout the LWRFS basins that move pumping of groundwater further away from the Muddy River Springs Area and from the alluvial aquifer to the carbonate-rock aquifer. The Church further requests that the testimony and recommendation of Dwight Smith, PE, PG on behalf of CNLV be considered and adopted.[49]

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[46] *See* CBD Ex. 3, pp. 1, 24; *See* CBD Ex. 4, p. 8–10, 21–25; Tr. 1508–1525; LC-V Ex. 2, p. 12, GP-REP Ex. 2, p. 3; CBD's expert suggest that the Palmer Drought Severity Index is more robust to evaluate for drought rather than using precipitation.
[47] *See* CBD Ex. 3, pp. 20–26; *See* CBD Ex. 4, p. 28–29; Tr. 1525-1528.
[48] *See* Letter from the Church, received August 15, 2019, Hearing on Interim Order 1303, official records of the Division of Water Resources.
[49] *See Closing Brief of the Church of Jesus Christ of Latter-Day Saints* (Church closing), Hearing on Interim Order 1303, official records of the Division of Water Resources.

City of North Las Vegas

In CNLV's report submissions and closing statement it addressed four questions set forth in Interim Order 1303.[50] CNLV generally urges for more analysis and study of the LWRFS before administrative decisions are made due to lack of agreement on fundamental interpretations of the water availability and basin connectivity. It was agreed to by CNLV that most of Garnet Valley and a small portion of the Black Mountains area were within the larger carbonate-rock aquifer underlying the LWRFS basins, but that there is uncertainty in the boundaries of Garnet Valley with California Wash and Las Vegas Valley Hydrographic Basin (Las Vegas Valley).[51] With respect to the recovery of the groundwater aquifer following the Order 1169 aquifer test, CNLV concluded that the record and evidence demonstrates a long-term declining trend in the groundwater level since the late 1990s and that pumping responses can propagate relatively quickly through the carbonate-rock aquifer and drawdown is directly related to the pumping.[52]

While CNLV did consider the long-term quantity of groundwater that may be developed without adversely impacting discharge to the Warm Springs area, its opinions were limited to the sustainability of pumping within Garnet Valley.[53] CNLV concluded that the safe yield concept should be applied to the management of pumping within the LWRFS and that pumping between 1,500 afa to 2,000 afa does not appear to be causing regional drawdown within the LWRFS carbonate-rock aquifer and that pumping this quantity of water may be sustainable within the APEX Industrial Park area of Garnet Valley.[54] Finally, CNLV asserted that movement of alluvial water rights from the Muddy River Springs Area along the Muddy River would reduce the capture

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[50] *See* CNLV Ex. 5, *City of North Las Vegas Utilities Department: Interim Order 1303 Report Submittal from the City of North Las Vegas – July 2, 2019*, Hearing on Interim Order 1303, official records of the Division of Water Resources. *See* CNLV Ex. 6, *Rebuttal Document submitted on behalf of the City of North Las Vegas, to Interim Order 1303 Report Submittals of July 3, 2019 – Prepared by Interflow Hydrology – August 2019*, Hearing on Interim Order 1303, official records of the Division of Water Resources. *See* Tr. 1416–66, and *City of North Las Vegas' Closing Statement* (CNLV Closing), Hearing on Interim Order 1303, official records of the Division of Water Resources.

[51] *See* CNLV Ex. 5, pp. 2–3. *See also* CNLV Ex. 3, *Garnet Valley Groundwater Pumping Review for APEX Industrial Complex, City of North Las Vegas, Clark County, Nevada- Prepared by Interflow Hydrology, Inc.- July 2019*, pp. 7–8, 38.

[52] *Id.*, p. 3, Technical Memo, pp. 14–16.

[53] *Id.*, pp. 3–4.

[54] *Id.*, p. 4., Technical Memo, p. 45.

of Muddy River flow, move more senior water rights into Garnet Valley to support a secure water supply for the municipal uses within the APEX area, and would support overall objectives relating to the management of the LWRFS.[55] CNLV advocated that transferring water rights between alluvial aquifer and carbonate-rock aquifer should be considered on a case-by-case basis with consideration given as to location, duration, and magnitude of pumping.[56]

CNLV disagreed with certain conclusions of the NPS relating to the inclusion of the entirety of the Black Mountains Area within the LWRFS boundaries and had concerns relating to the reliability of the Tetra Tech model for future water resource management within the LWRFS.[57] CNLV further disagreed with stakeholder conclusions that movement of groundwater withdrawals from the alluvial aquifer along the Muddy River to the carbonate-rock aquifer in Garnet Valley will not alleviate the conflicts to Muddy River flow, rather concluding that there may be benefits for overall management of the LWRFS.[58] Further, CNLV disagreed with certain findings regarding water flow through the carbonate-rock aquifer, finding that it is likely that some groundwater can be pumped within Garnet Valley without capturing groundwater that would otherwise discharge to the Warm Springs area and the Muddy River.[59] Finally, in its rebuttal the CNLV joined other stakeholders in supporting the conclusion that there is a quantity of water that may be sustainably developed within the LWRFS and that use of carbonate-rock aquifer groundwater in Garnet Valley is critical to the short-term and long-term management and development of the APEX Industrial Complex.[60]

Coyote Springs Investments

In presenting its opinions and conclusions CSI's focus was primarily on climate as the foundation for groundwater elevation declines after the Order 1169 aquifer test, and additional geophysical research that provided evidence of a structural block isolating the west side of Coyote Spring Valley.

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[55] *Id.*, Technical Memo, p. 48–49.
[56] *Id.*
[57] *See* CNLV Ex. 6, pp. 1–2.
[58] *Id.*, p. 2.
[59] *Id.*, pp. 2–3.
[60] *Id.*, p. 3.

CSI did a statistical analysis of climate data, and determined from the results that 1998, 2004, 2005, and 2010 were wetter than normal, with a drying trend from 2006 to 2017.[61] The Order 1169 aquifer test took place toward the end of an extended dry period when all water resources throughout the LWRFS were negatively affected.[62] Additionally, annual cyclical patterns of groundwater pumping should not be confused with long-term climate variability.[63]

CSI challenged the basic assumption that the LWRFS, as proposed in Interim Order 1303, is a homogenous unit.[64] CSI could not duplicate the results of the SeriesSEE, and its own Theis solution modeling concluded that a greater impact occurred from pumping at a well closer in proximity to Pederson Spring than pumping from a well further away, or the combined effect of both wells.[65] CSI also acknowledged that due to the fragmented nature of the LWRFS, the Theis solution is of limited utility.[66]

CSI presented geologic and geophysical information in support of the idea that the LWRFS administrative unit is a geophysically and hydrogeologically heterogenous area, characterized by multiple flow paths defined by faults and structural elements that control the occurrence and movement of regional and local groundwater along the western side of Coyote Spring Valley, the eastern side of Coyote Spring Valley, and from Lower Meadow Valley Wash into the LWRFS.[67] CSI stated that the LWRFS does not include Kane Springs Valley.[68]

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[61] CSI Ex. 1, *CSI July 3, 2019 Order 1303 Report*, Hearing on Interim Order 1303, official records of the Division of Water Resources, pp. 4–5; Tr. 53.
[62] CSI Ex. 1, p. 5.
[63] CSI Ex. 2, *CSI August 16, 2019 Rebuttal Report*, Hearing on Interim Order 1303, official records of the Division of Water Resources, pp. 2, 7.
[64] CSI Ex. 1, p. 7.
[65] CSI Ex. 1, p. 7; Tr. 131–132.
[66] Tr. 154.
[67] CSI Ex. 2, p. 2; *CSI Closing Statement* (CSI Closing), Hearing on Interim Order 1303, official records of the Division of Water Resources; CSI recommended including Lower Meadow Valley Wash in its Rebuttal report. See CSI Ex. 2, p. 12; Mr. Herrema said Lower Moapa Valley, but the report said Lower Meadow Valley 10:10.
[68] CSI Ex. 1, p. 15; the outflow from Kane Springs Valley is included in the water budget, but due to isolating geologic features, groundwater elevations in Kane Springs Valley are not impacted by pumping in the LWRFS, Tr. 135:7–137:3, 160:2–12.

CSI engaged a geophysicist to conduct a CSAMT survey at multiple points in the valley.[69] CSI's CSAMT study showed evidence of a prominent carbonate block bounded on either side by normal faults.[70] CIS asserts that the carbonate block isolates recharge from the zone west of the block, such that it eliminates or limits contribution of local recharge to the Warm Springs area.[71] Faulting has created a preferred path for groundwater flow "from the east side Coyote Spring Valley to the Muddy River Springs Area".[72]

CSI relied on a water budget as the best method to determine available water in the LWRFS, accounting for recharge and subsurface flow as well as climatic variations.[73] Comparing several models of recharge, CSI estimated recharge at 5,280 afy from the Sheep Range to the western side of Coyote Spring Valley.[74] CSI stated that 30,630 afa can be pumped from the LWRFS, but there would be impacts from pumping the water, and that the Coyote Spring Valley can sustain 5,280 afa of pumping from the western side without impact to the Warm Springs area or the Muddy River.[75]

As asserted by CSI, groundwater pumping from the carbonate-rock aquifer in the Muddy River Springs Area affects flow in the carbonate-rock aquifer to the alluvial aquifer, which then affects flow from the alluvial aquifer to the Muddy River.[76] CSI argues that effects are dependent on well location, geologic formations, hydraulic gradients, and elevation.[77] Transfers between carbonate and alluvial pumping should be made on a case-by-case basis, analyzing place of use, points of diversion, and quantity of groundwater.[78] Movement of water rights between alluvial wells and carbonate-rock aquifer wells will only serve to shift the timing and location of impacts and not the amount of the impact.[79]

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[69] CSI Ex. 1, p. 25
[70] CSI Ex. 1, p. 25.
[71] CSI Ex. 1, p. 29; evidence of impermeability, Tr. 181.
[72] CSI Ex. 1, p. 29.
[73]CSI Closing.
[74] CSI Ex. 1, pp. 31–40.
[75] Tr. 221–223; CSI Closing, pp. 8–9.
[76] CSI Closing.
[77] CSI Closing, p. 19.
[78] CSI Closing.
[79] CSI Ex. 1, p. 58.

As a consequence of the heterogenous nature of the LWRFS, CSI recommended sustainable management of the LWRFS through the creation of "Management Areas" that recognize flow paths and their relative contributions to spring flow, surface flow, evapotranspiration, and sub-surface outflow.[80] For example, though pumping in the Muddy River Springs Area near the Warm Springs area would have a direct impact on available surface water resources, structural blocks and faults isolate the effect of groundwater pumping in other areas of the LWRFS.[81] Thus CSI does not recommend a blanket ban on carbonate-rock aquifer pumping, or a decrease in carbonate-rock aquifer pumping in exchange for alluvial aquifer pumping.

Georgia Pacific and Republic

Dry Lake Water, LLC, Georgia Pacific and Republic submitted initial and rebuttal responses to Interim Order 1303 and offered testimony during the hearing.[82] In their response, Georgia Pacific and Republic acknowledged impacts to groundwater elevations throughout the LWRFS, including wells in the Black Mountains Area and Garnet Valley, which does demonstrate a degree of hydraulic connectivity throughout the carbonate-rock aquifer. However, Georgia Pacific and Republic called for collection of more scientific evidence to further understand the LWRFS and its boundaries. Further, it was their opinion that climate, seasonal fluxes and pumping within Garnet Valley and the Black Mountains Area resulted in the groundwater declines observed during the Order 1169 aquifer test.[83] Ultimately, Georgia Pacific and Republic do not believe sufficient information exists to draw distinct conclusions as to the cause of the groundwater declines during the Order 1169 aquifer test and whether carbonate-rock aquifer pumping within

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[80] CSI Closing.
[81] CSI Ex. 2, p. 17.
[82] The initial response was submitted on behalf of Dry Lake Water, LLC, Georgia Pacific, and Republic. *See* GP-REP Ex. 1, *Broadbent July 2, 2019 Initial Report*, Hearing on Interim Order 1303, official records of the Division of Water Resources. The rebuttal response was submitted on behalf of Dry Lake Water, LLC, Georgia Pacific Gypsum LLC, and Republic. *See* GP-REP Ex. 2, *Broadbent August 16, 2019 Rebuttal Report*, Hearing on Interim Order 1303, official records of the Division of Water Resources. However, the expert only appeared at the Hearing on Interim Order 1303 on behalf of Georgia Pacific and Republic. *See* Tr. 1588-91.
[83] *See* GP-REP Ex. 01, GP-REP Ex. 02, and *Closing Argument of Georgia Pacific Corporation and Republic Environmental Technologies, Inc.* (Closing GP-REP), Hearing on Interim Order 1303, official records of the Division of Water Resources.

the Garnet Valley and the Black Mountains Area has a measurable impact to spring flow in the Warm Springs area.[84]

Great Basin Water Network

GBWN elected to pose procedural suggestions relating to public involvement, availability of documents and data, transparency, and decision making, and did not submit a report with an independent analysis addressing the questions in Interim Order 1303.[85] GBWN advocates for sustainable management of the entirety of the White River Flow System as one unit based on the interconnected nature of all of the hydrologically connected basins, although no analysis to support which areas this would include was provided. GBWN relies on conclusory statements to establish the interconnected nature of the system as support for its position. Later, GBWN chose not to participate in the hearing nor submit a rebuttal report, closing arguments, or public comment.

Lincoln County Water District and Vidler Water Company

LC-V's participation in the LWRFS hearing was driven by their existing and pending groundwater rights in Kane Springs Valley, and an interest in excluding Kane Springs Valley from the LWRFS management area.[86] They disputed that Kane Springs Valley should be included within the LWRFS boundary based on their assertion of: prior decisions of the State Engineer that acknowledged the separate nature of the basin from the rest of the LWRFS, groundwater elevation comparisons, precipitation and recharge data, groundwater chemistry, and geophysical study results. In general, Kane Springs Valley should be managed based on its perennial yield, recognizing that there is groundwater flow to the LWRFS as there are from other basins into the LWRFS, but where they are excluded from the proposed management area.[87]

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[84] *See* Closing GP-REP.

[85] *GBWN Report on Order 1303*, (GBWN Report), Hearing on Interim Order 1303, official records of the Division of Water Resources.

[86] LC-V Ex. 1, *Lower White River Flow System Interim Order #1303 Report Focused on the Northern Boundary of the Proposed Administrative Unit, prepared by Lincoln County Water District and Vidler Water Company in Association with Zonge International Inc., dated July 3, 2019*, Hearing on Interim Order 1303, official records of the Division of Water Resources, p. 2-1.

[87] LC-V Ex. 2, *Rebuttal Submittal to Reports Submitted in Response to Interim Order #1303, dated August 16, 2019 and Attachments A, B, C, D and E containing the reports or technical memorandums of Greg Bushner, Peter Mock, Thomas Butler, Todd Umstot and Norman Carlson.*, Hearing on Interim Order 1303, official records of the Division of Water Resources, pp. 7, 14–15.

Various rulings of the State Engineer have previously addressed whether appropriation of groundwater from Kane Springs Valley would affect the Muddy River Springs Area.[88] LC-V states that these findings have not been challenged by any of the Order 1169 participants.[89] However, to the extent that SNWA relied on multiple linear regression models to establish groundwater flow from Kane Springs Valley to the LWRFS, LC-V do not agree.[90]

LC-V identified a distinct "break," or local increase, in water levels in the regional hydraulic gradient between wells drilled in the LWRFS versus wells drilled in Kane Springs Valley and northern Coyote Spring Valley.[91] It attributed the break to geologic structures located throughout the carbonate-rock aquifer. Although wells within the LWRFS exhibit very consistent groundwater levels, indicative of high transmissivity values across the area, the gradient between well KPW-1 and down-basin wells is much steeper, implying an impediment to groundwater flow near the mouth of Kane Springs Valley.[92]

In a 2006 hearing for protested water rights applications, LC-V presented an analysis of the regional geochemistry data including stable isotopes, temperature, and carbon-14 data.[93] That analysis found that the groundwater pumped from Kane Springs Valley could not be identified in the source water for the Big Muddy Spring, nor other springs farther south and outside the boundaries of the LWRFS.[94] LC-V concluded that groundwater pumped from production well KPW-1 is on a different groundwater flow path from the springs, consistent with the differences in hydraulic gradients, groundwater levels, and geophysical data.[95] CSVM-4, a well located in Coyote Spring Valley, and KPW-1, in Kane Springs Valley, have similar temperatures compared to the other wells in the basin, and a lower percentage difference on other markers tracked throughout groundwater in the basin.[96] LC-V argues that the water from these wells is chemically

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[88] LC-V Ex. 1, pp. 2-2 through 2-3, citing State Engineer's Rulings 5712, 6254, 5712.
[89] LC-V Ex. 1, p. 2-3.
[90] Testimony generally at Tr. 1311–1318. "... simply having correlation is not proof of causation. Causation is neither proved nor evaluated in a regression analysis." Tr. 1303.
[91] LC-V Ex. 1, p. 3-1.
[92] LC-V Ex. 1, pp. 1-1, 3-1 through 3-4. LC-V went on to conclude that local groundwater recharge occurs in Kane Springs Valley that does not flow to the LWRFS, and therefore there is available unappropriated water in the basin. LC-V Ex. 1, p. 3-5.
[93] LC-V Ex. 1, Appendix C, pp. 111–153.
[94] *Id.*, pp. 124–125.
[95] "Gradient alone does not mean flow." Thomas Butler, witness on behalf of LC-V, Tr. 1281.
[96] Tr. 1281–1282; LC-V Ex. 1, pp. 3-7 through 3-11.

unique and does not appear in any other wells in the LWRFS.[97] LC-V concludes carbon isotope data also confirmed that the water from Kane Springs Valley does not appear in the Muddy River Springs area.[98]

LC-V engaged a geophysical company to perform a CSAMT survey across the boundary line between Kane Springs Valley and Coyote Spring Valley, and identified significant geologic structures in southern Kane Springs Valley and northern Coyote Spring Valley.[99] Several transect lines were conducted perpendicular to the axis of the Kane Springs Valley, and one was also conducted along the axis of the southern part of the basin.[100] Additional transects were run in Coyote Spring Valley.[101] The results of the geophysical data validated concealed faulting indicated on existing maps, and was ground-truthed with observations in the field.[102] Results indicated a previously unmapped fault at the mouth of Kane Springs Valley, which LC-V named the Northern Boundary LWRFS fault, with a potentially 2,500-foot offset of materials with different resistivities.[103] LC-V argues that the extensive faulting that occurs in southern Kane Springs Valley and northern Coyote Spring Valley form the basis for the exclusion of Kane Springs Valley from the LWRFS.[104]

LC-V gave no opinion on the long-term annual quantity of groundwater that could be pumped from the LWRFS.[105] LC-V attributes all reduction in flows of the Muddy River and its associated springs to carbonate-rock aquifer pumping within the Muddy River Springs Area, and finds no discernable effect from carbonate-rock aquifer pumping occurring in Coyote Springs

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[97] Tr. 1284.
[98] Tr. 1286.
[99] LC-V Ex. 1, pp. 1-1, 4-1 through 4-10.
[100] LC-V Ex. 1, p. 4-3.
[101] LC-V Ex. 1, p. 4-3.
[102] LC-V Ex. 1, p. 4-8, Tr. 1322.
[103] Tr. 1271–1272; LC-V Ex. 1, p. 4-9.
[104] LC-V Ex. 1, p. 7-1 through 7-2; Tr. 1408. Questions from the National Park Service and the State Engineer inquired whether the areas of high resistivity in the CSAMT necessarily implied low transmissivity, low permeability of the rock. LC-V conceded that the resistivity information alone does not provide data about the hydraulic properties of either side of the resistive area, but when considered with all available information, LC-V concluded that the fault is likely an impediment to groundwater flow. Tr. 1327–1328, 1363–1364.
[105] LC-V Ex. 1, p. 5-2.

Valley.[106] As a result, LC-V finds that the efforts to protect the Warm Springs area must focus on groundwater pumping within the Muddy River Springs Area itself.[107]

Moapa Band of Paiutes

The MBOP participated in the administrative hearing due to their interest in the outcome of the proceedings and how it may affect their pending water right applications within California Wash. A regional approach, spanning a large aerial expanse, was taken by MBOP; the analysis and modeling efforts extended into central Nevada and Utah. MBOP stands apart from other participants with their interpretation of the data.[108] MBOP opposed management of the LWRFS as one basin and argues the scientific consensus is lacking amongst participants.[109] Regarding the interpretation of other participants, MBOP disagreed with the methodology and application of the 2013 USFWS SeriesSEE analysis and SNWA's multiple linear regression and requests repudiation of both.[110]

While not agreeing with the proposed boundaries of the LWRFS, MBOP did not provide a clear suggestion for which basins or portions therein should be included or excluded. MBOP suggested that pumping in California Wash has little to no impact on the Warm Springs area.[111] MBOP further suggested there are two capture zones, separated by a hydrodynamic and hydrochemical divide, which transects the Moapa River Indian Reservation area and results in south-flowing groundwater into the Las Vegas Valley through the LWRFS, bypassing the Muddy

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[106] LC-V Ex. 1, p. 5-3.
[107] LC-V Ex. 1, p. 5-3.
[108] Tr. 772– 773; 839.
[109] *See Closing Statement by the Moapa Band of Paiute Indians for Order 1303 Hearing* (MBOP Closing), Hearing on Interim Order 1303, official records of the Division of Water Resources, pp. 1–2, 6.
[110] *Id.*, pp. 7–12, 15–16; *See* MBOP Ex. 3, *Johnson, C., and Mifflin, M. Rebuttal Report of the Moapa Band of Paiutes in Response to Stakeholder Technical Reports Filed under Order #1303: unpublished report and appendices, August 16, 2019. 27 p.*, Hearing on Interim Order 1303, official records of the Division of Water Resources.
[111] *See* MBOP Ex. 2, *Johnson, C., and Mifflin, M. Water Level Decline in the LWRFS: Managing for Sustainable Groundwater Development. Initial Report of the Moapa Band of Paiutes in Response to Order #1303: unpublished report and appendices, July 3, 2019. 84 p.*, Hearing on Interim Order 1303, official records of the Division of Water Resources, pp. 2, 4, 14, 35; Tr. 819.

River Springs Area.[112] This hydrodynamic divide theory was not shared by SNWA, CBD, CSI, and NPS.[113]

Several participants agree that climate impacts were observed in the hydrographs, e.g., periods of wet and dry; however, MBOP interpreted the existing data to show that climate-driven decline, specifically drought, as the primary response observed in the long-term declining groundwater levels.[114] Thus, MBOP concluded that no reduction in pumping will restore high-elevation spring flows.[115] MBOP did not agree with other participants that decreasing groundwater levels and spring flows were attributed to increased carbonate-rock aquifer pumping beginning in the early 1990s.[116]

A quantity available for sustainable pumping was not proposed, but MBOP presumed more water is available in California Wash than previously thought.[117] A flux of approximately 40,000 afy of south-flowing groundwater into the Las Vegas Valley, bypassing the Muddy River Springs Area, was postulated in the initial report as possible with the hydrodynamic divide; however, during the hearing this quantity was given a range of plus or minus an order of magnitude based on assumptions for calculations.[118]

MBOP acknowledged that the Muddy River is connected to the alluvial aquifer and thus pumping from the alluvial and carbonate-rock aquifers in the Muddy River Springs Area impact the Muddy River flows.[119] Therefore, to mitigate impacts to the Muddy River, MBOP proposed that alluvial aquifer pumping, specifically between Arrow Canyon and White Narrows, can be moved to the carbonate-rock aquifer in basins to the south, such as California Wash, with minimal anticipated impacts to the Muddy River flows, rather than moving alluvial aquifer pumping from the Muddy River Springs Area to the carbonate-rock aquifer in connected areas, where impacts

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[112] *See* MBOP Ex. 2, pp. 2, 4, 12, 14, 20, 35, 55; Tr. 812; 845.
[113] SNWA Ex. 9, pp. 12–13; CBD Ex. 4, p. 15; CSI Ex. 2, p. 23; NPS Ex. 3, *National Park Service's Response to July 2019 Interim Order 1303 Reports, Waddell, August 16, 2019*, Hearing on Interim Order 1303, official records of the Division of Water Resources, p. 4.
[114] *See* MBOP Ex. 2, pp. 3, 26–32, 35; Tr. 764–771; 805.
[115] *See* MBOP Ex. 2, pp. 3, 35; Tr. 821–826.
[116] *See* MBOP Ex. 2, p. 29; Tr. 775, 838–840; 848.
[117] *See* MBOP Ex. 2, pp. 2, 20, 35.
[118] *See* MBOP Ex. 2, pp. 6, 19, 35; Tr. 850–851.
[119] *See* MBOP Ex. 2, pp. 23–24, 35; Tr. 836.

proportional to pumping may be expected.[120] Thus, MBOP proposed favoring temporary over permanent uses and transferring of rights between the carbonate-rock and alluvial aquifers on a case-by-case basis.[121]

Moapa Valley Water District

MVWD was created by the Nevada legislature in 1983, pursuant to NRS Chapter 477, to provide water service "vital to the economy and well-being of Moapa Valley."[122] MVWD provides municipal water service to approximately 8,500 people with 3,250 metered service connections, including service to the MBOP.[123]

MVWD supported the inclusion of Kane Springs Valley within the LWRFS boundary.[124] Data indicated a direct connection between Kane Springs Valley and Coyote Spring Valley. This data included observations that the water level in KMW-1/KSM-1 decreased 0.5 foot over the duration of the Order 1169 aquifer test.[125] State Engineer's rulings have concluded that geochemical evidence and groundwater gradient data indicate that groundwater flows from the Kane Springs Valley into Coyote Spring Valley, and MVWD supports LVVWD's 2001 calculation of that quantity of water at approximately 6,000 afy.[126] MVWD performed its own calculations of the groundwater gradients from Kane Springs Valley at KMW-1 to EH-4, and concluded that the gradient was "an uninterrupted, continuous, exceptionally flat gradient," unlike gradients commonly seen in the western U.S., especially in highly fractured areas.[127] MVWD also

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[120] *See* MBOP Ex. 2, pp. 23, 35.
[121] *See* MBOP Closing.
[122] Tr. 1172.
[123] MVWD Ex. 3, *District July 1, 2019 Report in response to Interim Order 1303*, p.5, Hearing on Interim Order 1303, official records of the Division of Water Resources; MVWD Ex. 4, *District August 16, 2019 Rebuttal Report*, p, 1, Hearing on Interim Order 1303, official records of the Division of Water Resources. MVWD has 3,147 afa of water rights in Arrow Canyon. Tr. 1169–1170.
[124] MVWD Ex. 3, p. 1; Tr. 1175.
[125] MVWD Ex. 3, p. 1; MVWD Ex. 4, p. 2.
[126] MVWD Ex. 3, pp. 1–2, referring to State Engineer's Ruling 5712 (*see*, NSE Ex. 12, *Ruling 5712*, Hearing on Interim Order 1303, official records of the Division of Water Resources) and MVWD Ex. 8, *Las Vegas Valley Water District, Water Resources and Ground-Water Modeling in the White River and Meadow Valley Flow Systems, Clark, Lincoln, Nye, and White Pine Counties, Nevada (2001)*, Hearing on Interim Order 1303, official records of the Division of Water Resources, p. 6-3.
[127] Tr. 1177–1178.

introduced evidence of a stipulation between LC-V and the USFWS that bases a reduction in pumping in Kane Springs Valley on a lowering of spring discharges in the Warm Springs area, and introduced a letter from SNWA to the State Engineer, as additional support that the participants to the Interim Order 1303 hearing have previously recognized Kane Springs Valley is part of the LWRFS.[128]

MVWD disagreed that a hydrologic barrier exists between Coyote Springs Valley and Kane Springs Valley.[129] Relying on a 2006 report prepared by another consultant, MVWD said the evidence indicated that the fault at the mouth of Kane Springs Valley was not an impediment to flow, and that there was no evidence of having encountered hydraulic barriers to groundwater flow during a seven-day aquifer test.[130] Additionally, the "highly transmissive fault zone" is continuous across the basin boundary between Kane Springs Valley and Coyote Spring Valley.[131] MVWD found further support for its position from evidence that KMW-1 showed drawdown during both the seven-day aquifer test on KPW-1, as well as from the Order 1169 aquifer test pumping that occurred from MX-5.[132] MVWD considered the water level data collected before, during and after the Order 1169 aquifer test, and Warm Springs area spring discharge to support its finding that the fault is not interrupting groundwater flow.[133] MVWD found it "questionable" that the first suggestion of a fault that impedes southward groundwater flow would be prepared by LC-V for this hearing.[134]

Although water levels and spring discharge did not recover to the levels measured before the Order 1169 aquifer test, MVWD believed that the LWRFS is at or near steady-state conditions

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[128] Tr. 1195–1197.
[129] Tr. 1176–1177.
[130] Tr. 1181–1182. MVWD also quoted from the report that "the fracturing was so extensive that the fractured aquifer system really behaved as an equivalent porous media." *Id.* MVWD later agreed that this would behave like a sandy aquifer. Tr. 1224.
[131] Tr. 1185.
[132] Tr. 1250.
[133] Tr. 1219.
[134] *Post-Hearing Brief of Moapa Valley Water District* (MVWD Closing), Hearing on Interim Order 1303, official records of the Division of Water Resources, p. 5.

regarding aquifer recovery.[135] MVWD viewed this as being consistent with the State Engineer's statements in Interim Order 1303.[136]

Finally, MVWD did not provide a specific quantity of available water but did acknowledge that the "actual safe pumpage" is less than current pumping rates, and recognized a direct relationship between pumping from the carbonate-rock aquifer, spring and Muddy River flows, and alluvial aquifer pumping.[137] The timing and magnitude of carbonate-rock aquifer pumping effects on spring discharge is dependent on the volume of water pumped and the proximity of a pumping center to the springs; however, all cumulative carbonate-rock aquifer pumping in the seven interconnected basins will eventually cause depletions on the Warm Springs area springs.[138] Further, if carbonate rights are transferred to the alluvial aquifer there will be depletions to Muddy River flows and impacts to senior Muddy River water right owners.[139]

MVWD raised additional matters that they believed relevant to the analysis under Interim Order 1303. First, they stressed the importance of municipal water rights, and the necessity for a reasonably certain supply of water for future permanent uses without jeopardizing the economies of the communities that depend on the water supply, and to protect the health and safety of those who rely on the water supply.[140] To that end, MVWD requested that the State Engineer consider designating municipal use as the most protected and highest use of water, and to give MVWD the perpetual right to divert 6,791 afa of permitted and certificated rights from its carbonate-rock aquifer wells.[141] Second, MVWD stated that it had already satisfied its obligation to protect Moapa dace habitat and senior water rights when it dedicated 1cfs/724 afa, or approximately 25% of the MVWD current diversions, from its most senior water right, to the enhancement of the Moapa dace habitat.[142]

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[135] Tr. 1198, MVWD Ex. 3, p. 4.
[136] Tr. 1199.
[137] Tr. 1199–1200; MVWD Closing, pp. 9–10.
[138] MVWD Ex. 3, p. 5.
[139] *Id.*
[140] MVWD Ex. 3, p. 5.
[141] MVWD Ex. 3, p. 6; Tr. 1203–1204; 6,791 afa constitutes an increase in the carbonate-rock aquifer pumping for MVWD. Tr. 1228.
[142] MVWD Ex. 3, pp. 6–7; Tr. 1202–1203.

Muddy Valley Irrigation Company

The MVIC is a non-profit Nevada corporation with the senior decreed water rights to the Muddy River, who provided testimony that SNWA is a majority shareholder while other participants such as CSI, LC-V, and MVWD are minority shareholders of the decreed rights.[143] MVIC concurred with SNWA's conclusions regarding aquifer recovery, long-term quantity of groundwater, and movement of water between the alluvial and the carbonate-rock aquifers.[144] Specifically, that any groundwater pumping, from both alluvial or carbonate-rock aquifers, within the Muddy River Springs Area impacts Muddy River flows, thus violating the Muddy River Decree.[145] MVIC did not dispute the geographic boundaries as identified in Interim Order 1303.[146] MVIC argued that the Muddy River and all of its sources are fully appropriated and emphasized the decreed seniority to groundwater rights, and further asserts that these surface water rights are protected by the Muddy River Decree and the prior appropriation doctrine.[147]

United States Department of the Interior, National Park Service

NPS submitted both an initial and rebuttal report in response to the Interim Order 1303 solicitation and presented testimony during the hearing.[148] Based upon NPS's evaluation of the evidence relating to the Order 1169 aquifer test, the use of an updated numerical groundwater flow model previously developed to predict conditions within the LWRFS, data compiled since the conclusion of the Order 1169 aquifer test, and review of other available data, NPS came to multiple conclusions relating to the delineation and management of the LWRFS. NPS advocates for the

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[143] Tr. 1693–1696, 1705.
[144] MVIC Ex. 1, *MVIC Rebuttal Report dated August 15, 2019*, Hearing on Interim Order 1303, official records of the Division of Water Resources. MVIC identified sections from the SNWA report, but the references do not correspond with sections in SNWA's report. The State Engineer assumes that these section numbers correspond to page numbers of the SNWA report; *See also*, SNWA Ex. 7, *Burns, A., Drici, W., Collins, C., and Watrus, J., 2019, Assessment of Lower White River Flow System water resource conditions and aquifer response, Presentation to the Office of the Nevada State Engineer: Southern Nevada Water Authority, Las Vegas, Nevada*, Hearing on Interim Order 1303, official records of the Division of Water Resources.
[145] MVIC Ex. 1, p. 5; Tr. 1698.
[146] *See* MVIC Ex. 1, p. 3; Tr. 1697–1968.
[147] *Muddy Valley Irrigation Company Post Hearing Closing Statement* (MVIC Closing), Hearing on Interim Order 1303, official records of the Division of Water Resources; Tr. 1967, 1700–1708. *See also*, NSE Ex. 333, *Muddy River Decree*, Hearing on Interim Order 1303, official records of the Division of Water Resources.
[148] *See* NPS Ex. 2, *Prediction of the Effects of Changing the Spatial Distribution of Pumping in the Lower White River Flow System, Waddell, July 3, 2019*; Tr. 494–597.

inclusion of the entirety of the Black Mountains Area within the geographic boundary of the LWRFS based upon its review of geologic conditions that facilitate flow from the southern portion of the LWRFS through the Muddy Mountains thrust sheet and discharging in Rogers Spring and Blue Point Spring.[149] Further supporting this opinion, NPS cites to spring chemistry and isotopic composition of the water discharging from Rogers Spring and Blue Point Spring and the hydraulic head conditions that NPS believes supports the flow of groundwater beneath the Muddy Mountains from the carbonate-rock aquifer to those springs.[150] NPS acknowledge that there is a weak hydraulic connection between Rogers Spring and Blue Point Spring to the LWRFS based upon the geologic conditions within the Muddy Mountains, but argues that the entirety of the Black Mountains Area should be included to allow for management of the regional carbonate-aquifer to protect against diminished discharge to those springs.[151]

In addition to advocating for the inclusion of the entirety of the Black Mountains Area, the NPS provided evidence and analysis to support its conclusion that Kane Springs Valley too should be included within the geographic boundary of the LWRFS.[152] Based upon a review of the hydrologic data, geology of the Kane Springs Valley and basin boundaries, Coyote Spring Valley, and data from the Order 1169 aquifer test, NPS concludes that there is a clearly established hydrological connection between Kane Springs Valley and the other LWRFS basins, including discharge to the Warm Springs area.[153] While NPS advocates for the inclusion of the entire Black Mountains Area and Kane Springs Valley, it did not find any evidence to support the inclusion of the Las Vegas Valley within the LWRFS based upon a similar review of the geology and hydrological data.[154]

In interpreting data since the conclusion of the Order 1169 aquifer test, NPS reviewed the available data, concluding that the decades long decline of groundwater levels is not attributable to climate, but rather that the groundwater pumping within the LWRFS is the contributing

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[149] *See* NPS Ex. 2, p. 22. *See also*, Tr. 569–70; NPS, *Closing Statements Interim Order 1303 Hearing Testimony* (NPS Closing), Hearing on Interim Order 1303, official records of the Division of Water Resources, p. 2.
[150] NPS Ex. 2, p. 22; NPS Closing, pp. 2–4.
[151] *Id.*
[152] NPS Ex. 2, p. 22; NPS Ex. 3, pp. 5–11; Tr. 550–551; NPS Closing, pp. 4–5.
[153] NPS Ex. 2, p. 22; NPS Ex. 3, pp. 5–11; Tr. 550–551; NPS Closing, pp. 5–6.
[154] NPS Ex. 2, p. 22; Tr. 552–554.

factor.[155] NPS opined that if recent pumping withdrawals continued, the current declining trend would be accelerated, adversely impacting spring discharge in the Warm Springs area and Muddy River flow.[156] Further, NPS's review of the data lead to its conclusion that it will take many years, if not decades for the LWRFS carbonate-rock aquifer to reach equilibrium, particularly at the current groundwater pumping withdrawals and even longer if pumping withdrawals occurred at Order 1169 aquifer test levels.[157] However, NPS did not provide an opinion as what rate of groundwater withdrawals would be sustainable within the LWRFS.

Finally, NPS concluded that the movement of groundwater withdrawals from the alluvial aquifer within the Muddy River Springs Area to the carbonate-rock aquifer within the LWRFS would ultimately have little impact on capture of Muddy River flow. Specifically, NPS found that while there may be near-term benefits to the Warm Springs area and Muddy River flow, those benefits would eventually disappear, as the impact would only be delayed and not eliminated.[158]

Nevada Cogeneration Associates

NCA submitted a Rebuttal Report Pertaining to Interim Order 1303 and provided testimony at the Interim Order 1303 hearing.[159] NCA objected to the inclusion of certain non-profit organizations on the basis that those organizations were not stakeholders and did not have an interest to protect as the non-governmental organizations did not have water rights within the LWRFS basins effected by the proceedings.[160]

With respect to the geographic boundary of the LWRFS, in its Rebuttal Report, NCA is of the opinion that the northwestern portion of the Black Mountains Area, as identified by the State Engineer, should be within the LWRFS basins, but expressed its disagreement with other opinions advocating for the inclusion of the entire Black Mountains Area based upon NCA's analysis of the geology and groundwater elevations.[161] During the Interim Order 1303 hearing and in its Post-Hearing Brief, NCA's opinion shifted to advocate for the boundary of the LWRFS to be adjusted

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[155] NPS Ex. 2, pp. 7, 22–23. *See also* NPS Closing, pp. 5–6.
[156] *Id.*
[157] *Id.*
[158] NPS Ex. 2, p. 23. *See also* NPS Closing, p. 6, and Tr. 593–594.
[159] NCA Ex. 1, *NCA Rebuttal Report Pertaining to Interim Order 1303 August 16, 2019,* Hearing on Interim Order 1303, official records of the Division of Water Resources; Tr. 1602–50.
[160] NCA Ex. 1, pp. 1, 23.
[161] *Id.*, pp. 2, 23.

to exclude its production wells in the Black Mountains Area; however, NCA did not alter its opinion regarding the remaining portion of the Black Mountains Area staying within the LWRFS.[162]

NCA further expressed that the Lower Meadow Valley Wash should not be included in the LWRFS boundaries based upon the fact that observed groundwater levels do not indicate a hydrologic response to carbonate-rock aquifer pumping and that insufficient data supports a finding of continuity between water level trends to support its inclusion in the LWRFS.[163] However, NCA advocated for the inclusion of the Kane Springs Valley within the LWRFS based upon its opinion that the groundwater data demonstrated hydrologic connectivity between Coyote Spring Valley and Kane Springs Valley, acknowledging that the data is slightly attenuated resulting from the Kane Springs fault.[164] Ultimately, NCA concluded that Kane Springs Valley is tributary to the Coyote Spring Valley and the other LWRFS basins, which justify its inclusion within the boundary of the LWRFS.[165]

Similarly, based upon the groundwater data from the northern portion of Coyote Spring Valley demonstrating similar water level responses as other wells throughout the LWRFS and pumping data demonstrating high hydrologic connectivity across all the LWRFS basins, NCA concluded that there was no basis to exclude the northern portion of Coyote Spring Valley.[166] Finally, NCA rejected a suggestion that the entirety of the White River Flow system, which extends into northeastern Nevada, be included within the management area.[167] Specifically, NCA concluded that the Pahranagat Shear Zone creates a significant barrier to the northwestern portion of the LWRFS and that review of groundwater levels does not support a finding that groundwater level declines propagate into the northern reaches of the White River Flow System.[168] NCA concluded, advocating that proper management of the LWRFS is appropriate and sufficient for the

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[162] *Post-hearing brief of Nevada Cogeneration Associates Nos. 1 and 2 pertaining to Amended Notice of Hearing Interim Order #1303 following the hearing conducted September 23, 2019, through October 4, 2019, before the Nevada State Engineer* (NCA Closing), Hearing on Interim Order 1303, official records of the Division of Water Resources, pp. 2–10. *See also* Tr. 1619–22.
[163] NCA Ex. 1 pp. 3–7, 23. *See also* NCA Closing, pp. 15–16.
[164] NCA Ex. 1, pp. 8–17, 23. *See also* NCA Closing, pp. 10–14, and Tr. 1629–44.
[165] NCA Ex. 1, pp. 11–16.
[166] *Id.*, pp. 17–18, 23.
[167] *Id.*, pp. 19, 24.
[168] *Id.*

purpose of managing discharge of groundwater to the Warm Springs area to support habitat for the Moapa dace and serve senior Muddy River decreed rights.[169]

In addressing the annual amount of groundwater that could be developed within the LWRFS without adversely impacting senior decreed rights on the Muddy River or Warm Springs area discharge supporting the habitat for the Moapa dace, NCA supported a target of 9,318 afa, a recent three-year average of annual pumping within the LWRFS,[170] as it did not believe there to be sufficient data to support either an increase or decrease from this amount.[171] However, in its post-hearing brief, NCA opined that if their production wells located within the northwestern portion of the Black Mountains Area were excluded from the LWRFS boundary, then the annual amount of water that could be sustainably developed was less than the 9,318 afa.[172]

Finally, NCA did not support movement of water rights from the Muddy River Springs Area alluvial aquifer to the carbonate-rock aquifer, as it was of the opinion that the movement of those rights would not mitigate impact to the Warm Springs area.[173] Rather, NCA concluded that movement of those rights would compound the impact of pumping from the carbonate-rock aquifer.[174] However, NCA did express some support for movement of senior alluvial water rights as a management tool to offset existing junior carbonate-rock aquifer pumping within the LWRFS.[175]

NV Energy

NV Energy submitted a rebuttal report outlining its responses to the five matters the State Engineer solicited in Interim Order 1303 and presented its opinions and conclusions during the Interim Order 1303 hearing.[176] In its rebuttal report, NV Energy opined that the geographic boundary of the LWRFS should be as established in Interim Order 1303.[177] NV Energy further

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[169] *Id.*
[170] NCA Ex. 1, p. 19. *See, e.g.* Draft order of the State Engineer distributed to LWRFS stakeholders at the LWRFS Working Group meeting, September 19, 2018, official records of the Division of Water Resources.
[171] *Id.*, pp. 18, 24.
[172] NCA Closing, pp. 14–15.
[173] NCA Ex. 1, pp. 19–23, 24.
[174] *Id.*
[175] *Id.*
[176] NVE Ex. 1, *NV Energy Rebuttal Report to State Engineer's Order 1303 Initial Reports by Respondents*, Hearing on Interim Order 1303, official records of the Division of Water Resources.
[177] *Id.*, pp. 1–2.

opined that the existence of subsurface outflow from Kane Springs Valley into the LWRFS basins was insufficient to support its inclusion.[178]

NV Energy, in its rebuttal report, disagreed with MBOP's conclusion that the groundwater level declines observed during and after the Order 1169 aquifer test were primarily caused by drought. Rather, NV Energy agreed with SNWA's and MVWD's conclusions that the groundwater recovery occurred between 2–3 years following the conclusion of the aquifer test, but that continued pumping within the carbonate-rock aquifer has inhibited recovery to pre-Order 1169 aquifer test groundwater levels, and that at the current rate of carbonate-rock aquifer pumping the aquifer has nearly reached steady-state conditions and discharge to the Warm Springs area has reached equilibrium.[179]

NV Energy further agreed in its rebuttal report with MBOP's and CNLV's conclusions that some groundwater flowing within the carbonate-rock aquifer bypassed the Muddy River Springs Area, and ultimately the Muddy River. NV Energy also agreed that groundwater development within the southern boundary of the LWRFS would likely have less of an effect on discharge to the Warm Springs area and the river. NV Energy did not opine as to the quantity of water that bypassed the springs, but inferred that the current 7,000–8,000 afy of carbonate-rock aquifer pumping appeared to support the conclusion that steady-state conditions had been reached.[180] NV Energy also opined that movement of senior certificated alluvial water rights in the Muddy River Springs Area to carbonate-rock aquifer wells located in the southern portion of the LWRFS may be considered acceptable as Nevada law allows for the reasonable lowering of the groundwater table, and such movement would not necessarily result in a conflict to existing rights.[181] NV Energy further concluded that, contrary to the conclusions of MBOP, drought was not a significant cause for the groundwater level declines observed.[182] Finally, NV Energy concluded with suggestions that the State Engineer either: (1) combine the LWRFS basins into a single hydrographic basin and declare the new basin to be a Critical Management Area pursuant to NRS 534.037 and 534.110; or, (2) for the State Engineer to, under his authority in NRS 534.020 and

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[178] *Id.*
[179] *Id.*, pp. 2–7.
[180] NVE Ex. 1, p. 8.
[181] *Id.*, pp. 8–9; *Nevada Energy's Closing Statements* (NV Energy Closing), Hearing on Interim Order 1303, official records of the Division of Water Resources, pp. 4–5.
[182] *Id.*, pp. 9–12.

534.120, require the water right holders within the LWRFS to develop a conjunctive management plan.[183]

After considering all of the evidence and testimony presented at the Interim Order 1303 hearing, NV Energy ultimately altered its opinion and found compelling arguments to both support the inclusion of Kane Springs Valley in the LWRFS as well as its exclusion.[184] Ultimately, NV Energy changed its opinion with respect to the geographic boundary of the LWRFS and in its closing statement expressed support for the inclusion of Kane Springs Valley within the LWRFS boundary due to the connection with Coyote Spring Valley and thus the potential for impacts to LWRFS from pumping within Kane Springs Valley.[185] NV Energy proposes that the current pumping regime of 7,000 to 8,000 afy be maintained to evaluate the potential for steady-state conditions and the continued monitoring of the Warm Springs West gage and agrees that moving pumping further south may reduce impact to the Muddy River and springs. With regards to moving water between the alluvial and carbonate-rock aquifers, similar to others, NV Energy agrees with the evaluation of change applications on a case-by-case basis with demonstration that impacts are reduced or unchanged by the proposed point of diversion compared to the existing point of diversion. NV Energy supports an agreement that would include all water users within the LWRFS for the purposes of not exceeding stresses within system and protecting the Moapa dace.[186]

Southern Nevada Water Authority and Las Vegas Valley Water District

The SNWA and LVVWD submitted multiple reports in response to the Interim Order 1303 solicitation.[187] SNWA and LVVWD supported the boundary of the LWRFS as identified in Interim Order 1303, and argued that there was a general consensus of the participants regarding the

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[183] *Id.*, p. 12.
[184] Tr. 1761–1762.
[185] NV Energy Closing, pp. 2–3.
[186] *Id.*, pp. 3–6.
[187] SNWA Ex. 7; SNWA Ex. 8, *Marshall, Z.L., and Williams, R.D., 2019, Assessment of Moapa dace and other groundwater- dependent special status species in the Lower White River Flow System, Presentation to the Office of the Nevada State Engineer: Southern Nevada Water Authority, Las Vegas, Nevada*, Hearing on Interim Order 1303, official records of the Division of Water Resources; SNWA Ex. 9, *Burns, A., Drici, W., and Marshall Z.L., 2019, Response to stakeholder reports submitted to the Nevada State Engineer with regards to Interim Order 1303, Presentation to the Office of the Nevada State Engineer: Southern Nevada Water Authority, Las Vegas, Nevada*, Hearing on Interim Order 1303, official records of the Division of Water Resources.

boundaries based upon the hydraulic connectivity within the identified basins.[188] Further, SNWA and LVVWD argued against the exclusion of the northern and western portions of Coyote Spring Valley, that management of adjoining basins should be done in a manner recognizing an impact on pumping from those basins on water availability in the LWRFS basins, and that the Las Vegas Valley should be excluded from the LWRFS.[189]

With respect to the evaluation of the carbonate-rock aquifer recovery since the conclusion of the Order 1169 aquifer test, SNWA and LVVWD concluded that the aquifer has not returned to pre-Order 1169 levels, and that the evidence demonstrates a continued declining trend within the carbonate-rock aquifer as a result of continued groundwater pumping.[190] SNWA and LVVWD concluded that the current pumping continues to capture groundwater storage and that based upon the current rate of groundwater withdrawals, water levels within the carbonate-rock aquifer will continue to decline for the foreseeable future.[191] Further, SNWA and LVVWD rejected the premise that climate was a significant factor over groundwater withdrawals for the observed groundwater level decline.[192]

Based upon a review of the evidence, SNWA and LVVWD concluded that current rate of groundwater withdrawals were not sustainable without adversely impacting senior Muddy River water rights and Moapa dace habitat.[193] Based upon the analysis performed by SNWA and LVVWD, examining the discharge from the Muddy River Springs Area and groundwater production within the carbonate-rock aquifer within the LWRFS, SNWA and LVVWD concluded that any groundwater development within the carbonate-rock aquifer resulted in a one-to-one (1:1) ratio of capture of Muddy River flow, and that regardless of where that pumping occurred, it still resulted in a 1:1 ratio of capture, only that the period of time that the capture was realized was longer.[194] Ultimately, SNWA and LVVWD concluded that while any amount of pumping results

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[188] SNWA Ex. 7, pp. 5-1 through 5-18, 8-1. *See also*, Tr. 953.
[189] *Closing Brief of Southern Nevada Water Authority and Las Vegas Valley Water District* (SNWA Closing), pp. 4–9, Hearing on Interim Order 1303, official records of the Division of Water Resources. *See also* SNWA Ex. 9 at sections 6, 7 and 12.
[190] SNWA Closing, pp. 9–12. *See also* SNWA Ex. 7, pp. 5-1 through 5-18, and SNWA Ex. 9, pp. 15–20.
[191] SNWA Closing, pp. 11–12. *See also* Tr. 932.
[192] SNWA Closing, pp. 12–14. *See also* SNWA Ex. 9, pp. 15–17.
[193] SNWA Ex. 7, pp. 6-3 through 6-4, 8-2 through 8-4.
[194] *Id.*, pp. 6-4 through 6-11, 8-2 through 8-4; SNWA Ex. 9, pp. 22–27.

in a conflict with senior decreed Muddy River rights, approximately 4,000 to 6,000 afa could be sustainably pumped from the aquifer.[195] In conjunction with SNWA and LVVWD's evaluation of the quantity of water that may be sustainably developed within the LWRFS, SNWA and LVVWD reviewed the interrelationship between discharge from the carbonate-rock aquifer underlying the LWRFS, groundwater pumping and the impact on the habitat and recovery of the Moapa dace.[196] SNWA and LVVWD ultimately concluded that the flow required to sustain the Moapa dace from adverse effects, including habitat loss and fish population declines was a minimum 3.2 cfs at the Warm Springs West gage.[197]

Finally, it was SNWA and LVVWD's opinion that movement of water rights from the Muddy River Springs Area alluvial aquifer to the carbonate-rock aquifer within the LWRFS may delay the capture of water serving senior decreed rights on the Muddy River, but that movement of water from the alluvial aquifer to the carbonate-rock aquifer would adversely impact the habitat of the Moapa dace.[198] Thus, SNWA and LVVWD concluded transfer of water rights from the Muddy River Springs Area alluvial aquifer to the LWRFS carbonate-rock aquifer would result in further depletion of flow to the Warm Springs area.[199]

Technichrome

Technichrome submitted a response and additional response to the Interim Order in July 2019 but did not participate in the hearing.[200] Technichrome stated that it had no objection to a "joint administrative basin" consisting of Coyote Spring Valley, Black Mountain Area, Garnet Valley, Hidden Valley, Muddy River Springs Area, and Lower Moapa Valley, expressed no comment regarding the inclusion of Kane Springs Valley, but questioned whether the entirety of the White River Flow System should be included in the State Engineer's analysis.[201] However,

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[195] Tr. 921–22. *See also* SNWA Ex. 7, pp. 8-1 through 8-5; SNWA Ex. 9, p. 27.
[196] *See* SNWA Ex. 8.
[197] *Id.*, pp. 8-1 through 8-2. *See also* SNWA Closing, pp. 17–19.
[198] *See* SNWA Closing, pp. 19–20. *See also* SNWA Ex. 7, pp. 6-3 through 6-11, 8-4; SNWA Ex. 9, pp. 21–22.
[199] SNWA Closing, p. 20. *See also* Tr. 904–05.
[200] *Response to Interim Order #1303 Submitted [sic] by Technichrome* (Technichrome Response), Hearing on Interim Order 1303, official records of the Division of Water Resources, and *Additional Comments from Technichrome* (Technichrome Addendum), Hearing on Interim Order 1303, official records of the Division of Water Resources.
[201] Technichrome Response, pp. 1–3.

Technichrome did note that it believed that combining all water rights into a single management structure reduced the State Engineer's ability to control groundwater withdrawals. Technichrome stated that it believed that the State Engineer should have the ability to control withdrawals in small areas to best manage the discharge to the Warm Springs area, and that more targeted control over the groundwater withdrawals would be more effective in managing the discharge.[202] Technichrome supported this opinion with some analysis of the results of the Order 1169 aquifer test and its opinion that pumping farther from the Warm Springs area had little to no impact on discharge to Pederson Spring.[203]

In Technichrome's additional comments, Technichrome addressed concerns regarding the injury that would result from a system-wide reduction of groundwater rights throughout the LWRFS.[204] Finally, Technichrome addressed concerns regarding reliance on the priority system, as utilization of the prior appropriation system would benefit senior irrigation uses over the junior industrial uses, and that removal of basin boundaries would remove limitations on movement of water rights between the existing hydrographic basins, which would disrupt junior uses in areas where senior rights may be moved.[205]

U.S. Fish and Wildlife Service

USFWS holds several water rights within the LWRFS and its mission is consistent with the scientific and management aspects of the LWRFS and the management area as established in Interim Order 1303.[206] USFWS opted to participate in the proceeding by submitting initial and rebuttal reports and providing testimony during the administrative hearing.[207] The approach of

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[202] *Id.*
[203] *Id.*, and Technichrome Addendum.
[204] Technichrome Addendum.
[205] *Id.*
[206] The USFWS' mission is to work with others to conserve, protect and enhance fish, wildlife and plants and their habitats for the continuing benefit of the American people. *See also,* USFWS, *About the U.S. Fish and Wildlife Service*, https://bit.ly/aboutusfws (last accessed June 4, 2020).
[207] USFWS Ex. 5, *Report in Response to Order 1303*, Hearing on Interim Order 1303, official records of the Division of Water Resources; USFWS Ex. 7, *Rebuttal to: Water Level Decline in the LWRFS: Managing for Sustainable Groundwater Development by Cady Johnson and Martin Mifflin* [sic], *Mifflin & Associates, Inc., submitted by the Moapa Band of Paiutes in accordance with Order 1303*, Hearing on Interim Order 1303, official records of the Division of Water Resources.

USFWS was to review available data, develop a hydrogeologic conceptual model, and answer the specific questions posed in Interim Order 1303.

USFWS proposed that the boundary be based on geologic breaks rather than the surface drainage areas. The boundary would then encompass all Muddy River Springs Area, Hidden Valley, Garnet Valley, most of Coyote Spring Valley, most of California Wash, the northwest portion of the Black Mountains area, Kane Springs Valley, and most of Lower Meadow Valley Wash. The extent to which Kane Springs Valley and Lower Meadow Valley Wash are included would depend on the data from an aquifer test that has not yet been performed.[208]

Although, USFWS did not directly opine their view on recovery, their report discusses a conceptual model with insight into lag times and hydraulic connections, and how current conditions relate to sustainable pumping. An "undiminished state of decline" in water levels and spring flows indicated that the system was not in equilibrium at the end of the Order 1169 aquifer test. USFWS postulated there was generally good connectivity within the aquifer system with areas of higher and lower transmittivity. Trends in water levels and spring flows allude to the connection between high elevation springs and carbonate-rock aquifer pumping, with a time lag observed in the recovery of carbonate-rock aquifer water levels and spring flows following the cessation of the Order 1169 aquifer test. The exception is Big Muddy Spring where surface water level trends appeared to be unrelated to the carbonate-rock aquifer water levels.[209]

USFWS determined that the optimum method currently available to estimate the maximum allowable rate of pumping in the LWRFS is the average annual rate of pumping from 2015–2017.[210] USFWS considered the period from 2015 to 2017 because it found that the groundwater withdrawals, the discharge of the Muddy River Springs, and the flow of the Muddy River were all relatively constant; flow rates from Plummer, Pederson, Jones and Baldwin springs, though generally lower than before the Order 1169 aquifer test, were reasonably stable compared to earlier

[208] *See* USFWS Ex. 5, pp. 2, 28–36.
[209] USFWS Ex. 5, pp. 3, 32–33, 35, 37–45; Tr. 266–270, 273–281, 299-301, 433-435.
[210] USFWS Ex. 5, p. 3.

periods.[211] Using the pumpage inventories for this time period, USFWS estimated the sustainable groundwater withdrawals to be 9,318 afa.[212]

Even if total carbonate-rock and alluvial aquifer pumping is maintained at a "sustainable" overall level, USFWS did not support increased carbonated-rock aquifer pumping in exchange for reductions in alluvial aquifer pumping, nor did USFWS support increased alluvial aquifer pumping in exchange for reductions in carbonate-rock aquifer pumping. USFWS suggested that carbonate-rock aquifer pumping should not be moved closer to the springs or the river. Similarly, USFWS suggests that alluvial aquifer pumping in the vicinity of the river should not be moved closer to the river. USFWS opines that any movement of water nearer to the springs or the river is anticipated to decrease the lag time for observing responses from pumping and shorten the time to respond to unfavorable impacts.[213]

Moving forward with management of the LWRFS, USFWS supported the use of the triggers at the Warm Springs West gage, as established under the 2006 MOA. Continuing to use these Warm Springs West flows as a trigger for management will protect and provide habitat for the Moapa dace; a reduction in the flow translates to a reduction in habitat.[214]

USFWS did not deny that water levels were independent of a climate response signal. Using observed data for Nevada Climate Divisions, USFWS visually inspected hydrographs for climate signals. USFWS opined that response to wet periods are observed for wells in both the carbonate-rock and alluvial aquifers and springs that discharge from the carbonate-rock aquifer but stated that response to dry periods cannot be separated from the impacts of pumping. USFWS did not observe these same climate signals in the hydrographs for Jones and Baldwin Springs or the Big Muddy Spring. USFWS disagreed with the conclusion of the MBOP regarding long-term, regional drought, as well as the analytical methods.[215]

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[211] USFWS Ex. 5, pp. 3, 37; Tr. 269–270, 433–435.
[212] USFWS Ex. 5, pp. 3, 36–38; Tr. 268–270.
[213] *See* USFWS Ex. 5, pp. 3–4, 38–39; Tr. 272–273.
[214] *See* USFWS Ex. 5, pp. 4, 39–45; Tr. 273–282; *See also*, NSE Ex. 256; NSE Ex. 244, *2006 Memorandum of Agreement Trigger Levels agreed to by the Southern Nevada Water Authority, Moapa Valley Water District, Coyotes Springs Investments LLC and Moapa Band of Paiute Indians*, Hearing on Interim Order 1303, official records of the Division of Water Resources.
[215] *See* USFWS Ex. 5, pp. 24–28, 34–35; *See* USFWS Ex. 7, pp. 2–16; Tr. 258–260, 299–322, 429–432.

Western Elite Environmental/Bedroc

Bedroc is the land holding and water-right holding entity for Western Elite Environmental, Inc., a provider of construction and recyclable waste collection and disposal in Southern Nevada.[216] Bedroc submitted an undated rebuttal report signed by Derek Muaina, General Counsel, and a closing statement.[217] Bedroc presented Jay Dixon as its expert to give a presentation and to discuss the rebuttal report.[218] Mr. Dixon stated that he contributed to the report, and that he agreed with it, but he did not sign the report because he was working for another participant in the hearing (NCA).[219] Mr. Dixon did provide testimony consistent with the report, and adopted the findings of that report, and both the testimony and the report will be considered in this Order.[220]

Bedroc presented testimony and evidence that its source of groundwater is hydraulically disconnected from the regional carbonate aquifer of the LWRFS and that additional groundwater may be available for pumping in their part of Coyote Spring Valley. Bedroc also argued that its basin fill alluvial groundwater pumping should be managed outside of the proposed LWRFS joint administrative unit.[221]

To show the hydraulic disconnect, Bedroc presented geologic information demonstrating its unique location.[222] Bedroc showed that a confining shelf of sedimentary rock was noticeably absent in the vicinity of the Bedroc site where recharge from the Sheep Range rises toward the surface between two faults, which results in shallow groundwater that is subject to ET and capture from shallow groundwater wells at the Bedroc site.[223] Recharge from the Sheep Range was estimated to be 750 afy, an average of the high and low estimates of the maximum recharge

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[216] Bedroc Ex. 2, *Interim Order 1303- Rebuttal Report- Prepared by Bedroc and Dixon Hydrologic, PLLC- August 2019*, Hearing on Interim Order 1303, official records of the Division of Water Resources.
[217] Bedroc Ex. 2; *Western Elite Environmental Inc.'s and Bedroc Limited, LLC's Closing Statement* (Bedroc Closing), Hearing on Interim Order 1303, official records of the Division of Water Resources.
[218] *See* Tr. 1718–1719.
[219] Tr. 1719, 1741.
[220] Tr. 1718–1757, 1749–1750.
[221] Bedroc Closing, pp. 13–14. Bedroc offered summary responses to the first four questions posed by Order 1303 but did no independent analysis. *See* Bedroc Closing, p. 12.
[222] Bedroc Closing, p. 2.
[223] *Id*; Tr. 1726–1733.

available.[224] SNWA challenged this calculation, pointing out that the estimated recharge could be as low as 130 acre-feet.[225]

Bedroc believes that it is capturing the recharge that would otherwise be lost to evapotranspiration.[226] Groundwater conditions at Bedroc's site show a rise in water levels between 2003 and 2006.[227] Bedroc attributed this rise in part to the installation of an unlined storage pond upgradient from the well, but also to the 2005 recharge event that was discussed by many participants to the proceeding.[228] Between 2006 and 2011, Bedroc showed that groundwater levels had been relatively stable even though pumping by Bedroc was fairly constant.[229] Bedroc showed photo evidence of evapotranspiration occurring around the Bedroc site, pointing to areas of white surface soils and green occurring in the photo as evidence of salt residue and phreatophytes, both occurring as a result of shallow groundwater evaporation.[230] The area is estimated to be about 2,200 acres, and the ET range is estimated to be 0.2 to 0.3 feet per year.[231] This results in an estimate of 400 to 600 afa of groundwater that potentially could be captured every year without pulling groundwater from storage.[232] If pumping in this area exceeded ET, water levels to the east of Bedroc would be dropping.[233]

Bedroc considered the alluvial system at its location to be a separate aquifer from the carbonate-rock aquifer in the LWRFS.[234] CBD in its report also supports this conclusion, suggesting that some groundwater can be withdrawn from the Coyote Spring Valley alluvial aquifer system because that system is disconnected from and not responsible for substantial recharge to the carbonate-rock aquifer.[235] SNWA testified similarly during the hearing.[236]

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[224] Tr. 1724–1725, 1755.
[225] Tr. 1755.
[226] Bedroc Closing, pp. 5–9.
[227] Tr. 1735.
[228] *Id.*
[229] Tr. 1735–1736.
[230] Tr. 1734, 1738.
[231] Tr. 1739.
[232] Tr. 1739.
[233] Tr. 1739. *See also* Bedroc Closing, p. 8.
[234] Tr. 1746.
[235] Bedroc Ex. 2, p. 5.
[236] Tr. 1024.

Relying on a lack of connection between pumping at Bedroc and the carbonate-rock aquifer, Bedroc asserted that there is no likely impact to the Warm Springs area caused by Bedroc.[237] Bedroc compared groundwater elevations over time in two alluvial wells, CSV-3009M and CSVM-7, and showed an upward trend in groundwater elevations.[238] But, when comparing groundwater elevations of two monitoring wells in different sources, CSVM-7 in the alluvium and CSVM-4 in the carbonate-rock aquifers, the carbonate-rock aquifer well elevations showed a decline during the Order 1169 aquifer test, but the alluvial well elevation rose during the same period and leveled off after the conclusion of the test.[239] Bedroc concluded that these data illustrate 1) the hydraulic disconnect between the local alluvial aquifer and carbonate-rock aquifer and 2) if historical alluvial pumping at Bedroc has not impacted water levels in nearby alluvial wells, then there is likely no impact to spring or streamflow in the Muddy River Springs Area.

Finally, Bedroc stated that managing all users in the region under the same system would arbitrarily impact users whose water neither comes from the regional carbonate-rock aquifer system nor impacts the springs of concern downstream.[240] It urged caution in allowing transfer of water rights between alluvial and carbonate-rock aquifers due to potential impacts on senior users that are using local recharge that may not sustain pumping from additional users.[241] Transfers of senior alluvial rights from the Muddy River Springs Area to the area near Bedroc should be considered on a case-by-case basis to protect Bedroc's senior water rights.[242]

III. PUBLIC COMMENT

WHEREAS, following the conclusion of the Interim Order 1303 hearing, opportunity for public comment was offered, including the opportunity to submit written public comment, which was due to be submitted to the Division no later than December 3, 2019. Lincoln County Board of

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[237] Bedroc Closing, p.11. *See also* SNWA testimony of Andrew Burns that pumping at Bedroc wells is not likely to impact the carbonate system or the Muddy River. Tr. 1024–1025.
[238] Bedroc Closing, p. 12. *See also* Tr. 1736–1737, 1752.
[239] Tr. 1737–1738.
[240] Bedroc Ex. 2, pp. 2–4.
[241] *Id.*, p. 6.
[242] Tr. 1740.

County Commissioners submitted written public comment in addition to the closing argument submitted by LC-V.[243]

IV. AUTHORITY AND NECESSITY

WHEREAS, NRS 533.024(1)(c) directs the State Engineer "to consider the best available science in rendering decisions concerning the availability of surface and underground sources of water in Nevada."

WHEREAS, in 2017 the Nevada Legislature added NRS 533.024(1)(e), declaring the policy of the State to "manage conjunctively the appropriation, use and administration of all waters of this State regardless of the source of the water."

WHEREAS, NRS 534.020 provides that all waters of the State belong to the public and are subject to all existing rights.

WHEREAS, as demonstrated by the results of the Order 1169 aquifer test and in the data collected in the years since the conclusion of the aquifer test, the LWRFS exhibits a direct hydraulic connection that demonstrates that conjunctive management and joint administration of these groundwater basins is necessary and supported by the best available science.[244]

WHEREAS, the pre-development discharge of 34,000 acre-feet of the fully appropriated Muddy River system plus the more than 38,000 acre-feet of groundwater appropriations within the LWRFS greatly exceed the total water budget that may be developed without impairment of senior existing rights or proving detrimental to the public interest.

WHEREAS, the available groundwater supply within the LWRFS that can be continually pumped over the long-term is limited to the amount that may be developed without impairing existing senior rights, rights on the Muddy River or adversely affecting the public interest in

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[243] *See* Board of County Commissioners, Lincoln County, Nevada, *Public Comment to Interim Order #1303 Hearing, Reports, and Evidence on the Lower White River Flow System,* Hearing on Interim Order 1303, official records of the Division of Water Resources.

[244] *See, e.g.,* NSE Ex. 245; NSE Ex. 248; NSE Ex. 256; NSE Ex. 252; NSE Ex. 282, *Federal Bureaus Order 1169 Report Selected References: Comparison of Simulated and Observed Effects of Pumping from MX-5 Using Data Collected to the Endo of the Order 1169 Test, and Prediction of the Rates of Recovery from the Test, TetraTech, 2013,* Hearing on Interim Order 1303, official records of the Division of Water Resources. *See also, e.g.*, CBD Ex. 3; MVWD Exs. 3–4; MVIC Ex. 1; NCA Ex. 1, SNWA Exs. 7–9; USFWS Exs. 5–6; NPS Exs. 2–3.

protection of the endangered Moapa dace and the habitat necessary to support the management and recovery of the Moapa dace.

WHEREAS, pursuant to NRS 532.120, the State Engineer is empowered to make such reasonable rules and regulations as may be necessary for the proper and orderly execution of the powers conferred by law.

WHEREAS, pursuant to NRS 534.110(6) the State Engineer is directed to conduct investigations in groundwater basins where it appears that the average annual replenishment of the groundwater is insufficient to meet the needs of all water right holders, and if there is such a finding, the State Engineer may restrict withdrawals to conform to priority rights.

WHEREAS, within an area that has been designated by the State Engineer, as provided for in NRS Chapter 534, and specifically, NRS 534.120, where, in the judgment of the State Engineer, the groundwater basin is being depleted, the State Engineer in his or her administrative capacity may make such rules, regulations and orders as are deemed essential for the welfare of the area involved.[245]

WHEREAS, the State Engineer has the authority to hold a hearing to take evidence and the interpretation of the evidence with respect to its responsibility to manage Nevada's water resources and to allow willing participants to present evidence and testimony regarding the conclusions relating to the questions presented in Interim Order 1303. The State Engineer recognizes that the MBOP is a federally recognized tribe, and that its participation in the hearing was to facilitate the understanding of the interpretation of data with respect to the Interim Order 1303 solicitation.

V. ENDANGERED SPECIES ACT

WHEREAS, the Endangered Species Act (ESA), 16 U.S.C. §1531 et seq. is a federal law designed to serve the purpose of identifying, conserving and ultimately recovering species declining toward extinction.[246] Specifically, while the ESA is primarily a conservation program, a critical element of the conservation component seeks to encourage cooperation and coordination

[245] *See also* NRS 534.030, NRS 534.110.
[246] 16 U.S.C. § 1531(a)–(b).

with state and local agencies.[247] The responsibility of enforcement and management under the ESA rests predominately with the federal government; however, the ultimate responsibility is shared.[248]

WHEREAS, the ESA makes it unlawful for any person to "take" an endangered species – or to attempt to commit, solicit another to commit, or cause to be committed, a taking.[249] The term "person" is broadly defined to include the State and its instrumentalities.[250] "Take" encompasses actions that "harass, harm" or otherwise disturb listed species, including indirect actions that result in a take.[251] For example, a state regulator is not exempted from the ESA for takings that occur as a result of a licensee's regulated activity. States have been faced with the impediment of their administrative management actions being subservient to the ESA. For example, the Massachusetts Division of Marine Fisheries was subject to an injunction prohibiting it from issuing commercial fishing licenses because doing so would likely lead to the taking of an endangered species.[252] In *Strahan v. Coxe*, the court's decision relied on reading two provisions of the ESA— the definition of the prohibited activity of a "taking" and the causation by a third party of a taking— "to apply to acts by third parties that allow or authorize acts that exact a taking and that, but for the permitting process, could not take place."[253] Although Massachusetts was not the one directly causing the harm to the endangered species, the court upheld the injunction because "a governmental third party pursuant to whose authority an actor directly exacts a taking of an endangered species may be deemed to have violated the provisions of the ESA."[254] At least three other circuits have held similarly.[255] In each case, "the regulatory entity purports to make lawful an activity that allegedly violates the ESA."[256] Thus the action of granting the permit for the regulated activity has been considered an indirect cause of a prohibited taking under the ESA.

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[247] 16 U.S.C. § 1531(c); 16 U.S.C. § 1536.
[248] 16 U.S.C.A. § 1536.
[249] 16 U.S.C.A. § 1538(g).
[250] 16 U.S.C.A. § 1532(13).
[251] 16 U.S.C.A. § 1532(19). The term "harm" is defined by regulation, 50 C.F.R. § 17.3 (1999).
[252] *Strahan v. Coxe*, 127 F.3d 155 (1st.Cir.1997), *cert denied* 525 U.S. 830 (1998).
[253] *Id.*, p. 163.
[254] *Id.*
[255] *See Sierra Club v. Yeutter*, 926 F.2d 429 (5th Cir.1991); *Defenders of Wildlife v. EPA*, 882 F.2d 1294 (8th Cir. 1989); *Loggerhead Turtle v. County Council*, 148 F.3d 1231 (11th Cir.1998); *Palila v. Hawaii Dept. of Land & Natural Resources*, 852 F.2d 1106 (9th Cir.1988).
[256] *Loggerhead Turtle*, 148 F.3d at 1251.

WHEREAS, the use of water in Nevada is a regulated activity.[257] It is the responsibility of the State to manage the appropriation, use and administration of all waters of the state.[258] Based on *Strahan* and similar decisions, the act of issuing a permit to withdraw groundwater that reduces the flow of the springs that form the habitat of the Moapa dace and were to result in harm to the Moapa dace exposes the Division, the State Engineer and the State of Nevada to liability under the ESA.

WHEREAS, a USFWS biological opinion for the MOA found that the reduction in spring flow from the warm springs could impact the dace population in multiple ways. First, the USFWS found that declines in groundwater levels will reduce the flow to the Warm Springs area and allow for cooler groundwater seepage into streams. With reduced spring flow, Moapa dace habitat is reduced.[259] Additionally, USFWS determined that the reduced flows of warm water from the springs will also result in cooler water available throughout the dace habitat, reducing spawning habitat and resulting in a population decline.[260]

WHEREAS, based upon the testimony and evidence offered in response to Interim Order 1303, it is clear that it is necessary for spring flow measured at the Warm Springs West gage to flow at a minimum rate of 3.2 cfs in order to maintain habitat for the Moapa dace.[261] A reduction of flow below this rate may result in a decline in the dace population. This minimum flow rate is not necessarily sufficient to support the rehabilitation of the Moapa dace.[262]

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[257] NRS 533.030; 533.325; 534.020.
[258] NRS 533.325; 533.024(1)(e); 534.020.
[259] USFWS Ex. 5, pp. 50–52.
[260] SNWA Ex. 8, pp. 6-2 through 6-3; SNWA Ex. 40, *Hatten, J.R., Batt, T.R., Scoppettone, G.G., and Dixon, C.J., 2013, An ecohydraulic model to identify and monitor Moapa dace habitat. PLoS ONE 8(2):e55551, doi:10.1371/journal.pone.0055551.*, Hearing on Interim Order 1303, official records of the Division of Water Resources; SNWA Ex. 41, *U.S. Fish and Wildlife Service, 2006a, Intra-service programmatic biological opinion for the proposed Muddy River Memorandum of Agreement regarding the groundwater withdrawal of 16,100 acre-feet per year from the regional carbonate aquifer in Coyote Spring Valley and California Wash basins, and establish conservation measures for the Moapa Dace, Clark County, Nevada. File No. 1-5-05 FW-536, January 30, 2006.*, Hearing on Interim Order 1303, official records of the Division of Water Resources.
[261] Tr. 1127–1128.
[262] Tr. 401–402, 1147, 1157–1158.

WHEREAS, the ESA prohibits any loss of Moapa dace resulting from actions that would impair habitat necessary for its survival. Some groundwater users are signatories to an MOA that authorizes incidental take of the Moapa dace; however, the State Engineer and many other groundwater users are not covered by the terms of the MOA.[263] Not only would liability under the ESA for a "take" extend to groundwater users within the LWRFS, but would so extend to the State of Nevada through the Division as the government agency responsible for permitting water use.

WHEREAS, the State Engineer concludes that it is against the public interest to allow groundwater pumping from the LWRFS that will reduce spring flow in the Warm Springs area to a level that would impair habitat necessary for the survival of the Moapa dace and could result in take of the endangered species.

VI. GEOGRAPHIC BOUNDARY OF THE LWRFS

WHEREAS, the geographic boundary of the hydrologically connected groundwater and surface water systems comprising the LWRFS, as presented in Interim Order 1303, encompasses the area that includes Coyote Spring Valley, Muddy River Springs Area, California Wash, Hidden Valley, Garnet Valley and the northwest portion of the Black Mountains Area.[264] The rationale for incorporating these areas into a single administrative unit included the presence of a distinct regional carbonate-rock aquifer that underlies and uniquely connects these areas; the remarkably flat potentiometric surface observed within the area; the diagnostic groundwater level hydrographic pattern exhibited by monitoring wells distributed across the area; and the area-wide diagnostic water level response to pumping during the Order 1169 aquifer test. Each of these characteristics were previously identified and examined in the hydrological studies and subsequent hearing that followed the completion of the Order 1169 aquifer test. Indeed, these characteristics were the foundational basis for the State Engineer's determination in Rulings 6254–6261 that the

[263] NSE Ex. 236; SNWA Ex. 8, pp. 5-1 through 5-8.
[264] *See* NSE Ex. 1, p. 6.

close hydrologic connection[265] and shared source and supply of water in the LWRFS required joint management.[266]

WHEREAS, evidence and testimony presented during the Interim Order 1303 hearing indicated a majority consensus among stakeholder participants that this originally defined area is appropriately combined into a single unit.[267] Evidence and testimony was also presented on whether to add adjacent basins, or parts of basins to the administrative unit; to modify boundaries within the existing administrative unit; or to eliminate the common administrative unit boundaries. The State Engineer has considered this evidence and testimony on the basis of a common set of criteria that are consistent with the original characteristics considered critical in demonstrating a close hydrologic connection requiring joint management in Rulings 6254–6261 and more specifically, include the following:

1) Water level observations whose spatial distribution indicates a relatively uniform or flat potentiometric surface are consistent with a close hydrologic connection.

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[265] The State Engineer notes that the terminology "***hydrologic*** connection" and "***hydraulic*** connection" have been used by different parties sometimes interchangeably, and commonly with nearly the same meaning. The State Engineer considers a hydraulic connection to be intrinsically tied to the behavior and movement of water. With regard to aquifers, it may be thought of as the natural or induced movement of water through permeable geologic material. The degree of hydraulic connection can be considered a measure of the interconnection between locations as defined by a cause and effect change in potentiometric surface or a change in groundwater inflow or outflow that reflects characteristics of both the aquifer material and geometry, and groundwater behavior. It is commonly characterized by a response that is transmitted through the aquifer via changes in hydraulic head, ie., groundwater levels. Hydrologic connections may include hydraulic connections but can also represent more complex system interactions that can encompass all parts of the water cycle, and in some cases may focus on flow paths, water budgets, geochemical interactions, etc. The State Engineer's use of the term "***close*** hydrological connection" is intended to encompass and include a direct hydraulic connection that is reflected in changes in groundwater levels in response to pumping or other fluxes into or out of the aquifer system within a matter of days, months, or years. The closeness, strength, or directness of the response is indicated by timing, with more distinct and more immediate responses being more "close".

[266] *See* NSE Ex. 14, p. 12, 24.

[267] *See* Participant testimony from SNWA (Tr. 875–876), CNLV (Tr. 1418), and CSI (Tr. 95–96). Several other participants agreed, too, that the State Engineer's delineation of the LWRS as defined in Interim Order 1303 was acceptable. *See also* Bedroc Closing, p. 12, Church Closing, p. 1; Technichrome Response, p. 1. Other participants recommended larger areas be included within the LWRFS boundary. *See* Tr. 261–266 (USFWS), 1571–1572 (CBD), 1697–1698 (MVIC). *See also* NV Energy Closing, pp. 2–3; NPS Closing pp. 2–5.

2) Water level hydrographs that, in well-to-well comparisons, demonstrate a similar temporal pattern, irrespective of whether the pattern is caused by climate, pumping, or other dynamic is consistent with a close hydrologic connection.

3) Water level hydrographs that demonstrate an observable increase in drawdown that corresponds to an increase in pumping and an observable decrease in drawdown, or a recovery, that corresponds to a decrease in pumping, are consistent with a direct hydraulic connection and close hydrologic connection to the pumping location(s).

4) Water level observations that demonstrate a relatively steep hydraulic gradient are consistent with a poor hydraulic connection and a potential boundary.

5) Geological structures that have caused a juxtaposition of the carbonate-rock aquifer with low permeability bedrock are consistent with a boundary.

6) When hydrogeologic information indicate a close hydraulic connection (based on criteria 1-5), but limited, poor quality, or low resolution water level data obfuscate a determination of the extent of that connection, a boundary should be established such that it extends out to the nearest mapped feature that juxtaposes the carbonate-rock aquifer with low-permeability bedrock, or in the absence of that, to the basin boundary.

WHEREAS, some testimony was presented advocating to include additional areas to the LWRFS based principally on water budget considerations and/or common groundwater flow pathways.[268] Indeed, some participants advocate to include the entire White River Flow System, or other basins whose water may ultimately flow into or flow out of the system.[269] Other participants used, but did not rely on, water budget and groundwater flow path considerations to support their analysis. Like those participants, the State Engineer agrees that while water budget and groundwater flow path analysis are useful to demonstrate a hydrologic connection, additional information is required to demonstrate the relative strength of that connection. Thus, the State

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[268] *See e.g.*, CNLV Ex. 3, p. 33, Tr. 1430; NPS Closing, p. 2. *See also* Tr. 253–257; Sue Braumiller, *Interpretations of available Geologic and Hydrologic Data Leading to Responses to Questions Posed by the State Engineer in Order 1303 regarding Conjunctive Management of the Lower White River Flow System* (USFWS Braumiller presentation), slide 11, Item 6., bullet 1, official records of the Division of Water Resources; MBOP Ex. 2, p. 11.

[269] *See e.g.*, GBWN Report, pp. 1–2.

Engineer recognizes that while any hydrologic connection, weak or strong, needs to be considered in any management approach, many of the connections advocated based principally on a water budget or flow path analysis, including those between nearby basins like Las Vegas Valley and Lower Meadow Valley Wash, are not demonstrated to provide for the uniquely close hydraulic connection that require joint management.

WHEREAS, in their closing statement, NPS proposes that all adjacent hydrographic areas to the original Interim Order 1303 administrative unit where a hydraulic interconnection exists, whether weak or strong, be included in the LWRFS.[270] It does so to alleviate the need for developing new management schemes for the excluded remnants and to provide for appropriate management approaches based on new information and improved understanding of differing degrees of hydraulic interconnection in various sub-basins. The State Engineer agrees with this logic, up to a point, and has applied these concepts to the extent practical as demonstrated in his criteria for determining the extent of the LWRFS. However, the State Engineer also finds that there must be reasonable and technically defensible limits to the geographic boundary. Otherwise, if management were to be based on the entire spectrum of weak to strong hydraulic interconnection, then exclusion of an area from the LWRFS would require absolute isolation from the LWRFS; every sub-basin would have its own management scheme based on some measure of its degree of connectedness; and proper joint management would be intractable.

WHEREAS, evidence and testimony was also presented by the NPS regarding the specific inclusion of the entirety of the Black Mountains Area in the LWRFS.[271] The State Engineer recognizes that there may be a hydrologic connection between the Black Mountains Area and upgradient basins that are sources of inflow, and that outflow from the LWRFS carbonate-rock aquifer may contribute to discharge from Rogers and Blue Point Springs. However, the State Engineer does not find that this supports inclusion of the entirety of the Black Mountains Area. This determination is made based on the lack of contiguity of the carbonate-rock aquifer into this

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[270] NPS Closing, pp. 3–5.

[271] NPS Closing pp. 3–4. *See also* Tr.534, 555–569; Richard K. Waddell, Jr., *Testimony of Richard K. Waddell on behalf of the National Park Service*, presentation during hearing for Interim Order 1303 (NPS Presentation), slides 32–46, official records of the Division of Water Resources.

area,[272] the difference in observed water level elevations compared to those in adjacent carbonate-rock aquifer wells to the north and west,[273] and the absence of observed diagnostic hydrographic patterns and responses that define the uniquely close hydraulic connection that characterizes the LWRFS.[274]

WHEREAS, evidence and testimony presented by USFWS relied principally on SeriesSEE analysis of water level responses submitted by the Department of Interior Bureaus following the Order 1169 aquifer test to establish the general extent of the LWRFS. This was supported by the application of hydrogeology and principles of groundwater flow to define specific boundary limits to the LWRFS. It proposed that most of the Lower Meadow Valley Wash be considered for inclusion in the LWRFS based on the potential geologic continuity between carbonate rocks underlying the Lower Meadow Valley Wash and the carbonate-rock aquifer underlying Coyote Spring Valley, the Muddy River Springs Area, and California Wash.[275] Additionally, it asserted that the alluvial aquifer system in Lower Meadow Valley Wash contributes to and is connected to both the Muddy River and the alluvial aquifer system in California Wash. The State Engineer finds that while carbonate rocks may underlie the Lower Meadow Valley Wash and be contiguous with carbonate rocks to the south and west, data are lacking to characterize the potential hydraulic connection that may exist. Regarding the hydraulic connection between the Lower Meadow Valley Wash alluvial aquifer and the LWRFS, the State Engineer agrees with USFWS that a connection exists, but finds that any impacts related to water development in the Lower Meadow Valley Wash alluvial aquifer are localized, and unrelated to the carbonate-rock aquifer, and can be appropriately managed outside the LWRFS joint management process.

WHEREAS, NCA advocated for the exclusion of the portion of the Black Mountains Area from the LWRFS that contains their individual production wells. NCA premise this primarily on testimony and analysis performed by SNWA with respect to the impact of pumping from this area

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[272] *See* CSI Ex. 14, Plate 2, Map and Plate 4, Cross section K–K', in Peter D. Rowley et. al., *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.
[273] *See, e.g.*, USFWS Ex. 5, p. 30.
[274] *Id.*, p. 17.
[275] *Id.*, pp. 19–24.

on discharge to the Warm Springs area.[276] It also used hydrogeologic and water level response information to conclude that strike-slip faulting and a weak statistical correlation between water levels at NCA well EBM-3 and EH-4 in the Warm Springs area support a boundary to the north of the NCA production wells. While the State Engineer finds logic in NCA's position, other testimony describing flaws in the SNWA analysis make for a compelling argument against relying on SNWA's statistically-based results.[277] The substantial similarity in observed water level elevation and water level response at EBM-3 compared to EH-4[278] and limitations in relying on poor resolution water level measurements for statistical or comparative analysis[279] requires a more inclusive approach that places the boundary to the south of the NCA production wells to a geological location that coincides with the projection of the Muddy Mountain Thrust. This more closely coincides with the measurable drop in water levels recognized to occur south of the NCA wells, between EBM-3 and BM-ONCO-1 and 2, that is indicative of a hydraulic barrier or zone of lower permeability.[280] It also better honors the State Engineer's criteria by acknowledging the uncertainty in the data while reflecting a recognized physical boundary in the carbonate-rock aquifer. Specifically, this shall be defined to include that portion of the Black Mountains Area lying within portions of Sections 29, 30, 31, 32, and 33, T.18S., R.64E., M.D.B.&M.; portions of Sections 1, 11, 12, 14, 22, 23, 27, 28, 33, and 34 and all of Sections 13, 24, 25, 26, 35, and 36, T.19S., R.63E., M.D.B.&M.; portions of Sections 4, 6, 9, 10, and 15 and all of Sections 5, 7, 8, 16, 17, 18, 19, 20, 21, 29, 30, and 31, T.19S., R.64E., M.D.B.&M.[281]

WHEREAS, numerous participants advocated to include Kane Springs Valley in the LWRFS basins.[282] Other participants advocated to exclude Kane Springs Valley.[283] Several expert witnesses recommended the exclusion of Kane Springs Valley based on their characterization of water level elevation data, temporal hydrographic response patterns, geochemistry, and/or the

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[276] *See,* Tr. 1622, 1624; NCA Closing.
[277] *See, e.g.,* Tr. 1467–1469 CNLV presentation, slides 21–23; Tr. 1784–1786; NV Energy presentation, slides 32–33.
[278] NCA Closing, p. 18, Figure 3.
[279] NCA Closing, p. 8.
[280] *See e.g.,* USFWS Ex. 5.
[281] See map of the LWRFS Hydrographic Basin as defined by this Order, Attachment A.
[282] *See, e.g.,* NV Energy Closing, p. 2; NCA Closing, p. 10–14; MVWD Closing, p. 2–8.
[283] *See e.g., Written Closing Statement of Lincoln County Water District and Vidler Water Company, Inc.* (LC-V Closing), Hearing on Interim Order 1303, official records of the Division of Water Resources, p. 3–6; CSI Closing, p. 2.

geophysically-inferred presence of structures that may act as flow barriers. Others recommended inclusion based on the same or similar set of information. Water level elevations observed near the southern edge of Kane Springs Valley are approximately 60 feet higher than those observed in the majority of carbonate-rock aquifer wells within the LWRFS to the south; consistent with a zone of lower permeability.[284] Some experts suggested that the hydrographic response pattern exhibited in wells located in the southern edge of Kane Springs Valley is different compared to that exhibited in wells in the LWRFS, being muted, lagged, obscured by climate response, or compromised by low-resolution data.[285] In this regard, the State Engineer recognizes these differences. However, he finds that the evidence and testimony supporting a similarity in hydrographic patterns and response as provided by expert witnesses, like that of the NPS, to be persuasive.[286] Namely, that while attenuated, the general hydrographic pattern observed in southern Kane Springs Valley reflects a response to Order 1169 pumping, consistent with a close hydraulic connection with the LWRFS. The State Engineer also finds that occurrence of the carbonate-rock aquifer in the southern Kane Springs Valley indicates that there is no known geologic feature at or near the southern Kane Springs Valley border that serves to juxtapose the carbonate-rock aquifer within the LWRFS with low permeability rocks in Kane Springs Valley.[287] He also finds that while geologic mapping[288] indicates that the carbonate-rock aquifer does not extend across the northern portion of the Kane Springs Valley, there is insufficient information available to determine whether the non-carbonate bedrock interpreted to underlie the northern part of the Kane Springs Valley represents low-permeability bedrock that would define a hydraulic boundary to the carbonate-rock aquifer.[289] After weighing all of the testimony and evidence relative to his criteria

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[284] LC-V Closing, p. 7.
[285] *See, e.g.*, LC-V Closing, pp. 5–6; LC-V Ex. 1, pp. 3-3–3-4; CSI Closing, pp. 5–6.
[286] *See* Tr. 524–55. *See, e.g.*, NPS presentation, slides 23–27.
[287] Pursuant to the criteria requiring joint management of hydrographic basins and the sixth criteria establishing that the boundary should extend to the nearest mapped feature that juxtaposes the carbonate-rock aquifer with low-permeability bedrock, or where a mapped feature cannot be adequately identified, to the basin boundary, the State Engineer includes the entirety of Kane Springs Valley.
[288] *See, e.g.*, NSE Ex. 12; Page, W.R., Dixon, G.L., Rowley, P.D., and Brickey, D.W., 2005, *Geologic Map of Parts of the Colorado, White River, and Death Valley Groundwater Flow Systems, Nevada, Utah, and Arizona*: Nevada Bureau of Mines and Geology Map 150, Plate plus text.
[289] *See, e.g.*, SNWA Ex. 7, pp. 2-4, 2-5, 2-10, 2-11, and 4-1, that describe volcanic rocks as important aquifers, and calderas as both flow paths and barriers depending on structural controls

for inclusion into the LWRFS, the State Engineer finds that the available information requires that Kane Springs Valley be included within the geographic boundary of the LWRFS.

WHEREAS, limited evidence and testimony were provided by participants advocating to either include or exclude the northern portion of Coyote Spring Valley. The State Engineer finds that while information such as that provided by Bedroc is convincing and supports a finding that local, potentially discrete aquifers may exist in parts of the northern Coyote Springs Valley, his criteria for defining the LWRFS calls for the inclusion of the entirety of the basin in the LWRFS. However, the State Engineer also acknowledges that there may be circumstances, like in the northern Coyote Spring Valley, where case-by-case considerations for proper management are warranted.

WHEREAS, evidence and testimony from Georgia-Pacific and Republic, and MBOP advocated against creating a single LWRFS administrative unit. Their arguments were principally based on concerns that there was insufficient consensus on defining the LWRFS geographic boundaries and that there were inherent policy implications to establishing an LWRFS administrative unit. MBOP recommended continuing to collect data and focusing on areas of scientific consensus. Georgia-Pacific and Republic asserted that boundaries are premature without additional data and without a legally defensible policy and management tools in place. They expressed concern that creating an administrative unit at this time inherently directs policy without providing for due process. The State Engineer has considered these concerns and agrees that additional data and improved understanding of the hydrologic system is critical to the process. He also believes that the data currently available provide enough information to delineate LWRFS boundaries, and that an effective management scheme will provide for the flexibility to adjust boundaries based on additional information, retain the ability to address unique management issues on a sub-basin scale, and maintain partnership with water users who may be affected by management actions throughout the LWRFS.

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to flow, citing Peter D. Rowley, and Dixon, G.L., 2011, *Geology and Geophysics of Spring, Cave, Dry Lake, and Delamar Valleys, White Pine and Lincoln Counties, and Adjacent Areas, Nevada and Utah: The Geologic Framework of Regional Flow Systems*,.

WHEREAS, evidence and testimony support the delineation of a single hydrographic basin as originally defined by the State Engineer in Interim Order 1303, with the adjustment of the Black Mountain Area boundary and the addition of Kane Springs Valley. The State Engineer acknowledges that special circumstances will exist with regard to both internal and external management. Water development both inside and outside of the perimeter of the LWRFS will continue to be evaluated on the best available data and may become subject to or excluded from the constraints or regulations of the LWRFS.

WHEREAS, the geographic extent of the LWRFS is intended to represent the area that shares both a unique and close hydrologic connection and virtually all of the same source and supply of water, and therefore will benefit from joint and conjunctive management. In that light, the State Engineer recognizes that different areas, jointly considered for inclusion into the LWRFS, have been advocated both to be included and to be excluded by the different hearing participants based on different perspectives, different data subsets, and different criteria. For the Muddy River Springs Area, California Wash, Garnet Valley, Hidden Valley, Coyote Spring Valley, and a portion of the Black Mountain Area, there is a persuasive case previously laid out in Rulings 6254–6261, and the consensus amongst the participants support their inclusion in the LWRFS. For other sub-basins such as Kane Springs Valley and the area around the NCA production wells in the Black Mountain Area, there is persuasive evidence to support their inclusion or exclusion; however, the State Engineer's criteria and available data mandate their inclusion. Their inclusion in the LWRFS provides the opportunity for conducting additional hydrologic studies in sub-basins such as these, to determine the degree to which water use would impact water resources in the LWRFS and to allow continued participation by holders of water rights in future management decisions. Thus, these sub-basins, and any other portions of the LWRFS that may benefit from additional hydrological study, can be managed more effectively and fairly within the LWRFS. For other basins whose inclusion was advocated, such as the northern portion of Las Vegas Valley and the Lower Meadow Valley Wash, the State Engineer finds that data do not exist to apply his criteria, and therefore they cannot be considered for inclusion into the LWRFS. These types of areas may require additional study and special consideration regarding the potential effects of water use in these areas on water resources within the LWRFS.

VII. AQUIFER RECOVERY SINCE COMPLETION OF THE ORDER 1169 AQUIFER TEST

WHEREAS, during the Order 1169 aquifer test an average of 5,290 afa were pumped from the carbonate-rock aquifer wells in Coyote Spring Valley and a cumulative total of 14,535 afa were pumped throughout the Order 1169 study basins. A portion of this total, approximately 3,840 acre-feet per year, was pumped from the alluvial aquifer in the Muddy River Springs Area.[290] In the years since completion of the Order 1169 aquifer test, pumping from wells in the LWRFS has gradually declined.[291] Pumping in 2013-2014 averaged 12,635 afa; pumping in 2015-2017 averaged 9,318 afa.[292] Pumpage inventories for 2018 that were published after the completion of the hearing report a total of 8,300 afa.[293] Pumping from alluvial aquifer wells in the Muddy River Spring Area has consistently declined since closure of the Reid Gardner power plant beginning in 2014, while pumping from the carbonate-rock aquifer since the completion of the aquifer test has consistently ranged between approximately 7,000 and 8,000 afa.

WHEREAS, the information obtained from the Order 1169 aquifer test and in the years since the conclusion of the test demonstrates that while, following conclusion of the aquifer test, there was a recovery of groundwater levels, the carbonate-rock aquifer has not recovered to pre-Order 1169 test levels.[294] Evidence and testimony submitted during the 2019 hearing does not refute the conclusions made by the State Engineer in Rulings 6254–6261 regarding interpretations of the Order 1169 aquifer test results, which were based on observations and analysis by multiple technical experts. Groundwater level recovery reached completion approximately two to three years after the Order 1169 aquifer test pumping ended.[295]

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[290] NSE Ex. 1, p. 4.
[291] *See, e.g.* NSE Ex. 50, *Pumpage Report Coyote Spring Valley 2017*; NSE Ex. 67, *Pumpage Report Black Mountains Area 2017*; NSE Ex. 84, *Pumpage Report Garnet Valley Area 2017*; NSE Ex. 86, *Pumpage Report California Wash Area 2017*; Ex. 88, *Pumpage Report Muddy River Springs Area 2017*, Hearing on Interim Order 1303, official records of the Division of Water Resources.
[292] *Id.*
[293] *Id.*
[294] *See, e.g.*, SNWA Ex. 7, pp. 5-17–5-18, 8-2; NPS Closing, p. 4; MVWD Closing, p. 8. *See also* Tr. 1807; NV Energy presentation, p. 11.
[295] SNWA Ex, 7, pp. 5-17–5-18; NVE Ex. 1, p. 2

WHEREAS, several participants testified about the effects of drought and climate on the recovery of groundwater levels and spring discharge after the Order 1169 aquifer test. Droughts, or periods of drier than normal conditions that last weeks, months, or years can lead to declines in groundwater levels.[296] The LWRFS is within National Oceanic and Atmospheric Administration's Nevada Climate Division 4 (Division 4). Precipitation records for Division 4 from 2006 to the 2019 season records indicate that 10 of those 14 seasons received lower than average precipitation.[297] Despite low precipitation, several participants submitted evidence that water levels continue to rise under current climate conditions in other areas with a relative lack of pumping that are tributary to the LWRFS, such as Dry Lake Valley, Delamar Valley, Garden Valley, Tule Desert, Dry Lake Valley, and other areas.[298] These rises have been attributed to efficient winter recharge that has occurred despite low cumulative precipitation.[299] Based on these observations, it was argued that the continued stress of pumping in the LWRFS carbonate-rock aquifer is limiting the recovery of water levels.[300] The State Engineer acknowledges that spring discharge is affected by both pumping and climate, and finds that groundwater levels remain a useful tool for monitoring the state of the aquifer system in the LWRFS regardless of the relative contribution of climate and drought to the measured groundwater levels. The State Engineer only has the authority to regulate pumping, not climate, in consideration of its potential to cause conflict or to be detrimental to the public interest and must do so regardless of the relative contributing effects of climate.

WHEREAS, evidence and testimony during the 2019 hearing was divided on whether water levels in the Warm Springs area and carbonate-rock aquifer indicate the system has reached or is approaching equilibrium,[301] or is still in a state of decline.[302] Hydrographs and evidence presented show that water levels at well EH-4 near the Warm Springs area have been relatively stable for several years following recovery from the Order 1169 aquifer test.[303] However, other

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[296] *See* USGS, 1993, *Drought,* US Geological Survey Open File Report 93-642, accessible at https://bit.ly/93-642, (last accessed June 6, 2020).
[297] SNWA Ex. 7, pp. 4-1–4-4.
[298] Tr. 577, 304–307.
[299] NPS Ex. 3, Appendix A.
[300] *See, e.g.*, SNWA Closing, p. 11. NPS Closing, p. 4. *See also* Tr. 642, 644–45, 1545.
[301] MVWD Closing, pp. 8–9. *See also* NV Energy Closing, p. 3; CNLV Closing, pp. 5–7.
[302] SNWA Closing, pp. 11–12. NPS Closing, pp. 4–5.
[303] SNWA Ex. 7, pp. 5–7.

carbonate-rock aquifer wells located further away from the Warm Springs area such as CSVM-1, TH-2, GV-1, and BM-DL-2 appear to have reached peak recovery from the Order 1169 aquifer test in 2015-2016 and have exhibited downward trends for the past several years.[304] The State Engineer agrees that water levels in the Warm Springs area may be approaching steady state with current pumping conditions. However, the trend is of insufficient duration to make this determination with absolute assurance and continued monitoring is necessary to determine if this trend continues or if water levels are continuing to decline slowly.

VIII. LONG-TERM ANNUAL QUANTITY OF WATER THAT CAN BE PUMPED

WHEREAS, the evidence and testimony presented at the 2019 hearing did not result in a consensus among experts of the long-term annual quantity of groundwater that can be pumped. Recommendations range from zero to over 30,000 afa, though most experts agreed that the amount must be equal to or less than the current rate of pumping. There is a near consensus that the exact amount that can be continually pumped for the long-term cannot be absolutely determined with the data available and that to make that determination will require more monitoring of spring flows, water levels, and pumping amounts over time.

WHEREAS, evidence and testimony were presented arguing that the regional water budget demonstrates that far more groundwater is available for development within the LWRFS than is currently being pumped. CSI argues that the total amount of groundwater available for extraction from the LWRFS may be up to 30,630,[305] which is an estimate of the entirety of natural discharge from the system that occurs through groundwater evapotranspiration and subsurface groundwater outflow. Nearly all other experts disagreed that pumping to that extent could occur without causing harm to the Moapa dace or conflict with senior Muddy River decreed rights. The disagreement is not about the amount of the water budget, but rather the importance of the water budget in determining the amount of groundwater in the LWRFS that can continually be pumped,[306] not the amount of inflow and outflow to the system. In addition, availability of groundwater for pumping based on water budget should consider whether the same water is appropriated for use in upgradient and downgradient basins, and CSI did not account for this.

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[304] *Id.*
[305] CSI Closing, p. 2.
[306] *See e.g.*, SNWA Ex. 9, p. 24.; MVWD Ex. 3, p. 4; NPS Ex. 3, p. 23.

The State Engineer recognizes that the water budget is important to fully understand the hydrology of the regional flow system but also agrees with nearly all participants that the regional water budget is not the limiting measure to determine water available for development in the LWRFS. The potential for conflict with senior rights and impacts that are detrimental to the public interest in the LWRFS is controlled by aquifer hydraulics and the effect of pumping on discharge at the Warm Springs area rather than the regional water budget.

WHEREAS, evidence and testimony were presented arguing that the location of pumping within the LWRFS is an important variable in the determination of the amount that can be pumped. Participants representing groundwater users in Garnet Valley and the APEX area at the south end of the LWRFS testified that pumping within Garnet Valley does not have a discernable signal at wells near the Warm Springs area and that the hydraulic gradient from north-to-south within the LWRFS indicates that there is a component of groundwater flow in Garnet Valley that does not discharge to the Warm Springs area.[307] Several participants agreed that moving pumping to more distal locations within the LWRFS will lessen the effect of that pumping on spring flows. NV Energy testified that there would be a lesser effect because pumping areas around the periphery of the main carbonate-rock aquifer are less well-connected to the springs, and because of the likelihood that some amount of subsurface outflow occurs along and southern and southeastern boundary of the LWRFS and it is possible to capture some of that subsurface outflow without a drop-for-drop effect on discharge at the Warm Springs area[308] Others drew the same conclusion based on their review of the data and characterization of a heterogeneous system[309] or on weak connectivity between peripheral locations and the Warm Springs area.[310]

CSI argues that more groundwater development can occur in the LWRFS because subsurface fault structures create compartmentalization and barriers to groundwater flow that reduce the effects of pumping on discharge at the Warm Springs area.[311] They rebut the contention by others that spring flow is affected homogeneously by pumping within the LWRFS.[312] CSI used geophysical data to map a north-south trending subsurface feature that bisects Coyote Spring

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[307] *See* CNLV Ex. 3, pp. 45–47; GP-REP Ex. 1, pp. 2–3.
[308] NVE Ex. 1, pp. 8–9.
[309] *See e.g.* MBOP Ex. 2, p. 23; GP-REP Ex. 2, pp. 4–5. *See also* Technichrome Response.
[310] *See e.g.* NCA Closing, pp. 2–10; LC-V Closing, pp. 4–6; Bedroc Closing, pp. 9–11.
[311] CSI Closing, pp. 2–5.
[312] CSI Ex. 2, pp. 40–41.

Valley. They hypothesize that this structure is an impermeable flow barrier that creates an isolated groundwater flow path on the west side of Coyote Spring Valley from which pumping would capture recharge from the Sheep Range without spring flow depletion at the Warm Springs area.[313] MBOP also contends that the system is far too complex to characterize it as a homogeneous "bathtub" and that preferential flow paths within the region mean that pumping stress will greatly differ within the LWRFS depending on where the pumping occurs.[314] Rebuttals to MBOP and CSI contend that an emphasis on complexities in geologic structure is a distraction from the question at hand, and that the hydraulic data collected during and after the Order 1169 aquifer test clearly demonstrate close connectivity and disproves CSI's hypothesis.[315]

The State Engineer finds that the data support the conclusion that pumping from locations within the LWRFS that are distal from the Warm Springs area can have a lesser impact on spring flow than pumping from locations more proximal to the springs. The LWRFS system has structural complexity and heterogeneity, and some areas have more immediate and more complete connection than others. For instance, the Order 1169 aquifer test demonstrated that pumping 5,290 afa from carbonate-rock aquifer wells in Coyote Spring Valley caused a sharp decline in discharge at the springs, but distributed pumping since the completion of the aquifer test in excess of 8,000 afa has correlated with a stabilization of spring discharge. The data collected during and after the Order 1169 aquifer test provide substantial evidence that groundwater levels throughout the LWRFS rise and fall in common response to the combined effects of climate and pumping stress, which controls discharge at the Warm Springs area.[316] The State Engineer finds that the best available data do not support the hypotheses that variable groundwater flow paths and heterogeneous subsurface geology are demonstrated to exist that create hydraulically isolated compartments or subareas within the LWRFS carbonate-rock aquifer from which pumping can occur without effect on the Warm Springs area. However, there remains some uncertainty as to the extent that distance and location relative to other capturable sources of discharge either delay, attenuate, or reduce capture from the springs.

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[313] *Id. See also* CSI Ex. 1, pp. 31–40.
[314] MBOP Closing, p. 7.
[315] *See e.g.*, SNWA Ex. 9, pp. 23–24.
[316] NSE Exs. 15–21.

WHEREAS, evidence and testimony were presented to argue that no amount of groundwater can be pumped from the carbonate-rock aquifer or from the LWRFS without conflicting with the Muddy River decree or causing harm to the Moapa dace habitat. This argument is predicated on the interpretation that lowering of groundwater level anywhere within the LWRFS, whether caused by climate or pumping, eventually has an effect on spring discharge, and that any reduction in spring discharge caused by pumping conflicts with senior decreed rights or harms the Moapa dace or both.[317] MVIC and SNWA agree that capturing discharge from the Warm Springs area springs and the Muddy River are a conflict with the Muddy River decree, which appropriates "all of the flow of the said stream, its sources of supply, headwaters and tributaries."

The Muddy River Decree was finalized in 1920, decades before any significant amount of groundwater development within the Muddy River springs area or the LWRFS. The statement quoted above, or something similar to it, is a common conclusion in decrees to establish finality to the determination of relative priority of rights. By including this statement, the decreed right holders are afforded the assurance that no future claimants will interject a new priority right. However, it is also common on decreed systems for junior rights to be appropriated for floodwater or other excess flows, provided that no conflict occurs with the senior priorities. Similarly, groundwater development almost always exists in the tributary watersheds of decreed river systems, even though groundwater in a headwater or tributary basin is part of the same hydrologic system. There is no conflict as long as the senior water rights are served.

The State Engineer disagrees with SNWA and MVIC that the above quoted statement in the decree means that any amount of groundwater pumped within the headwaters that would reduce flow in the Muddy River conflicts with decreed rights. The State Engineer finds that capture or potential capture of the waters of a decreed system does not constitute a conflict with decreed right holders if the flow of the source is sufficient to serve decreed rights. Muddy River decreed rights were defined by acres irrigated and diversion rates for each user.[318] The sum of diversion rates greatly exceeds the full flow of the River, but all users are still served through a rotation schedule managed by the water master. The total amount of irrigated land in the decree is 5,614 acres.[319]

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[317] *See, e.g.*, CBD Ex. 3, p. 23; SNWA Ex. 7, p. 8-4; MVIC Ex. 1, p. 3.
[318] NSE Ex. 333.
[319] *Id.*

Flow in the Muddy River at the Moapa Gage has averaged approximately 30,600 afa since 2015,[320] which is less than the predevelopment baseflow of about 33,900.[321] If all decreed acres were planted with a high-water use crop like alfalfa, the net irrigation water requirement would be 28,300 afa, based on a consumptive use rate of 4.7 afa.[322] Conveyance loss due to infiltration is an additional consideration to serve all decreed users; however, this is limited in the Muddy River because the alluvial corridor is narrow and well defined so water stays within the shallow groundwater or discharges back to the river. The State Engineer finds that the current flow in the Muddy River is sufficient to serve all decreed rights in conformance with the Muddy River Decree, and that reductions in flow that have occurred because of groundwater pumping in the headwaters basins is not conflicting with Decreed rights.

WHEREAS, the majority of experts agree that there is an intermediate amount of pumping approximated by recent pumping rates that can continue to occur in the LWRFS and still protect the Moapa dace and not conflict with decreed rights. USFWS and NCA endorsed the use of average pumping over the years 2015-2017 (9,318 afa as reported by State Engineer pumpage inventories) as a supportable amount that can continue to be pumped, because the system appears to have somewhat stabilized.[323] CSI also endorsed this approach as an initial phase, though they suggested 11,400 afa, which was the average pumping reported by State Engineer inventories over the years 2010-2015 that included the period of the Order 1169 aquifer test.[324] CNLV makes a rough estimate that no more than 10,000 afa can be supported throughout the entire region, based on their professional judgment and review of the data.[325] NV Energy concludes that 7,000–8,000 afa can continue to be pumped, based on the amount of pumping in recent years from carbonate-rock aquifer wells and the observation that steady-state conditions in Warm Springs area spring

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[320] NSE Ex. 211, *USGS 09416000 Muddy River Moapa 1914-2013*, Hearing on Interim Order 1303, official records of the Division of Water Resources.
[321] SNWA Ex. 7, p. 5-4.
[322] *See, e.g.*, Huntington, J.L. and R. Allen, (2010), *Evapotranspiration and Net Irrigation Water Requirements for Nevada*, Nevada State Engineer's Office Publication, accessible at https://bit.ly/etniwr, (last accessed June 7, 2020), official records of the Division of Water Resources.
[323] USFWS Ex. 5, p. 3; NCA Ex. 1, p. 19.
[324] CSI Closing, p. 2.
[325] CNLV Ex. 3, p. 2.

flow are being reached.[326] SNWA estimates that only 4,000–6,000 afa of carbonate-rock aquifer pumping can continually occur within the LWRFS.[327]

WHEREAS, the State Engineer finds that the evidence and testimony projecting continual future decline in spring flow at the current rate of pumping is compelling but not certain. Several participants pointed out rising trends in groundwater levels at many locations in Southern Nevada, outside of the LWRFS, that are distant from pumping[328] even though total precipitation has been below average and since 2006 has been described as a drought.[329] This suggests that climate and recharge efficiency may have actually buffered the full effect of pumping on discharge at the Warm Springs area, and that the system could not support the current amount of groundwater pumping during an extended dry period with lesser recharge. In addition, slight declining trends that are observed in Garnet Valley monitoring wells are not evident in wells close to the Warm Springs area.[330] If drawdown in Garnet Valley has not yet propagated to the Muddy Springs area, then the resilience of the apparent steady state of spring flow is in doubt. Projections of continued future decline in spring discharge suggests that the current amount of pumping in the LWRFS is a maximum amount that may need to be reduced in the future if the stabilizing trend in spring discharge does not continue.

WHEREAS, there is an almost unanimous agreement among experts that data collection is needed to further refine with certainty the extent of groundwater development that can be continually pumped over the long term. The State Engineer finds that the current data are adequate to establish an approximate limit on the amount of pumping that can occur within the system, but that continued monitoring of pumping, water levels, and spring flow is essential to refine and validate this limit.

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[326] NVE Ex. 1, p. 8.
[327] SNWA Ex. 7, p. 8-4.
[328] NPS Ex. 3, Appendix A. *See also* Tr. 304–307, 577.
[329] Tr. 1292–1300. *See, also* LC-V Ex. 11, *PowerPoint Presentation of Todd G. Umstot, entitled Drought and Groundwater*, Hearing on Interim Order 1303, official records of the Division of Water Resources, slides 3–10.
[330] CNLV Ex. 3, pp. 45–46.

WHEREAS, pumping from wells in the LWRFS has gradually declined since completion of the Order 1169 aquifer test and is approaching 8,000 afa. This coincides with the period of time when spring discharge may be approaching steady state. The State Engineer finds that the maximum amount of groundwater that can continue to be developed over the long term in the LWRFS is 8,000 afa. The best available data at this time indicate that continued groundwater pumping that consistently exceeds this amount will cause conditions that harm the Moapa dace and threaten to conflict with Muddy River decreed rights.

IX. MOVEMENT OF WATER RIGHTS

WHEREAS, the data and evidence are clear that location of pumping within the LWRFS relative to the Warm Springs area and the Muddy River can influence the relative impact to discharge to the Warm Springs area and/or senior decreed rights on the Muddy River. The transfer of groundwater pumping from the Muddy River Springs Area alluvial wells to carbonate-rock aquifer wells may change the timing of any impact to Muddy River flows and amplify the effect on discharge to the Warm Springs area, thus potentially adversely impacting habitat for the Moapa dace. And the transfer of groundwater withdrawals from the carbonate-rock aquifer into the Muddy River alluvial aquifer may reduce the impact to the Moapa dace habitat but increase the severity of impact to the senior decreed rights on the Muddy River. The State Engineer recognizes that the LWRFS is fundamentally defined by its uniquely close hydrologic interconnection and shared source and supply of water. However, the State Engineer also recognizes that there can be areas within the LWRFS that have a greater or lesser degree of hydraulic connection due to distance, local changes in aquifer properties, or proximity to other potential sources of capturable water.

WHEREAS, Rulings 6254–6261 acknowledge that one of the main goals of Order 1169 and the associated pumping test at well MX-5 was to observe the effects of increased pumping on groundwater levels and spring flows. Coyote Spring Valley carbonate-rock aquifer pumping during the Order 1169 aquifer test was the largest localized carbonate-rock aquifer pumping in the LWRFS. In addition, concurrent carbonate-rock aquifer and alluvial aquifer pumping in Garnet Valley, Muddy River Springs Area, California Wash, and the northwest portion of the Black Mountains Area occurred during the test period. Rulings 6254–6261 described the data and analysis used to determine that additional pumping at the MX-5 well contributed significantly to decreases in high elevation springs (Pederson Springs) and other springs that are the sources to the

Muddy River. Evidence and reports provided under Interim Order 1303 do not challenge the findings in Rulings 6254–6261 that pumping impacts were witnessed. There is a strong consensus among participants that pumping during the Order 1169 aquifer test along with concurrent pumping caused drawdowns of water levels throughout the LWRFS.[331] However, the effects of pumping from different locations within the LWRFS on discharge at the Warm Springs area is not homogeneous.[332] The State Engineer finds that movement of water rights that are relatively distal from the Warm Springs area into carbonate-rock aquifer wells that have a closer hydraulic connection to the Warm Springs area is not favorable.

WHEREAS, evidence and testimony provided by participants during the Interim Order 1303 hearing provides a strong consensus that alluvial aquifer pumping in the Muddy River Springs Area affects Muddy River discharge.[333] There is also strong evidence that carbonate-rock aquifer pumping throughout the LWRFS affects spring flow but can also be dependent on proximity of pumping to springs.[334] No participant is a proponent of moving additional water rights closer to the headwaters of the Muddy River within the Muddy River Springs Area, and most participants agree that carbonate-rock aquifer and alluvial aquifer pumping in the Muddy River Springs Area captures Muddy River flow. The State Engineer finds that any pumping within close proximity to the Muddy River could result in capture of the Muddy River. The State Engineer also finds that any movement of water rights into carbonate-rock aquifer and alluvial aquifer wells in the Muddy River Springs Area that may increase the impact to Muddy River decreed rights is disfavored.

WHEREAS, the Order 1169 aquifer test demonstrated that impacts from the test along with concurrent pumping was widespread within the LWRFS encompassing 1,100 square miles and supported the conclusion of a close hydrologic connection among the basins.[335] While the effects of movement of water rights between alluvial aquifer wells and carbonate-rock aquifer wells on deliveries of senior decreed rights to the Muddy River or impacts to the Moapa dace may not be uniform across the entirety of the LWRFS, the relative degree of hydrologic connectedness

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[331] *See* SNWA Closing, pp. 10, 16; MVIC Closing, p. 6.
[332] *See, e.g.*, SNWA Closing, p. 10.
[333] CNLV Closing, p. 8; Tr. 1456–1457, 1458. *See also* SNWA Closing, p. 16; MVWD Closing, p. 11; MVIC Closing, p. 6.
[334] CNLV Closing, pp. 8–10; Tr. 1457, 1458; NV Energy Closing, p. 4; MVIC Closing, p. 6.
[335] NSE Ex. 256. *See also* NSE Ex. 14, pp. 20–21; NSE Ex. 17, p. 19; SNWA Closing pp. 2, 3.

in the LWRFS will be the principle factor in determining the impact of movement of water rights. The State Engineer recognizes that there may be discrete, local aquifers within the LWRFS with an uncertain hydrologic connection to the Warm Springs area. Determining the effect of moving water rights into these areas may require additional scientific data and analysis. Applications to move water rights under scenarios not addressed in this Order will be evaluated on their individual merits to determine potential impact to existing senior rights, potential impact to the Warm Springs area and Moapa dace habitat, and impacts to the Muddy River.

X. ORDER

NOW THEREFORE, the State Engineer orders:

1. The Lower White River Flow System consisting of the Kane Springs Valley, Coyote Spring Valley, Muddy River Springs Area, California Wash, Hidden Valley, Garnet Valley, and the northwest portion of the Black Mountains Area as described in this Order, is hereby delineated as a single hydrographic basin. The Kane Springs Valley, Coyote Spring Valley, Muddy River Springs Area, California Wash, Hidden Valley, Garnet Valley and the northwest portion of the Black Mountains Area are hereby established as sub-basins within the Lower White River Flow System Hydrographic Basin.

2. 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.

3. The maximum quantity of water that may be pumped from the Lower White River Flow System Hydrographic Basin may be reduced if it is determined that pumping will adversely impact the endangered Moapa dace.

4. All applications for the movement of existing groundwater rights among sub-basins of the Lower White River Flow System Hydrographic Basin will be processed in accordance with NRS 533.370.

5. The temporary moratorium on the submission of final subdivision or other submission concerning development and construction submitted to the State Engineer for review established under Interim Order 1303 is hereby terminated.

6. All other matters set forth in Interim Order 1303 that are not specifically addressed herein are hereby rescinded.

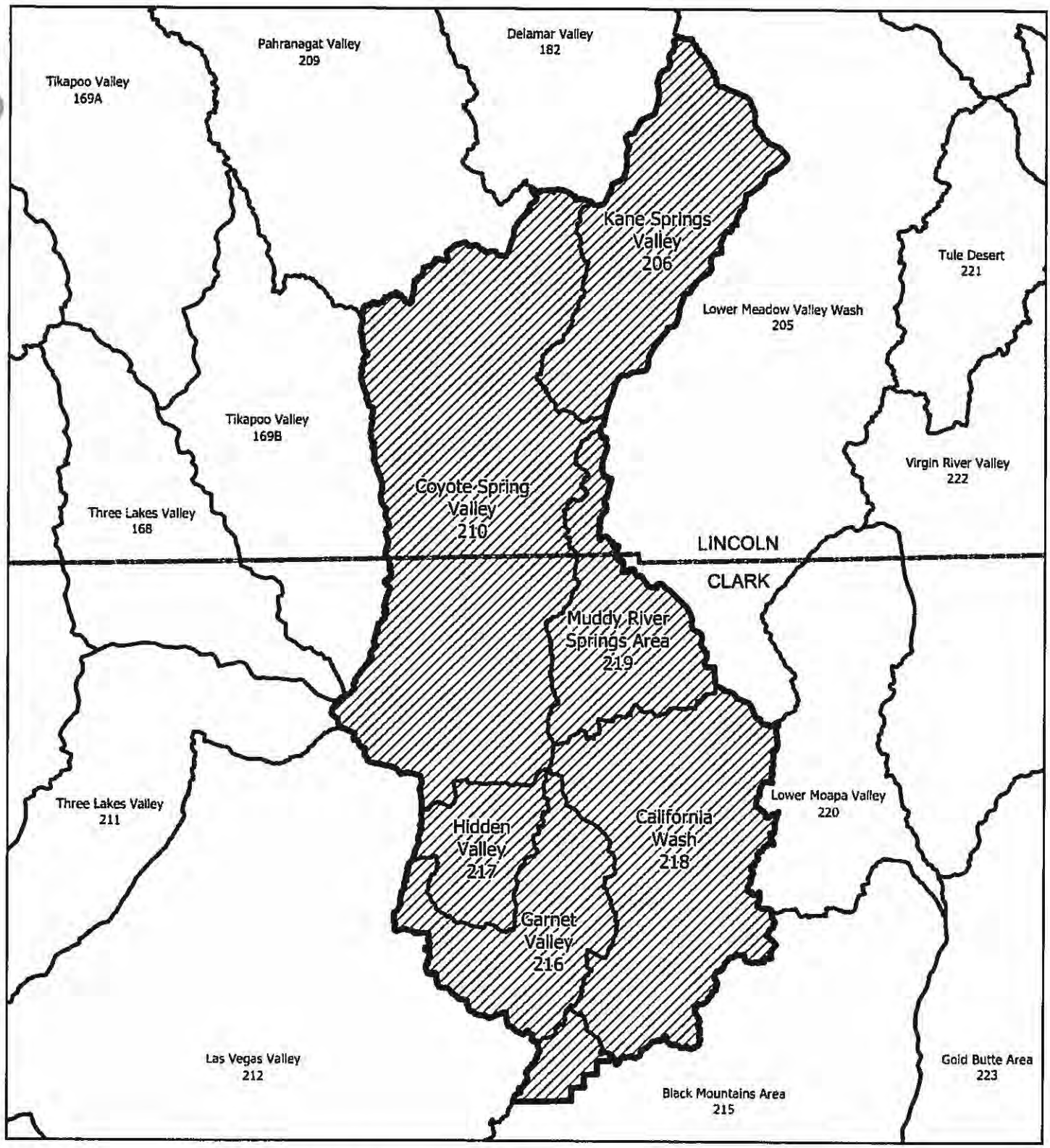
Tim Wilson, P.E.

TIM WILSON, P.E.
State Engineer

Dated at Carson City, Nevada this

15th day of June, 2020.

ATTACHMENT A



Location and Extent of LWRFS Hydrographic Basin, Clark and Lincoln Counties, Nevada

LWRFS Boundary
Hydrographic Basin Boundary
County Boundary

N
W E
S

0 10 Miles

State of Nevada
Department of Conservation and
Natural Resources
Office of the State Engineer
Division of Water Resources

Tim Wilson, P.E.
State Engineer

June 2020