

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; LAS VEGAS VALLEY
WATER DISTRICT; SOUTHERN
NEVADA WATER AUTHORITY; and
CENTER FOR BIOLOGICAL
DIVERSITY,

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.; MUDDY
VALLEY IRRIGATION COMPANY;
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; and
CITY OF NORTH LAS VEGAS,

Respondents.

Electronically Filed
Jun 01 2022 04:47 p.m.
Elizabeth A. Brown
Clerk of Supreme Court

Case No. 84739

**THE STATE ENGINEER’S AND
THE CENTER FOR BIOLOGICAL DIVERSITY’S
JOINT MOTION TO CONSOLIDATE APPEALS AND MODIFY CAPTION**

Appellant, Adam Sullivan, P.E., in his capacity as the Nevada State Engineer, Department of Conservation and Natural Resources, Division of Water Resources (hereafter “State Engineer”), by and through counsel, Nevada Attorney General Aaron D. Ford, Chief Litigation Counsel Steve Shevorski, Senior Deputy Attorney General James N. Bolotin, and Deputy Solicitor General Kiel B. Ireland, and Appellant, the Center for Biological Diversity, by and through counsel Scott Lake, hereby file this Joint Motion to Consolidate Appeals and Modify Caption. This Motion is based upon the following memorandum of points and authorities, and papers on file in this case.

MEMORANDUM OF POINTS AND AUTHORITIES

I. INTRODUCTION

The underlying appeal in this case, and those appeals filed by the Southern Nevada Water Authority (“SNWA”) in Case No. 84741, the Center for Biological Diversity (“the Center”) in Case No. 84742, and the Muddy Valley Irrigation Company (“MVIC”) (which does not yet have a Nevada Supreme Court Case Number but was timely filed on May 26, 2022, in the district court pursuant to NRAP 4(a)(2)) should be consolidated under this case number (as the first-filed appeal). *See* Exhibit 1, MVIC’s Notice of Appeal. While the four Appellants stand

in different shoes, with different individual interests and missions, all four appeals challenge and seek reversal of (in whole or in part) the same district court order and seek reinstatement of (in whole or in part) the State Engineer's Order 1309. In accordance with the requested consolidation, the State Engineer and the Center likewise request that the caption be modified to reflect the State Engineer, SNWA, the Center, and MVIC be designated as the Appellants in the consolidated action.

II. LEGAL AUTHORITY

Pursuant to NRAP 3(b)(2), “[w]hen the parties have filed separate timely notices of appeal, the appeals may be joined or consolidated by the court upon its own motion or upon motion of a party.” Likewise, although this case does not involve cross-appeals, NRAP 28.1 provides that the designation of the appellant in the caption may be modified by the parties’ agreement or by court order.

III. PROCEDURAL AND FACTUAL BACKGROUND

Following a lengthy administrative process, the State Engineer issued Order 1309 on June 15, 2020, delineating the interconnected Lower White River Flow System (“LWRFS”) as a single administrative unit sharing a common supply of water and finding that 8,000 acre-feet annually was the maximum quantity of groundwater that could be pumped from the area without causing declines to spring flows or flows in the fully decreed Muddy River and adversely impacting the endangered Moapa dace. *See* Exhibit 2, Order 1309.

Subsequently, eight petitions for judicial review were timely filed pursuant to NRS 533.450, including by SNWA, the Center, and MVIC. *See* Exhibits 3–10, Petitions for Judicial Review Challenging Order 1309 without Exhibits. While most of the petitions for judicial review sought the complete reversal and vacation of Order 1309, those filed by SNWA, the Center, and MVIC challenged more limited aspects of Order 1309 while supporting the State Engineer’s authority to make factual findings like those in Order 1309. *See* Exhibits 3, 5, and 7. Specifically, SNWA requested “that the Court order the State Engineer to amend Order 1309 to remove or strike findings made therein regarding conflicts with senior water rights” while explicitly not “seek[ing] relief from any other portion of Order 1309.” *See* Exhibit 3, p. 8. Likewise, the Center agreed that the State Engineer had the authority to issue Order 1309, but filed a petition for judicial review seeking “an Order amending Order 1309” to remove or strike certain factual findings therein, directing the State Engineer to consider environmental consequences, and “directing the State Engineer to prohibit all carbonate groundwater pumping within the geographic boundary of the Lower White River Flow System, including Kane Springs Valley, until a new sustainable limit is determined by the State Engineer.” *See* Exhibit 7, p. 18. Similarly, MVIC’s petition requested that the district court “order the State Engineer to amend Order 1309 to strike the findings regarding conflicts with senior water rights” found at page 61 of Order 1309 but argued that the State Engineer has

authority (if not a duty) under both statutory law and the Muddy River Decree to conjunctively manage the resource, *i.e.*, limiting groundwater pumping to protect its decreed surface water rights. *See* Exhibit 5, p. 5.

Once the deadline had run, and all timely petitions challenging Order 1309 had been filed, the district court ordered consolidation of all the petitions then-pending in Clark County on August 17, 2020. *See* Exhibit 11, Order Granting Consolidation. On September 15, 2020, the district court granted the Joint Stipulation for Joint Intervention, allowing each petitioner to intervene in each other's petitions. *See* Exhibit 12, Joint Stipulation for Joint Intervention. On February 26, 2021, the Court also ultimately ordered that all other pending motions to intervene (including those filed by non-petitioner intervenors) were granted. *See* Exhibit 13, Order Granting Motion to Intervene.

On May 26, 2021, the parties stipulated to consolidation of the petition filed by Lincoln County Water District and Vidler Water Company once its venue was transferred from Lincoln County to Clark County. *See* Exhibit 14, Stipulation for Consolidation. Lincoln County Water District and Vidler Water Company then stipulated to mutual intervention with each petitioner and intervenor, except for SNWA and MVIC. *See* Exhibit 15, all Notices of Entry of Orders on Stipulations to Intervene between Lincoln County Water District and Vidler Water Company and other parties. The Court ultimately likewise ordered mutual intervention between

Lincoln County Water District and Vidler Water Company, SNWA, and MVIC. *See* Exhibit 16, Order Granting SNWA and MVIC Intervention dated July 9, 2021; Exhibit 17, Order Granting Lincoln County Water District and Vidler Water Company Intervention in Petitions of SNWA and MVIC dated September 13, 2021.

Following a full briefing and oral argument, the district court issued its Findings of Fact, Conclusions of Law, and Order Granting Petitions for Judicial Review (“Order Vacating Order 1309”) on April 19, 2022. Therein, the district court found that State Engineer lacked authority to jointly administer the area delineated as the LWRFS, lacked authority to engage in conjunctive management of water resources (*i.e.*, managing surface water and groundwater together under prior appropriation), and violated certain Petitioners’ due process rights during the administrative process preceding Order 1309. *See generally* Exhibit 18, Order Vacating Order 1309. Based on these conclusions, the district court found that Order 1309 was arbitrary and capricious, void, and vacated Order 1309 in its entirety, and did not reach the question of whether substantial evidence supports Order 1309. *See id.*, p. 35. Further, the district court expressly granted the petitions for judicial review filed by Lincoln County Water District and Vidler Water Company, Inc., Coyote Springs Investment, LLC, Apex Holding Company, LLC and Dry Lake Water, LLC, Nevada Cogeneration Associates Nos. 1 and 2, and

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Georgia-Pacific Gypsum LLC and Republic Environmental Technologies, Inc. *See id.*, pp. 35–36.

Notably in the Order Vacating Order 1309, the district court did not expressly address the petitions filed by SNWA, the Las Vegas Valley Water District (“LVVWD”), the Center, or MVIC. However, on May 13, 2022, the district court issued its Addendum and Clarification to Court’s Findings of Fact, Conclusions of Law, and Order Granting Petitions for Judicial Review Filed on April 19, 2022 (“Addendum and Clarification of Order Vacating Order 1309”). *See* Exhibit 19, Addendum and Clarification of Order Vacating Order 1309. Therein, the district court noted that SNWA, LVVWD, the Center, and MVIC “supported the Nevada State Engineer’s Position that Order 1309 did not exceed the State Engineer’s statutory authority nor violated participant’s due process rights” but did challenge some “factual findings as not being supported by substantial evidence.” *Id.*, p. 2. The district court then specifically DISMISSED the petitions for judicial review to the extent they “support the position that Nevada State Engineer did not exceed his statutory authority and provided due process in issuing Order 1309.” *Id.* The State Engineer, SNWA, the Center, and MVIC all subsequently appealed, seeking reversal of the Order Vacating Order 1309 and reinstatement of Order 1309, in whole or in part.

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IV. ARGUMENT

While undersigned counsel are unaware of any precedent from this Court regarding the standard for consolidating appeals, apart from consolidation being permitted under NRAP 3(b), the appeals at issue here should be consolidated. Judicial economy, the economy of the parties, and common-sense dictate that these four appeals should be consolidated, and should be briefed simultaneously and heard during one oral argument (if oral argument is requested).

All four appeals stem from the same administrative process, same administrative record, and the same consolidated district court action regarding the same decision of the State Engineer, Order 1309, wherein briefing and oral argument occurred simultaneously. Furthermore, all four appeals challenge the same, single district court Order Vacating Order 1309 and the subsequent Addendum and Clarification of that Order. While there may be differences in the extent to which each of the Appellants seek to reverse the Order Vacating Order 1309 and reinstate Order 1309, all appeals seek to reverse (1) the district court's finding that the State Engineer lacks the authority to delineate and jointly administer the LWRFS as a single administrative unit, based on substantial scientific evidence showing that this is one interconnected aquifer, sharing the same, single supply of water; (2) the district court's finding that the State Engineer lacks the authority to conjunctively manage groundwater and surface water (*i.e.*, limit groundwater pumping to protect

more senior, decreed surface water rights); and (3) the district court's finding that the State Engineer did not provide adequate due process to those Petitioners whose petitions were granted through notice and the ability to be heard during the administrative process, including an evidentiary hearing, preceding the State Engineer's rendition of Order 1309. Lastly, based on the district court proceedings, all Appellants also likely seek to argue that Order 1309, or portions thereof, was based on substantial evidence in the State Engineer's record (despite the district court declining to reach that issue).

In summation, the questions involved in all four appeals from the Order Vacating Order 1309, and the subsequent Addendum and Clarification, are sufficiently related so as to make consolidation of the appeals prudent. Such consolidation will expedite the consideration of the appeals, and the issues therein, and makes the best use of the resources of the Court and the parties.

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V. CONCLUSION

The State Engineer and the Center respectfully request that the Court consolidate this appeal with those taken by SNWA, the Center, and MVIC, and modify the caption such that these four parties are designated as Appellants.

RESPECTFULLY SUBMITTED this 1st day of June, 2022.

AARON D. FORD
Attorney General

By: /s/ James N. Bolotin
STEVE SHEVORSKI (Bar No. 8256)
Chief Litigation Counsel
JAMES N. BOLOTIN (Bar No. 13829)
Senior Deputy Attorney General
KIEL B. IRELAND (Bar No. 15368)
Deputy Solicitor General
100 North Carson Street
Carson City, NV 89701-4717
T: (775) 684-1231
E: sshevorski@ag.nv.gov
jbolotin@ag.nv.gov
kireland@ag.nv.gov
*Attorneys for Appellant
State Engineer*

By: /s/ Scott Lake
SCOTT LAKE (Bar No. 15765)
Center For Biological Diversity
P.O. Box 6205
Reno, NV 89513
T: (802) 299-7495
E: slake@biologicaldiversity.org
*Attorney for Appellant
The Center for Biological Diversity*

CERTIFICATE OF SERVICE

I certify that I am an employee of the Office of the Attorney General and that on this 1st day of June, 2022, I served a copy of the foregoing THE STATE ENGINEER'S AND THE CENTER FOR BIOLOGICAL DIVERSITY'S JOINT MOTION TO CONSOLIDATE APPEALS AND MODIFY CAPTION, by electronic service to the participants in this case who are registered with the Nevada Supreme Court's EFlex Electronic Filing System:

Paul G. Taggart, Esq.
E: paul@legaltnt.com

Emilia K. Cargill, Esq.
E: emilia.cargill@coyotesprings.com

Steven C. Anderson, Esq.
E: sc.anderson@lvvwd.com

Francis C. Flaherty, Esq.
E: falaherty@dyerlawrence.com

Dylan V. Frehner
E: dfrehner@lincolncountynv.gov

Christian T. Balducci, Esq.
E: cbalducci@maclaw.com

Wayne O. Klomp, Esq.
E: wayne@greatbasinlawyer.com

Sarah A. Ferguson, Esq.
E: sferguson@mcdonaldcarano.com

Karen A. Peterson, Esq.
E: kpeterson@allisonmackenzie.com

Robert A. Dotson, Esq.
Justin C. Vance, Esq.
E: rdotson@dotsonlaw.legal
jvance@dotsonlaw.legal

Bradley J. Herrema, Esq.
E: bherrema@bhfs.com

Justina A. Caviglia, Esq.
Michael D. Knox, Esq.
E: jcaviglia@nvenergy.com
mknnox@nvenergy.com

Kent R. Robison, Esq.
Hannah E. Winston, Esq.
E: krobison@rssblaw.com
hwinston@rssblaw.com

William L. Coulthard, Esq.
E: wlc@coulthardlaw.com

Severin A. Carlson, Esq.
Sihomara L. Graves, Esq.
E: scarlson@kcnvlaw.com
sgraves@kcnvlaw.com

Gregory H. Morrison, Esq.
E: gmorrison@parsonsbehle.com

Laura A. Schroeder, Esq.
Therese A. Ure Stix, Esq.
Caitlin R. Skulan, Esq.
E: counsel@water-law.com

and via email service to:

Thomas P. Duensing
E: tom@legaltnt.com

Sylvia L. Harrison, Esq.
Lucas M. Foletta, Esq.
E: sharrison@mcdonaldcarano.com
lfoletta@mcdonaldcarano.com

Scott Robert Lake, Esq.
E: slake@biologicaldiversity.org

Steven D. King, Esq.
E: kingmont@charter.net

Lisa T. Belenky, Esq,
E: lbelenky@biologicaldiversity.org

/s/ Dorene A. Wright _____

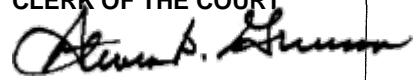
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EXHIBIT 1

EXHIBIT 1



1 **NOAS**
2 STEVEN D. KING (NSB No. 4304)
3 227 River Road
4 Dayton, NV 89403
5 Tel: (775) 427-5821
6 Email: kingmont@charter.net

7 ROBERT A. DOTSON (NSB No. 5285)
8 JUSTIN C. VANCE (NSB No. 11306)
9 DOTSON LAW
10 5355 Reno Corporate Dr., Ste 100
11 Reno, Nevada 89511
12 Tel: (775) 501-9400
13 Email: rdotson@dotsonlaw.legal
14 jvance@dotsonlaw.legal
15 *Attorneys for MVIC*

16 **DISTRICT COURT**
17 **CLARK COUNTY, NEVADA**

18 LAS VEGAS VALLEY WATER DISTRICT
19 and SOUTHERN NEVADA WATER
20 AUTHORITY,

21 Petitioners,

22 vs.

23 ADAM SULLIVAN, P.E., Nevada State
24 Engineer, DIVISION OF WATER
25 RESOURCES, DEPARTMENT OF
26 CONSERVATION AND NATURAL
27 RESOURCES,

28 Respondent.

Case No.: A-20-816761-C (Lead Case)
Dept. No.: 1

MUDDY VALLEY IRRIGATION
COMPANY'S NOTICE OF APPEAL

Consolidated with:

17 IN THE MATTER OF THE PETITION OF 18 COYOTE SPRINGS INVESTMENT, LLC	Case No.: A-20-817765-P (Sub Case) Dept. No.: 1
19 IN THE MATTER OF THE PETITION OF 20 APEX HOLDING COMPANY, LLC	Case No.: A-20-817840-P (Sub Case) Dept. No.: 1
21 IN THE MATTER OF THE PETITION OF 22 CENTER FOR BIOLOGICAL DIVERSITY	Case No.: A-20-817876-P (Sub Case) Dept. No.: 1
23 IN THE MATTER OF THE PETITION OF 24 MUDDY VALLEY IRRIGATION COMPANY	Case No.: A-20-817977-P (Sub Case) Dept. No.: 1
25 IN THE MATTER OF THE PETITION OF 26 NEVADA COGENERATION ASSOCIATES 27 NOS. 1 AND 2	Case No.: A-20-818015-P (Sub Case) Dept. No.: 1
28 IN THE MATTER OF THE PETITION OF GEORGIA-PACIFIC GYPSUM, LLC AND REPUBLIC ENVIRONMENTAL TECHNOLOGIES, INC.	Case No.: A-20-818069-P (Sub Case) Dept. No.: 1

1 IN THE MATTER OF THE PETITION OF
2 LINCOLN COUNTY WATER DISTRICT
3 AND VIDLER WATER COMPANY, INC.

Case No.: A-21-833572-J (Sub Case)
Dept. No. 1

4 **MUDDY VALLEY IRRIGATION COMPANY'S NOTICE OF APPEAL**

5 MUDDY VALLEY IRRIGATION COMPANY ("MVIC"), by and through its counsel,
6 STEVEN D. KING and DOTSON LAW, pursuant to NRS 533.450(9), NRAP 4(a)(2), and NRAP
7 4(a)(1), hereby appeals to the Nevada Supreme Court from the Findings of Fact, Conclusions of
8 Law, and Order Granting Petitions for Judicial Review, filed by this Court on April 19, 2022, as well
9 as the Addendum and Clarification to Court's Findings of Fact, Conclusions of Law, and Order
10 Granting Petitions for Judicial Review Filed on April 19, 2022, filed on May 13, 2022. The first
11 Notice of Entry of Findings of Fact, Conclusions of Law, and Order Granting Petitions for Judicial
12 Review was served on April 19, 2022, a copy of which is attached hereto as **Exhibit 1**. The State
13 Engineer filed a timely Notice of Appeal to the April 19, 2022, order on May 13, 2022, the Center for
14 Biological Diversity filed a timely Notice of appeal on May 16, 2022, and the Southern Nevada
15 Water Authority filed a timely Notice of Appeal on May 19, 2022. This appeal is therefore timely
16 pursuant to NRAP 4(a)(2) due to the previous appeals.

17 The Notice of Entry of Addendum and Clarification to Court's Findings of Fact, Conclusions
18 of Law, and Order Granting Petitions for Judicial Review was served on May 16, 2022, a copy of
19 which is attached hereto as **Exhibit 2**. Thus, the appeal of the addendum order is timely pursuant to
20 NRAP 4(1).

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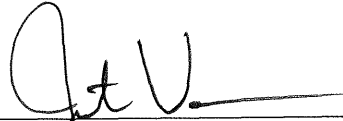
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Affirmation Pursuant to NRS 239B.030

The undersigned does hereby affirm that the preceding document does not contain the social security number of any person.

DATED this 26th day of May 2022.




STEVEN D. KING (NSB Bar No. 4304)
227 River Road
Dayton, Nevada 89403
(775) 427-5821

ROBERT A. DOTSON (NSB No. 5285)
JUSTIN C. VANCE (NSB No. 11306)
DOTSON LAW
5355 Reno Corporate Dr., Suite 100
Reno, Nevada 89511
(775) 501-9400
Attorneys for MVIC

CERTIFICATE OF SERVICE

Pursuant to NRCP 5(b), I hereby certify that I am an employee of DOTSON LAW and that on this date I caused to be served a true and correct copy of the foregoing by electronic service to the participants in this case who are registered with the Eight Judicial District Court's Odyssey eFileNV File & Serve system to this matter.

DATED this 26 day of May 2022.


L. MORGAN BOGUMIL

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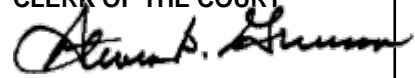
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EXHIBIT 1

EXHIBIT 1



1 **NEFF**
2 DYLAN V. FREHNER, ESQ.
3 Nevada State Bar No. 9020
4 **LINCOLN COUNTY DISTRICT ATTORNEY**
5 181 North Main Street, Suite 205
6 P.O. Box 60
7 Pioche, Nevada 89043
8 Telephone: (775) 962-8073
9 Email: dfrehner@lincolncountynv.gov

10 WAYNE O. KLOMP, ESQ.
11 Nevada State Bar No. 10109
12 **GREAT BASIN LAW**
13 1783 Trek Trail
14 Reno, Nevada 89521
15 Telephone: (775) 770-0386
16 Email: wayne@greatbasinlawyer.com

17 KAREN A. PETERSON, ESQ.
18 Nevada State Bar No. 366
19 **ALLISON MacKENZIE, LTD.**
20 402 North Division Street
21 Carson City, Nevada 89703
22 Telephone: (775) 687-0202
23 Email: kpeterson@allisonmackenzie.com

24 Attorneys for Petitioners, LINCOLN COUNTY
25 WATER DISTRICT and VIDLER WATER
26 COMPANY, INC.

27 **DISTRICT COURT**
28 **CLARK COUNTY, NEVADA**

19 LAS VEGAS VALLEY WATER DISTRICT,
20 and SOUTHERN NEVADA WATER
21 AUTHORITY, et al.,

Case No. A-20-816761-C

Dept. No. 1

21 Petitioners,

Consolidated with Cases:

22 vs.

A-20-817765-P

A-20-818015-P

A-20-817977-P

23 ADAM SULLIVAN, P.E., Acting
24 Nevada State Engineer, et al.,

A-20-818069-P

A-20-817840-P

A-20-817876-P

25 Respondent.

A-21-833572-J

26 **NOTICE OF ENTRY OF FINDINGS OF FACT, CONCLUSIONS OF LAW,**
27 **AND ORDER GRANTING PETITIONS FOR JUDICIAL REVIEW**

28 ///

ALLISON MacKENZIE, LTD.
402 North Division Street, P.O. Box 646, Carson City, NV 89702
Telephone: (775) 687-0202 Fax: (775) 882-7918
E-Mail Address: law@allisonmackenzie.com

ALLISON MacKENZIE, LTD.
402 North Division Street, P.O. Box 646, Carson City, NV 89702
Telephone: (775) 687-0202 Fax: (775) 882-7918
E-Mail Address: law@allisonmackenzie.com

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YOU AND EACH OF YOU WILL PLEASE TAKE NOTICE that the *Findings of Fact, Conclusions of Law, and Order Granting Petitions for Judicial Review* was entered on the 19th day of April, 2022 in the above captioned and consolidated cases, a copy of which is attached hereto.

DATED this 19th day of April, 2022.

LINCOLN COUNTY DISTRICT ATTORNEY
181 North Main Street, Suite 205
P.O. Box 60
Pioche, Nevada 89043
Telephone: (775) 962-8073

/s/ Dylan V. Frehner
DYLAN V. FREHNER, ESQ.
Nevada State Bar No. 9020
Email: dfrehner@lincolncountynv.gov

~ and ~

GREAT BASIN LAW
1783 Trek Trail
Reno, Nevada 89521
Telephone: (775) 770-0386

/s/ Wayne O. Klomp
WAYNE O. KLOMP, ESQ.
Nevada State Bar No. 10109
Email: wayne@greatbasinlawyer.com

Attorneys for Petitioner, **LINCOLN COUNTY WATER DISTRICT**

ALLISON MacKENZIE, LTD.
402 North Division Street
Carson City, NV 89703
Telephone: (775) 687-0202

/s/ Karen A. Peterson
KAREN A. PETERSON, ESQ.
Nevada State Bar No. 366
Email: kpeterson@allisonmackenzie.com

Attorneys for Petitioner **VIDLER WATER COMPANY, INC.**

ALLISON MacKENZIE, LTD.
402 North Division Street, P.O. Box 646, Carson City, NV 89702
Telephone: (775) 687-0202 Fax: (775) 882-7918
E-Mail Address: law@allisonmackenzie.com

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CERTIFICATE OF SERVICE

Pursuant to NRCp 5(b), I hereby certify that I am an employee of ALLISON MacKENZIE, LTD., Attorneys at Law, and that on this date, I caused a true and correct copy of the foregoing document to be served on all parties to this action by electronic service to the participates in this case who are registered with the Eighth Judicial District Court’s Odyssey eFileNV File & Service system to this matter.

DATED this 19th day of April, 2022.

/s/ Nancy Fontenot
NANCY FONTENOT

ALLISON MacKENZIE, LTD.
402 North Division Street, P.O. Box 646, Carson City, NV 89702
Telephone: (775) 687-0202 Fax: (775) 882-7918
E-Mail Address: law@allisonmackenzie.com

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INDEX OF EXHIBITS

<u>Exhibit No.</u>	<u>Description</u>	<u>Number of Pages</u>
"1"	Findings of Fact, Conclusions of Law, And Order Granting Petitions for Judicial Review	40

4857-5859-8684, v. 1

EXHIBIT “1”

1 FFCO

2
3 **DISTRICT COURT**
CLARK COUNTY, NEVADA

4 LAS VEGAS VALLEY WATER DISTRICT,
5 and SOUTHERN NEVADA WATER
6 AUTHORITY,

Case No. A-20-816761-C
Dept. No. I

7 Petitioners,

Consolidated with Cases:

8 vs.

9 TIM WILSON, P.E., Nevada State Engineer,
10 DIVISION OF WATER RESOURCES,
11 DEPARTMENT OF CONSERVATION AND
12 NATURAL RESOURCES,

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

13 Respondent.

14 And All Consolidated Cases.

15
16 **FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER GRANTING PETITIONS**
17 **FOR JUDICIAL REVIEW**

18 This matter comes before this Court on consolidated petitions for judicial review of State
19 Engineer's Order 1309 filed by Petitioners:

- 20 • Southern Nevada Water Authority and Las Vegas Valley Water District
- 21 • Coyote Spring Investment, LLC
- 22 • Apex Holding Co. and Dry Lake Water, LLC
- 23 • The Center for Biological Diversity
- 24 • Muddy Valley Irrigation Company
- 25 • Nevada Cogeneration Associates Nos. 1 and 2
- 26 • Georgia-Pacific Gypsum LLC and Republic Environmental Technologies, Inc.
- 27 • Lincoln County Water District and Vidler Water Company.

28
Bita Yeager
Eighth Judicial District Court
Clark County, Nevada
Department I

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The parties stipulated to permit the following Intervenors into this matter:

- Sierra Pacific Power Company d/b/a NV Energy and Nevada Power Company d/b/a NV Energy
- Moapa Valley Water District
- The Church of Jesus Christ of Latter-Day Saints
- City of North Las Vegas
- Western Elite Environmental, Inc. and Bedroc Limited, LLC.

In addition, some Petitioners intervened to respond to other petitions for judicial review. The Parties appeared by and through their respective counsels of record. The Court held oral argument from February 14, 2022 to February 17, 2022.

The Court having considered the evidence, the pleadings, together with opening and closing arguments presented at the hearing for these matters, and good cause appearing therefor, makes the following Findings of Fact, Conclusions of Law, and Order:

I.

PROCEDURAL HISTORY

On June 15, 2020, the Nevada State Engineer issued Order No. 1309 as his latest administrative action regarding the Lower White River Flow System (“LWRFS”)¹.

On June 17, 2020, the Las Vegas Valley Water District and the Southern Nevada Water Authority (collectively, “SNWA”) filed a petition for judicial review of Order 1309 in the Eighth Judicial District Court in Clark County, Nevada.² Subsequently, the following petitioners filed petitions for judicial review in the Eighth Judicial District Court: Coyote Spring Investments, LLC (“CSI”); Apex Holding Company, LLC and Dry Lake Water LLC (collectively, “Apex”); the Center Biological Diversity (“CBD”); Muddy Valley Irrigation Company (“MVIC”); Nevada

¹ SE ROA 2 – 69. The LWRFS refers to an area in southern Nevada made up of several hydrological basins that share the same aquifer as their source of groundwater. The Nevada State Engineer determined that this encompasses the area that includes Coyote Spring Valley, Muddy River Springs Area, California Wash, Hidden Valley, Garnet Valley, Kane Springs Valley and the northwest portion of the Black Mountains Area.

² LVVWD and SNWA Petition for Judicial Review, filed June 17, 2020.

1 Cogeneration Associates Numbers 1 and 2 (“Nevada Cogen”); and Georgia-Pacific Gypsum LLC,
2 and Republic Technologies, Inc. (collectively, “Georgia-Pacific”). All petitions were consolidated
3 with SNWA’s petition.³

4 Later, Sierra Pacific Power Company d/b/a NV Energy (“Sierra Pacific”) and Nevada
5 Power Company d/b/a NV Energy (“Nevada Power” and, together with Sierra Pacific, “NV
6 Energy”), Moapa Valley Water District (“MVWD”), the Church of Jesus Christ and of Latter-Day
7 Saints (the “Church”), the City of North Las Vegas (“CNLV”), and Western Elite Environmental,
8 Inc. and Bedroc Limited (collectively, “Bedroc”) ⁴ were granted intervention status in the
9 consolidated petitions for judicial review of Order 1309.

10 On July 13, 2020, Lincoln County Water District and Vidler Water Co. (collectively,
11 “Vidler”) timely filed their Petition for Judicial Review of State Engineer Order 1309 in the
12 Seventh Judicial District Court in Lincoln County, Nevada, identified as Case No. CV-0702520.
13 On August 26, 2020, the Seventh Judicial District Court issued an Order Granting Motion to
14 Change Venue, transferring this matter to the Eighth Judicial District Court in Clark County,
15 Nevada. Vidler appealed the Order Granting Motion to Change Venue to the Nevada Supreme
16 Court, and on April 15, 2021, the Nevada Supreme Court entered its Order of Affirmation. On
17 May 27, 2021, per verbal stipulation by the parties, the Court ordered this matter consolidated into
18 Case No. A-20-816761-C. When transferred to the Eighth Judicial District Court, Vidler’s action
19 was assigned Case No. A-21-833572-J. Notwithstanding the consolidation of all of the cases, each
20 case retained its individual and distinct factual and legal issues.

21 Petitioners in all the consolidated actions filed their Opening Briefs on or about August 27,
22 2021. Respondents State Engineer, Intervenors, and Petitioners who were Respondent-Intervenors
23 filed their Answering Briefs on or about November 24, 2021. Petitioners filed their Reply Briefs on
24 or about January 11, 2022.

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27 ³ Stipulation for Consolidation, A-20-816761-C, May 26, 2021.

28 ⁴ Bedroc and CNLV did not file briefs and did not participate in oral argument.

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II.

FACTUAL HISTORY

A. The Carbonate Groundwater Aquifer and the Basins

Much of the bedrock and mountain ranges of Eastern Nevada are formed from a sequence of sedimentary rocks laid down during the Paleozoic Era. These formations are limestones or dolomites, commonly referred to as “carbonates,” due to the chemical composition of the minerals composing the rocks. These formations have been extensively deformed through folding and faulting caused by geologic forces. This deformation has caused extensive fracture and fault systems to form in these carbonate rocks, with permeability enhanced by the gradual solution of minerals. The result is an aquifer system that over time has accumulated large volumes of water with some apparent degree of connection throughout the much of area.⁵ The valley floors in the basins of Eastern Nevada are generally composed of alluvium comprised largely of relatively young (<5 million years) unconsolidated sands, gravels, and clays. This sequence is loosely referred to as the “Alluvial Aquifer,” the aquifer for most shallow wells in the area. Most of the water in the Carbonate Aquifer is present due to infiltration of water thousands of years ago; recent recharge from present day precipitation may represent only a fraction of the water stored.

Approximately 50,000 square miles of Nevada sits atop of this geologic layer of carbonate rock, which contains significant quantities of groundwater.⁶ This carbonate-rock aquifer system contains at least two major “regional flow systems” - continuous, interconnected, and transmissive geologic features through which water flows underground roughly from north to south: the Ash Meadows-Death Valley regional flow system; and the White River-Muddy River Springs system.⁷ These flow systems connect the groundwater beneath dozens of topographic valleys across distances exceeding 200 miles.⁸ The White River-Muddy River Springs flow system, stretching approximately

⁵ State Engineer Record on Appeal (“SE ROA”) 36062-67, Ex. 14; SE ROA 661, Ex. 8.

⁶ SE ROA 659.

⁷ SE ROA 661.

⁸ SE ROA 661.

1 240 miles from southern Elko County in the north to the Muddy River Springs Area in the south,
2 was identified as early as 1966.⁹ The area designated by Order 1309 as the LWRFS consists
3 generally of the southern portion of the White River-Muddy River Springs flow system.¹⁰

4 The Muddy River runs through a portion of the LWRFS before cutting southeast and
5 discharging into Lake Mead.¹¹ Many warm-water springs, including the Muddy River Springs at
6 issue in this litigation, discharge from the regional carbonate groundwater aquifer.¹² The series of
7 springs, collectively referred to as the “Muddy River Springs” in the Muddy River Springs Area
8 hydrographic basin form the headwaters of the Muddy River and provide the only known habitat for
9 the endangered Moapa dace.¹³

10 The Muddy River Springs are directly connected to, and discharge from, the regional
11 carbonate aquifer.¹⁴ Because of this connection, flows from the springs are dependent on the
12 elevation of groundwater within the carbonate aquifer, and can change rapidly in direct response to
13 changes in carbonate groundwater levels.¹⁵ As carbonate groundwater levels decline, spring flows
14 decrease, beginning with the highest-elevation springs.¹⁶

15 As early as 1989, there were concerns that sustained groundwater pumping from the
16 carbonate-rock aquifer would result in water table declines, substantially deplete the water stored in
17 the aquifer, and ultimately reduce or eliminate flow from the warm-water springs that discharge
18 from the aquifer.¹⁷

19
20 _____
21 ⁹ SE ROA 11349-59.

22 ¹⁰ See SE ROA 11350.

23 ¹¹ SE ROA 41943.

24 ¹² SE ROA 660-61, 53056, 53062.

25 ¹³ SE ROA 663-664, 41959, 48680.

26 ¹⁴ SE ROA 73-75, 34545, 53062.

27 ¹⁵ SE ROA 60-61, 34545.

28 ¹⁶ SE ROA 46, 34545.

¹⁷ See SE ROA 661.

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The general rule in Nevada is that one acquires a water right by filing an application to appropriate water with the Nevada Division of Water Resources (“DWR”). If the DWR approves the application, a “Permit to Appropriate” issues. Nevada has adopted the principle of “first in time, first in right,” also known as “priority.” The priority of a water right is determined by the date a permit is applied for. Nevada’s water resources are managed through administrative units called “hydrographic basins,” which are generally defined by topography, more or less reflecting boundaries between watersheds. Nevada is divided into 232 hydrographic basins (256 hydrographic basins and sub-basins, combined) based upon the surface geography and subsurface flow.

The priority of groundwater rights is determined relative to the water rights holder within the individual basins. If there is not enough water to serve all water right holders in a particular basin, “senior” appropriators are satisfied first in order of priority: the rights of “junior” appropriators may be curtailed. Historically, The Nevada State Engineer has managed hydrographic basins in a basin-by-basin manner for decades,¹⁸ and administers and manages each basin as a discrete hydrologic unit.¹⁹ The State Engineer keeps and maintains annual pumping inventories and records on a basin-by-basin basis.²⁰

This administrative structure has worked reasonably well for basins where groundwater is pumped from “basin fill” aquifers or alluvium, where the annual recharge of the groundwater historically has been estimated based upon known or estimated precipitation data - establishing the amount of groundwater that is recharged annually and can be extracted sustainably from a basin, known as the “perennial yield.” In reality, many hydrographic basins are severely over-appropriated, due to inaccurate estimates, over pumping, domestic wells, changing climate conditions, etc.

Administration of groundwater rights is made particularly complex when the main source of

¹⁸SE ROA 654, 659, 699, 726, 755.
¹⁹ SE ROA 949-1069.
²⁰ SE ROA 1070-1499.

1 groundwater is not “basin fill” or alluvium, but aquifers found in permeable geologic formations
2 lying beneath the younger basin fill, and which may underlie large regions that are not well defined
3 by the present-day hydrographic basins. This is the case with Nevada’s “Carbonate Aquifer.”

4 When necessary, the State Engineer may manage a basin that has been designated for
5 administration. NRS 534.030 outlines the process by which a particular basin can be designated for
6 administration by the State Engineer. In the instant case, six of the seven basins affected by Order
7 No. 1309 had already been designated for management under NRS 534.030, including:

- 8 a. Coyote Spring Valley Hydrographic Basin (“Coyote Spring Valley”), Basin No. 210, since
9 1985;
- 10 b. Black Mountains Area Hydrographic Basin (“Black Mountains Area”), Basin No. 215, since
11 November 22, 1989;
- 12 c. Garnet Valley Hydrographic Basin (“Garnet Valley”), Basin No. 216, since April 24, 1990;
- 13 d. Hidden Valley Hydrographic Basin (“Hidden Valley”), Basin No. 217, since October 24,
14 1990;
- 15 e. California Wash Hydrographic Basin (“California Wash”), Basin No. 218, since August 24,
16 1990; and
- 17 f. Muddy River Springs Area Hydrographic Basin (“Muddy River Springs Area”), Basin No.
18 219, since July 14, 1971.²¹

19 Kane Springs Valley (“Kane Springs Valley”), Basin 206, which was also affected by
20 Order No. 1309, had not been designated previously for administration.²²

23 ²¹ See SE ROA 2-3, 71-72.

24 ²² The Court takes judicial notice of Kane Springs Valley Basin’s status of not being designated for administration per
25 NRS 534.030. <http://water.nv.gov/StateEngineersOrdersList.aspx> (available online at the Division of Water Resources.
26 “Mapping& Data” tab, under “Water Rights” tab, “State Engineer’s Orders List and Search”). Facts that are subject to
27 judicial notice “are facts in issue or facts from which they may be inferred.” NRS 47.130(1). To be judicially noticed, a
28 fact must be “[g]enerally known” or “capable of accurate and ready determination by resort to sources whose accuracy
cannot reasonably be questioned.” NRS 47.130(2); *Andolino v. State*, 99 Nev. 346, 351, 662 P.2d 631, 633-34 (1983)
(courts may take judicial notice of official government publications); *Barron v. Reich*, 13 F.3d 1370, 1377 (9th Cir.
1994) (courts may take judicial notice of documents obtained from administrative agencies); *Greeson v. Imperial Irr.
Dist.*, 59 F.2d 529, 531 (9th Cir.1932) (courts may take judicial notice of “public documents”).

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B. The Muddy River Decree

Over one hundred years ago, this Court issued the Muddy River Decree of 1920 (sometimes referred to herein as the “Decree” or “Muddy River Decree”), which established water rights on the Muddy River.²³ The Muddy River Decree recognized specific water rights,²⁴ identified each water right holder on the Muddy River, and quantified each water right.²⁵ MVIC specifically owns certain rights “. . . to divert, convey, and use all of said waters of said River, its head waters, sources of supply and tributaries, save and except the several amounts and rights hereinbefore specified and described . . . and to divert said waters, convey and distribute the same to its present stockholders, and future stockholders, and other persons who may have acquired or who may acquire temporary or permanent rights through said Company. . .”²⁶. The Decree appropriates all water of the Muddy River at the time the Decree was entered, which was prior to any other significant development in the area. The predevelopment flow averaged approximately 33,900 acre feet per annum (“afa”).²⁷ The rights delineated through The Muddy River Decree are the oldest and most senior rights in the LWRFS.

C. The Moapa Dace

The Moapa dace (*Moapa coriacea*) is a thermophilic minnow endemic to the upper spring-fed reaches Muddy River, and has been federally listed as endangered since 1967.²⁸ Between 1933

²³ See Judgment and Decree, *Muddy Valley Irrigation Co. v. Moapa and Salt Lake Produce Co.* (the “Muddy River Decree” or “Decree”) (March 11, 1920) (SE ROA 33770-33816).

²⁴ SE ROA 33770-816. Specifically, the Muddy River Decree finds “[t]hat the aggregate volume of the several amounts and quantities of water awarded and allotted to the parties . . . is the total available flow of the said Muddy River and consumes and exhausts all of the available flow of the said Muddy River, its headwaters, sources of supply and tributaries.” SE ROA 33792-33793.

²⁵ SE ROA 33798-806.

²⁶ SE ROA 33775.

²⁷ See SNWA Report (June 2019) (SE ROA 41930 – 42072) at § 3.4.1 (SE ROA 41962) describing the predevelopment flows as measured in 1946 as 33,900 afa and the average flow measured from July 1, 1913 to June 30, 1915 and October 1, 1916 to September 30, 1917 as 34,000 afa. The NSE further recognizes 33,900 afa as the predevelopment flow. See Order 1309 (SE ROA 2-69) at p. 61 (SE ROA 62).

²⁸ SE ROA 5.

1 and 1950, the Moapa dace was abundant in the Muddy River and was estimated to inhabit as many
2 as 25 individual springs and up to 10 miles of stream habitat. However, by 1983, the species only
3 occurred in springs and two miles of spring outflows. Currently, approximately 95 percent of the
4 total Moapa dace population occurs within 1.78 miles of one major tributary system that flows from
5 three high-elevation spring complexes within the Muddy River Springs Area.²⁹

6 Threats to the Moapa Dace include non-native predatory fishes, habitat loss from water
7 diversions and impoundments, wildfire risk from non-native vegetation, and reductions to surface
8 spring-flows resulting from groundwater development.³⁰ Because the Moapa dace is entirely
9 dependent on spring flow, protecting the dace necessarily involves protecting the warm spring
10 sources of the Muddy River.³¹

11 **D. Order 1169**

12 Significant pumping of the Carbonate Aquifer in the LWRFS began in the 1980s and
13 1990s. Initial assessments of the water available in the Aquifer suggested it would provide a new
14 abundant source of water for Southern Nevada. Because the prospective water resources of the
15 LWRFS carbonate appeared to be substantial, nearly 100 water right applications for over 300,000
16 acre feet were filed in State Engineer's office.³²

17 By 2001, the State Engineer had granted more than 40,000 acre feet of applications in the
18 LWRFS. The State Engineer considered additional applications for groundwater in Coyote Spring
19 Valley and adjacent hydrographic basins. However, concerned over the lack of information
20 regarding the sustainability of water resources from the Carbonate Aquifer, the State Engineer
21 began hearings in July and August 2001 on water right applications.³³

22
23
24 _____
25 ²⁹ SE ROA 47169.

26 ³⁰ SE ROA 47160.

27 ³¹ SE ROA 42087.

28 ³² SE ROA 4, Ex. 1.

³³ *Id.*

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On March 8, 2002, the State Engineer issued Order 1169 to delay consideration of new water right applications and require the pumping of existing groundwater to determine what impact increased groundwater pumping would have on senior water rights and the environment at the Muddy River (“Aquifer Test”).³⁴ Order 1169 held in abeyance all applications for the appropriation of groundwater from the carbonate-rock aquifer system located in the Coyote Spring Valley Basin (Basin 210), Black Mountains Area Basin (Basin 215), Garnet Valley Basin (Basin 216), Hidden Valley Basin (Basin 217), Muddy River Springs aka Upper Moapa Valley Basin (Basin 210), and Lower Moapa Valley Basin (Basin 220).³⁵ California Wash (Basin 218) was subsequently added to this Order.³⁶

Notably, Kane Springs was not included in the Order 1169 study area. In Ruling 5712, the State Engineer specifically determined Kane Springs would not be included in the Order 1169 study area because there was no substantial evidence that the appropriation of a limited quantity of water in Kane Springs would have any measurable impact on the Muddy River Springs that warranted the inclusion of Kane Springs in Order 1169.³⁷ The State Engineer specifically rejected the argument that the Kane Springs rights could not be appropriated based upon senior appropriated rights in the down gradient basins.³⁸

Order 1169A, issued December 21, 2012, set up a test to “stress” the Carbonate Aquifer through two years of aggressive pumping, combined with examination of water levels in monitoring wells located throughout the LWRFS.³⁹ Participants in the Aquifer test were Southern Nevada Water Authority (“SNWA”), Las Vegas Valley Water District (“LVVWD”), Moapa Valley Water District, Coyote Springs Investments, LLC (“Coyote Springs”), Moapa Band of Paiutes, and Nevada

³⁴ SE ROA 654-669.

³⁵ See SE ROA 659, 665.

³⁶ SE ROA 659-69, Ex. 8; see also SE ROA 654, Ex. 7.

³⁷ SE ROA 719.

³⁸ SE ROA 713.

³⁹ SE ROA 654-58, Ex. 7.

1 Power Company. Pumping included 5,300 afa in Coyote Spring Valley, 14,535 afa total carbonate
2 pumping, and 3,840 afa alluvial pumping.⁴⁰ Pumping tests effects were examined at 79 monitoring
3 wells and 11 springs and streamflow monitoring sites.⁴¹ The Kane Springs basin was not included in
4 the Order 1169 aquifer testing, and Kane Springs basin water right holders were not involved, not
5 provided notice, and did not participate in the aquifer testing, monitoring or measurements,
6 submission of reports, proceedings and actions taken by the State Engineer pursuant to Order 1169.⁴²

7 The State Engineer’s conclusions from the pump test found an “unprecedented decline” in
8 high-altitude springs, an “unprecedented decline” in water levels, and that additional pumping in
9 the central part of Coyote Spring Valley or the Muddy River Spring Area could not occur without
10 conflict with existing senior rights, including decreed surface water rights on the Muddy River, or
11 the habitat of the Moapa Dace. The State Engineer attributed observed decreases in water levels in
12 other areas of the basins to the pumping during the Order 1169 test and concluded that the test
13 demonstrated connectivity within the Carbonate Aquifer of the LWRFS. On this basis, the State
14 Engineer determined that the five basin LWRFS should be jointly managed.

15 In 2014, and based on the results of the Aquifer Test, the State Engineer issued Rulings
16 6254–6261 on January 29, 2014 denying all the pending groundwater applications in Coyote
17 Springs Valley, Muddy River Springs Area, California Wash, Hidden Valley, Garnet Valley, and
18 certain portions of the Black Mountains Area.⁴³ His rationale in each ruling was the same:
19 “because these basins share a unique and close hydrologic connection and share virtually all of the
20 same source and supply of water, unlike other basins in Nevada, these five basins will be jointly
21 managed.”⁴⁴

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24 ⁴⁰ The Order uses the term acre-foot per year (afy), but for consistency with common usage, this Court uses the
equivalent term acre feet per annum.
25 ⁴¹ SE ROA 6, Ex. 1.
26 ⁴² SE ROA 36230 - 36231.
27 ⁴³ SE ROA 726 – 948.
28 ⁴⁴ See e.g., SE ROA 479.

1 **E. Interim Order 1303 and proceedings**

2 On January 11, 2019 -- nearly 17 years after issuing Order 1169, then-State Engineer Jason
3 King issued Interim Order 1303 to start a two-phased administrative process to resolve the
4 competing interests for water resources in the LWRFS.⁴⁵ He created the LWRFS as a joint
5 administrative unit and invited stakeholders to participate in an administrative hearing to address
6 the factual questions of what the boundary of the LWRFS should be, and what amount of
7 groundwater could be sustainably pumped in the LWRFS.⁴⁶ The LWRFS is the first multi-basin
8 area that the Nevada State Engineer has designated in state history. The ordering provisions in
9 Interim Order 1303 provide in pertinent part:

- 10 1. The Lower White River Flow System consisting of the Coyote Spring Valley,
11 Muddy River Springs Area, California Wash, Hidden Valley, Garnet Valley,
12 and the portion of the Black Mountains Area as described in this Order, is
13 herewith designated as a joint administrative unit for purposes of
14 administration of water rights. All water rights within the Lower White River
15 Flow System will be administered based upon their respective date of
16 priorities in relation to other rights within the regional groundwater unit.

17 Any stakeholder with interests that may be affected by water right
18 development within the Lower White River Flow System may file a report in
19 the Office of the State Engineer in Carson City, Nevada, no later than the
20 close of business on Monday, June 3, 2019.

21 Reports filed with the Office of the State Engineer should address the
22 following matters:

- 23 a. The geographic boundary of the hydrologically connected groundwater
24 and surface water systems comprising the Lower White River Flow
25 System;
- 26 b. The information obtained from the Order 1169 aquifer test and
27 subsequent to the aquifer test and Muddy River headwater spring flow as
28 it relates to aquifer recovery since the completion of the aquifer test;
- 29 c. The long-term annual quantity of groundwater that may be pumped
30 from the Lower White River Flow System, including the relationships
31 between the location of pumping on discharge to the Muddy River
32 Springs, and the capture of Muddy River flow;

33 ⁴⁵ SE ROA 635-53, Ex. 6.

34 ⁴⁶ SE ROA 82-83.

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- 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.

SE ROA 647-48, Ex. 6.

The State Engineer identified the LWRFS 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.⁴⁷ Kane Springs continued to be excluded as part of the LWRFS multi-basin area in Interim Order 1303.⁴⁸

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, and on August 9, 2019, the State Engineer held a prehearing conference. On August 23, 2019, the State Engineer issued a Notice of Hearing (which it amended on August 26, 2019), noting that the hearing would be “the first step” in determining how to address future management decisions, including policy decisions, relating to the LWRFS.⁴⁹ He also indicated that the legal question of whether groundwater pumping in the LWRFS conflicts with senior water rights would be addressed in Phase 2 of the LWRFS administrative process.⁵⁰

The Hearing Officer made it clear that “any other matter believed to be relevant” as specified in ordering paragraph 1(e) of Order 1303 would not include discussion of the administrative impacts of consolidating the basins or any policy matters affected by its decision. The State Engineer conducted a hearing on the reports submitted under Order 1303 between September 23, 2019, and October 4, 2019. At the start of the administrative hearing, the State Engineer reminded the parties the public administrative hearing was not a “trial-type” proceeding,

⁴⁷ SE ROA 70-88.

⁴⁸ *Id.*

⁴⁹ SE ROA 263, Ex. 2 (Notice); SE ROA 285, Ex. 3 (Amended Notice).

⁵⁰ SE ROA 522.

1 not a contested adversarial proceeding.⁵¹ Cross-examination was limited to between 4-17 minutes
2 per participant depending on the length of time given to a participant to present its reports.⁵²

3 Following the submission by the participating stakeholders of closing statements at the
4 beginning of December 2019, the State Engineer engaged in no additional public process and
5 solicited no additional input regarding “future management decisions, including policy decisions,
6 relating to the Lower White River Flow System basins.”⁵³

7 **F. Order 1309**

8 On June 15, 2020, the State Engineer issued Order 1309.⁵⁴ The first three ordering
9 paragraphs state as follows:

- 10 1. The Lower White River Flow System consisting of the Kane Springs Valley,
11 Coyote Spring Valley, Muddy River Springs Area, California Wash, Hidden
12 Valley, Garnet Valley, and the northwest portion of the Black Mountains Area
13 as described in this Order, is hereby delineated as a single hydrographic basin.
14 The Kane Springs Valley, Coyote Spring Valley, Muddy River Springs Area,
15 California Wash, Hidden Valley, Garnet Valley and the northwest portion of
16 the Black Mountains Area are hereby established as sub-basins within the
17 Lower White River Flow System Hydrographic Basin.
- 18 2. The maximum quantity of groundwater that may be pumped from the Lower
19 White River Flow System Hydrographic Basin on an average annual basis
20 without causing further declines in Warm Springs area spring flow and flow in
21 the Muddy River cannot exceed 8,000 afa and may be less.
- 22 3. The maximum quantity of water that may be pumped from the Lower White
23 River Flow System Hydrographic Basin may be reduced if it is determined
24 that pumping will adversely impact the endangered Moapa dace.

25 SE ROA 66, Ex. 1.

26 The Order does not provide guidance about how the new “single hydrographic basin” will
27 be administered and provided no clear analysis as to the basis for the 8000 afa number for the
28 maximum sustainable yield.

25 ⁵¹ SE ROA 52962, Transcript 6:4-6, 24 to 7:1 (Sept. 23, 2019) (Hearing Officer Fairbank).

26 ⁵² SE ROA 52962, Transcript 7:5-7 (Sept. 23, 2019) (Hearing Officer Fairbank).

27 ⁵³ See SE ROA 285, Ex. 3.

28 ⁵⁴ SE ROA 2-69.

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In its Order, the State Engineer indicated that it “considered this evidence and testimony [regarding basin inclusion and basin boundary] 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.”⁵⁵ However, the State Engineer did not disclose these criteria to the stakeholders before or during the Order 1303 proceedings. 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. The criteria are:

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

⁵⁵ SE ROA 48-49, Ex. 1.

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After consideration of the above criteria, the State Engineer decided to finalize what was preliminarily determined in Interim Order 1303, and consolidated several administrative units into a single hydrographic basin, designated as the “Lower White River Flow System” or “LWRFS.” The State Engineer also added the previously excluded Kane Springs Hydrographic Basin to the LWRFS,⁵⁶ and modified the portion of the Black Mountains area that is in the LWRFS. Although Order 1309 did not specifically address priorities or conflict of rights, 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.

G. Petitioners and Their Respective Water Rights or Interests

- a. Southern Nevada Water Authority and Las Vegas Valley Water District are government agencies serving Southern Nevada’s water needs, and own water rights in Coyote Springs Valley, Hidden Valley, Garnet Valley, and a significant portion of the Muddy River decreed rights.
- b. Coyote Spring Investments, LLC is a developer who owns water rights in Coyote Spring Valley, Kane Springs Valley, and California Wash;
- c. Apex Holding Company, LLC and Dry Lake Water LLC own real estate and water rights to the area of land commonly referred to as the Apex Industrial Park, in Garnet Valley and Black Mountains Area;
- d. The Center Biological Diversity is a national nonprofit conservation organization which does not hold any water rights, but has educational, scientific, biological, aesthetic and spiritual interests in the survival and recovery of the Moapa Dace;
- e. Muddy Valley Irrigation Company is a private company that owns most of the decreed rights

⁵⁶ The Court notes that the Nevada State Engineer determined that Kane Springs should be included in this joint management area, even though the Kane Springs Basin had not been designated previously for management through the statutory process delineated in under NRS 534.030.

- 1 in the Muddy River;
- 2 f. Nevada Cogeneration Associates Numbers 1 and 2, who operate gas-fired facilities at the
- 3 south end of the LWRFS and have water rights in the Black Mountain Area;
- 4 g. Georgia-Pacific Gypsum LLC, and Republic Technologies, Inc. are industrial companies that
- 5 have water rights in the Garnet Valley Hydrographic Basin;
- 6 h. Lincoln County Water District and Vidler Water Co. are a public water district and a private
- 7 company, respectively, and own water rights in Kane Springs Valley.

8 **III.**

9 **DISCUSSION**

10 **STANDARD OF REVIEW**

11 An aggrieved party may appeal a decision of the State Engineer pursuant to NRS 533.450(1).
12 The proceedings, which are heard by the court, must be informal and summary, but must afford the
13 parties a full opportunity to be heard. NRS 533.450(2). The decision of the State Engineer is
14 considered to be prima facie correct, and the burden of proof is on the party challenging the
15 decision. NRS 533.450(10).

16 **A. Questions of Law**

17 Questions of statutory construction are questions of law which require de novo review.
18 The Nevada Supreme Court has repeatedly held courts have the authority to undertake an
19 independent review of the State Engineer’s statutory construction, without deference to the State
20 Engineer’s determination. *Andersen Family Assoc. v. Ricci*, 124 Nev. 182, 186, 179 P.3d 1201,
21 1203 (2008) (citing *Bacher v. State Engineer*, 122 Nev. 1110, 1115, 146 P.3d 793, 798 (2006) and
22 *Kay v. Nunez*, 122 Nev. 1100, 1103, 146 P.3d 801, 804 (2006)).

23 Any “presumption of correctness” of a decision of the State Engineer as provided by NRS
24 533.450(10), “does not extend to ‘purely legal questions,’ such as ‘the construction of a statute,’
25 as to which ‘the reviewing court may undertake independent review.’” *In re State Engineer*
26 *Ruling No. 5823*, 128 Nev. 232, 238-239, 277 P.3d 449, 453 (2012) (quoting *Town of Eureka v.*
27 *State Engineer*, 108 Nev. 163, 165, 826 P.2d 948, 949 (1992)). At no time will the State
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1 Engineer’s interpretation of a statute control if an alternative reading is compelled by the plain
2 language of the statute. *See Andersen Family Assoc.*, 124 Nev. at 186, 179 P.3d at 1203.

3 Although “[t]he State Engineer’s ruling on questions of law is persuasive... [it is] not
4 entitled to deference.” *Sierra Pac. Indus. v. Wilson*, 135 Nev. Adv. Op. 13, 440 P.3e 37, 40
5 (2019). A reviewing court is free to decide legal questions without deference to an agency
6 determination. *See Jones v. Rosner*, 102 Nev. 215, 216-217, 719 P.2d 805, 806 (1986); *accord*
7 *Pyramid Lake Paiute Tribe v. Ricci*, 126 Nev. 521, 525, 245 P.3d 1145, 1148 (2010) (“[w]e
8 review purely legal questions without deference to the State Engineer’s ruling.”).

9 **B. Questions of Fact**

10 The Court’s review of the Order 1309 is “in the nature of an appeal” and limited to the
11 record before the State Engineer. *Revert v. Ray*, 95 Nev. 782, 786, 603 P.2d 262, 264 (1979). On
12 appeal, a reviewing court must “determine whether the evidence upon which the engineer based
13 his decision supports the order.” *State Engineer v. Morris*, 107 Nev. 699, 701, 819 P.2d 203, 205
14 (1991) (citing *State Engineer v. Curtis Park*, 101 Nev. 30, 32, 692 P.2d 495, 497 (1985)).

15 As to questions of fact, the State Engineer’s decision must be supported by “substantial
16 evidence in the record [.]” *Eureka Cty. v. State Engineer*, 131 Nev. 846, 850, 359 P.3d 1114, 1117
17 (2015) (quoting *Town of Eureka*, 108 Nev. at 165, 826 P.2d at 949). Substantial evidence is “that
18 which a reasonable mind might accept as adequate to support a conclusion.” *Bacher*, 122 Nev. at
19 1121, 146 P.3d at 800 (finding that a reasonable person would expect quantification of water
20 rights needed and no evidence of such quantification or calculations by the State Engineer is
21 included in the record). The Court may not substitute its judgment for that of the State Engineer,
22 “pass upon the credibility of the witness nor reweigh the evidence.” *Revert*, 95 Nev. at 786, 603
23 P.2d at 264.

24 Where a decision is arbitrary and capricious it is not supported by substantial evidence.
25 *See Clark Cty. Educ. Ass’n v. Clark Cty. Sch. Dist.*, 122 Nev. 337, 339-40, 131 P.3d 5, 7 (2006)
26 (concluding that an arbitrator’s award was “supported by substantial evidence and therefore not
27 arbitrary, capricious, or unsupported by the arbitration agreement”).

28 In *Revert*, 95 Nev. at 787, 603 P.2d at 264–65, the Nevada Supreme Court noted:

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The applicable standard of review of the decisions of the State Engineer, limited to an inquiry as to substantial evidence, presupposes the fullness and fairness of the administrative proceedings: all interested parties must have had a ‘full opportunity to be heard,’ See NRS 533.450(2); the State Engineer must clearly resolve all the crucial issues presented, See *Nolan v. State Dep’t. of Commerce*, 86 Nev. 428, 470 P.2d 124 (1970) (on rehearing); the decisionmaker must prepare findings in sufficient detail to permit judicial review, *Id.*; *Wright v. State Insurance Commissioner*, 449 P.2d 419 (Or.1969); See also NRS 233B.125. When these 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. *State ex rel. Johns v. Gragson*, 89 Nev. 478, 515 P.2d 65 (1973).

Thus, in order to survive review, Order 1309 must be statutorily authorized, resolve all crucial issues presented, must include findings in detail to permit judicial review, and must be based on substantial evidence.

CONCLUSIONS OF LAW

A. The State Engineer Did Not Have the Authority to Jointly Administrate Multiple Basins by Creating the LWRFS “Superbasin,” Nor Did He Have the Authority to Conjunctively Manage This Superbasin.

The powers of the State Engineer are limited to those set forth in the law. See, e.g., *City of Henderson v. Kilgore*, 122 Nev. 331, 334, 131 P.3d 11, 13 (2006); *Clark Cty. School Dist. v. Clark Cty. Classroom Teachers Ass’n*, 115 Nev. 98, 102, 977 P.2d 1008, 1011 (1999) (*en banc*) (An administrative agency’s powers “are limited to those powers specifically set forth by statute.”); *Clark Cty. v. State, Equal Rights Comm’n*, 107 Nev. 489, 492, 813 P.2d 1006, 1007 (1991)); *Wilson v. Pahrump Fair Water, LLC*, 137 Nev. Adv. Op. 2, 481 P.3d 853, 856(2021) (The State Engineer’s powers thereunder are limited to “only those . . . which the legislature expressly or implicitly delegates.”); *Andrews v. Nevada State Bd. of Cosmetology*, 86 Nev. 207, 208, 467 P.2d 96, 97 (1970) (“Official powers of an administrative agency cannot be assumed by the agency, nor can they be created by the courts in the exercise of their judicial function. The grant of authority to an agency must be clear.”) (*internal citation omitted*).

The Nevada Supreme Court has made clear that the State Engineer is a creature of statute and his or her actions must be within a statutory grant of authority. *Pahrump Fair Water LLC*, 481 P.3d

1 at 856 (explaining that “[t]he State Engineer’s powers thereunder are limited to ‘only those . . .
2 which the legislature expressly or implicitly delegates’” (quoting *Clark Cty.*, 107 Nev. at 492, 813
3 P.2d at 1007)); *see also Howell v. Ricci*, 124 Nev. 1222, 1230, 197 P.3d 1044, 1050 (2008) (holding
4 that the State engineer cannot act beyond his or her statutory authority).

5 The State Engineer’s authority is outlined in NRS Chapters 532, 533 and 534. Chapter 533
6 deals generally with “water rights,” which addresses surface water as well as groundwater, and
7 chapter 534 is limited to groundwater, dealing specifically with “underground water and wells.”

8 In the instant case, the State Engineer relied on the following specific statutes as authority for
9 combining prior independently designated basins as a superbasin newly named the LWRFS, and
10 then conjunctively managing⁵⁷ this superbasin:

- 11 • NRS 533.024(1)(c), which is a legislative declaration “encourag[ing] the State Engineer to
12 consider the best available science in rendering decisions concerning the available surface
13 and underground sources of water in Nevada.”⁵⁸
- 14 • NRS 534.024(1)(e), another legislative declaration that states the policy of Nevada is “[t]o
15 manage conjunctively the appropriation, use and administration of all waters of this State,
16 regardless of the source of the water.”⁵⁹
- 17 • NRS 534.020, which provides that all waters of the State belong to the public and are subject
18 to all existing rights.⁶⁰
- 19 • NRS 532.120, which allows the State Engineer to “make such reasonable rules and
20 regulations as may be necessary for the proper and orderly execution of the powers conferred
21 by law.”⁶¹

22 ⁵⁷ The Nevada Water Words Dictionary, defines “Conjunctive (Water) Use” in part, as “the integrated use and
23 management of hydrologically connected groundwater and surface water.” *Water Words Dictionary, Nevada Division of
24 Water Planning* (2022) (available online at <http://water.nv.gov/WaterPlanDictionary.aspx>) The same dictionary
25 separately defines “Conjunctive Management” as, “the integrated management and use of two or more water resources,
26 such as a (groundwater) aquifer and a surface body of water.” *Id.*

27 ⁵⁸ SE ROA 43.

28 ⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ SE ROA 44.

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- NRS 534.110(6), which allows the State Engineer to conduct investigations into any basin where average annual replenishment is not adequate for the needs of all water rights holders, and then subsequently restrict withdrawals to conform to priority rights.⁶²
- NRS 534 and specifically NRS 534.120, which allows the State Engineer to make such rules, regulations and orders as are deemed essential for the welfare of an area where the groundwater basin is being depleted.”⁶³

However, as further discussed below, the State Engineer’s reliance on these statutes for authority is misplaced, and his actions upend the bedrock principles of the prior appropriation doctrine.

1. **The Prior Appropriation Doctrine**

The doctrine of prior appropriation has been part of Nevada’s common law since the 1800’s, and is a fundamental principle of water law in Nevada. *See Lobdell v. Simpson*, 2 Nev. 274, 277-78 (1866). “An appropriative right ‘may be described as a state administrative grant that allows the use of a specific quantity of water for a specific beneficial purpose if water is available in the source free from the claims of others with earlier appropriations.’” *Desert Irr., Ltd. v. State*, 113 Nev. 1049, 1051 n.1, 944 P.2d 835, 837 (1997) (quoting Frank J. Trelease & George A. Gould, *Water Law Cases and Materials* 33 (4th ed. 1986)).

“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(1)-(2).” *Mineral Cty. v. Lyon Cty.*, 136 Nev. 503,513, 473 P.3d 418, 426 (2020). 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*, 484 P.3d 275, Docket 78319 at 2 (Nev. 2021) (unpublished disposition). 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”).

“A priority in a water right is property in itself”; therefore, “to deprive a person of his

⁶² *Id.*

⁶³ *Id.*

1 priority is to deprive him of a most valuable property right.” *Colorado Water Conservation*
2 *Bd. v. City of Cent.*, 125 P.3d 424, 434 (Colo. 2005) (internal quotation marks omitted). “A loss of
3 priority that renders rights useless ‘certainly affects the rights’ value’ and ‘can amount to a de facto
4 loss of rights.”” *Wilson v. Happy Creek, Inc.*, 135 Nev. 301, 313, 448 P.3d 1106, 1115 (2019)
5 (quoting *Andersen Family Assocs.*, 124 Nev. at 190-1, 179 P.3d at 1201).

6 Nevada’s statutory water law reflects the importance of priority. Not only did the
7 Legislature choose not to bestow the State Engineer with discretion to alter priority rights, but it also
8 affirmatively requires the State Engineer to preserve priority rights when performing the State
9 Engineer’s statutory duties. *See, e.g.*, NRS 534.110(6) (providing that any curtailment “be restricted
10 to conform to priority rights”); NRS 534.110(7) (same); NRS 533.040(2) (“If at any time it is
11 impracticable to use water beneficially or economically at the place to which it is appurtenant, the
12 right may be severed from the place of use and be simultaneously transferred and become
13 appurtenant to another place of use, in the manner provided in this chapter, without losing priority of
14 right.”).

15 The prior appropriation doctrine in Nevada, “the driest state in the Nation”⁶⁴ becomes
16 particularly critical when, as in the instant case, there is not enough water to satisfy all of the
17 existing rights of the current water right holders, and the threat of curtailment looms ominously in
18 the near future. One of the greatest values of a senior priority right is the assurance that the holder
19 will be able to use water even during a time of water shortage because junior water right holders will
20 be curtailed first. Thus, senior right holders rely on their senior priority rights when developing
21 businesses, entitling and permitting land development, negotiating agreements, making investments,
22 obtaining permits and various approvals from State and local agencies, and generally making
23 financial and other decisions based on the relative certainty of their right.

24 Priority in time of a right is only as valuable as where the holder stands in relation to others
25 in the same situation, or more specifically in this case, in the same basin. As the statutes are written,
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28 ⁶⁴ *United States v. State Engineer*, 117 Nev. 585, 592, 27 P.3d 51, 55 (2001)(Becker, J., concurring in part and
dissenting in part).

1 water right holders only compete in time for their “place in line” with other water right holders in
2 their same basin. Therefore, the year that one acquires a priority right is only as important as the
3 year that other water right holders in your basin acquired theirs. It is in this setting that State
4 Engineer has issued Order 1309.

5 **2. Joint Administration**

6 The State Engineer’s position is that the “best available science” demonstrates that the
7 seven⁶⁵ named hydrographic basins are so hydrologically interconnected that science dictates they
8 must be managed together in one superbasin. However, NRS 533.024(1)(c) is a policy declaration
9 of the Legislature’s intent that simply “encourages” the State Engineer “to consider the best
10 available science in rendering decisions” that concern water he has authority to manage. NRS
11 533.024(1)(c).

12 Statements of policy from the Legislature do not serve as a basis for government action, but
13 rather inform the interpretation of statutes that authorize specific action. *See, Pawlik v. Deng*, 134
14 Nev. 83, 85, 412 P.3d 68, 71 (2018). In *Pawlik*, the Nevada Supreme Court expressed the relevance
15 of statements of policy in terms as follows: “if the statutory language is subject to two or more
16 reasonable interpretations, the statute is ambiguous, and we then look beyond the statute to the
17 legislative history and interpret the statute in a reasonable manner ‘in light of the policy and the
18 spirit of the law.’” *Id.* (quoting *J.E. Dunn Nw., Inc. v. Corus Constr. Venture, LLC*, 127 Nev. 72, 79,
19 249 P.3d 501, 505 (2011)).

20 While such statements of policy are accorded deference in terms of statutory interpretation,
21 the Nevada Supreme Court has specifically held that they are not binding. *See McLaughlin v. Hous.*
22 *Auth. of the City of Las Vegas*, 227 P.2d 206, 93 (1951) (“It has often been said that the declaration
23 of policy by the legislature, though not necessarily binding or conclusive upon the courts, is entitled
24 to great weight, and that it is neither the duty nor prerogative of the courts to interfere in such
25 legislative finding unless it clearly appears to be erroneous and without reasonable foundation.”); *see*
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⁶⁵ More accurately, the LWRFS is comprised of six hydrographic basins and a portion of a seventh.

1 also *Clean Water Coal. v. M Resort, LLC*, 127 Nev. 301, 313, 255 P.3d 247, 255 (2011) (“The State
2 acknowledges that when legislative findings are expressly included within a statute, those findings
3 should be accorded great weight in interpreting the statute, but it points out that such findings are not
4 binding and this court may, nevertheless, properly conclude that section 18 is a general law despite
5 the Legislature's declaration to the contrary.”).

6 Statements of policy set forth by the Legislature are therefore not operative statutory
7 enactments, but rather tools to be used in interpreting operative statutes—and only then where such
8 statutes are ambiguous on their face. *See Pawlik*, 134 Nev. at 85, 412 P.3d at 71; *see also Cromer v.*
9 *Wilson*, 126 Nev. 106, 109-10, 225 P.3d 788, 790 (2010) (if the plain language of a statute “is
10 susceptible of another reasonable interpretation, we must not give the statute a meaning that will
11 nullify its operation, and we look to policy and reason for guidance”).

12 This statement of policy is not, in and of itself, a grant of authority that allows the State
13 Engineer to change boundaries of established hydrographic basins as science dictates. This Court
14 certainly acknowledges that since the time the 256 hydrographic basins and sub-basins were
15 delineated, that science and technology have made great strides. While certain navigable waters and
16 topography were more easily identifiable at the time the basins were established, the complexity lies
17 in the less obvious interconnectivity and formations of sub-surface structures that were more
18 difficult to detect at that time. There is no doubt that scientific advancements allow experts to more
19 accurately assess sub-surface formations and groundwater than they have in the past, and certainly
20 technology will continue to improve accuracy in the future. However, this Court notes that the
21 Legislature specifically used the word “encourages” to describe how the Nevada State Engineer
22 should utilize the best available science. NRS 533.024(1)(c). The statute does not declare that the
23 best available science should dictate the decisions.

24 Indeed, if science was the sole governing principle to dictate the Nevada State Engineer’s
25 decisions, there would be a slippery slope in the changes that could be made in the boundaries of the
26 basins and how they are managed; each time scientific advancements and discoveries were made
27 regarding how sub-surface water structures are situated or interconnected, under this theory of
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1 authority, the Nevada State Engineer could change the boundaries of the existing basins. Each
2 boundary change would upend the priority of water right holders as they relate to the other water
3 right holders in the new, scientifically-dictated “basin.” This would lead to an absurd result as it
4 relates to the prior appropriation doctrine. Every water right holder would be insecure in their
5 priority, as their relative priority could change at any moment that science advances in determining
6 further interconnectivity of water below the surface. In the administration of water rights, the
7 certainty of those rights is particularly important and prior appropriation is “largely a product of the
8 compelling need for certainty in the holding and use of water rights.” *Mineral Cty. v. Lyon Cty.*, 136
9 Nev. at 518, 473 P.3d at 429 (quoting *Arizona v. California*, 460 U.S. 605, 620 (1983)). Science in
10 and of itself cannot alter common law and statutes. Thus, the State Engineer’s reliance on NRS
11 533.024(1)(c) for giving him authority to create a superbasin out of seven existing basins is
12 misplaced.

13 While NRS 532.120 allows the State Engineer to make reasonable rules and regulations as
14 may be necessary for proper and orderly execution, this authority is not without its limits, and is
15 only authorized for those “powers conferred by law.” Nothing in Chapters 532, 533 or 534 gives the
16 State Engineer direct authority to eliminate, modify, or redraw the boundaries of existing
17 hydrographic basins, or to consolidate multiple, already established, hydrographic basins into a
18 single hydrographic superbasin. For at least 50 years, holders of groundwater rights in Nevada have
19 understood a “hydrographic basin” to be an immutable administrative unit. This has been the case
20 regardless of whether the boundaries of the unit accurately reflected the boundaries of a particular
21 water resource. The Nevada Legislature has adopted a comprehensive scheme that provides the
22 framework for the State Engineer to administer surface water and groundwater. Moreover, the State
23 Engineer has, for decades, administered water on the basis of hydrographic basins identified,
24 described, and released to the public and relied upon by the Legislature, former State Engineers, and
25 the public. Applications to appropriate water are and have been on the basis of each hydrographic
26 basin. Protests, agreements, and resolutions of water applications have been on the basis of each
27 basin. Furthermore, statutes require that the State Engineer consider available water and
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1 appropriations based on the basins already defined.

2 It is interesting to note that in the statutes that *do* confer authority on the Nevada State
3 Engineer to manage water, they specifically mention the management as being done on a basin-by-
4 basin (or a sub-basin within a basin) basis. NRS 534.030 is the original source of authority for the
5 State Engineer’s designation of an “administrative area” by “basin.” NRS 534.030. Through NRS
6 534.030 and NRS 534.011, the State Engineer has authority to designate “any groundwater basin, or
7 portion therein” an “area of active management,” which refers to an area “[i]n which the State
8 Engineer is conducting particularly close monitoring and regulation of the water supply because of
9 heavy use of that supply.” Under the statute’s plain meaning, a *basin* is intended to be an
10 *administrative unit*, defined by boundaries described by “legal subdivision as nearly as possible.”
11 NRS 534.030(1)(b). In other words, a hydrographic basin so designated was synonymous with an
12 administrative unit—a *legal* construct, defined thereafter by a *geographic* boundary. Water rights
13 within these basins are to be administered according to the laws set forth in NRS Chapters 533 and
14 534, and the principles of prior appropriation are applied to water uses *within* each basin.

15 Moreover, the Legislature consistently refers to a singular basin throughout the statute. *See*,
16 *e.g.*, 534.030(1) (describing a petition under NRS Chapter 534 as one that requests the State
17 Engineer “to administer the provisions of this chapter as relating to designated areas, ... in any
18 particular basin or portion therein”); NRS 534.030(2) (“a groundwater basin”); NRS 534.030(2)
19 (“the basin”). In fact, in the State Engineer’s prior rulings and orders, including Order 1169, Order
20 1169A, and Rulings 5712 and 6455, the State Engineer employs a basin-by-basin management
21 approach.

22 NRS 534.110(6) sets forth the State Engineer’s ability to make basin-specific determinations
23 and provides the authority to curtail water rights where investigations into specific basins
24 demonstrate that there is insufficient groundwater to meet the needs of all permittees and all vested-
25 right claimants. NRS 534.110 plainly applies to investigations concerning administration and
26 designation of critical management areas within a basin. If the State Engineer conducts an
27 investigation as set forth in NRS 534.110(6) and determines that the annual replenishment to the
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1 groundwater supply is not adequate for the permittees and vested-right claimants, he has the
2 authority to either (1) order that withdrawals from domestic wells be restricted to conform to priority
3 rights, or (2) designate as a critical management area the basin in which withdrawals of groundwater
4 consistently exceed the perennial yield. NRS 534.110(6)-(7). It is important to note, however, that
5 the statute does not provide authority to change the boundaries of established basins, combine
6 multiple basins into one unit or superbasin, and then modify or curtail groundwater rights based
7 upon restructured priority dates in this newly created superbasin.

8 The Court acknowledges that the State Engineer can and should take into account how water
9 use in one basin may affect the water use in an adjoining or closely related basin when determining
10 how best to “actively manage” a basin. However, this is much different than how the State Engineer
11 defines “joint management”: erasing the borders of seven already established legal administrative
12 units and creating one legal superunit in the LWRFS superbasin. If the Legislature intended for the
13 State Engineer to designate areas across multiple basins for “joint administration,” it would have so
14 stated. *See Slade v. Caesars Entm’t Corp.*, 132 Nev. 374, 380-81, 373 P.3d 74, 78 (2016) (citing
15 Antonin Scalia & Bryan A. Garner, *Reading Law: The Interpretation of Legal Texts*, 107 (2012)
16 (“The expression of one thing implies the exclusion of others.”)). Thus, under NRS 534.030, while
17 the State Engineer can administer basins individually, the statute does not allow the State Engineer
18 to combine basins for joint administration, nor do NRS 532.120, NRS 533.024, or NRS 534.110(6)
19 confer express authority on the State Engineer to do so.

20 **3. Conjunctive Management**

21 The Nevada State Engineer relies on NRS 534.024(1)(e), as the source of authority that
22 allows him to manage both surface and groundwater together through “conjunctive management.”⁶⁶
23 Historically, surface water and ground water have been managed separately. In fact, the term
24 “conjunctive management” was only introduced in the statutes in the 2017 session of the Nevada
25 Legislature when it added subsection 1(e) to NRS 533.024. However, as discussed previously, this
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⁶⁶ SE ROA 43.

1 statute is a declaration of legislative intent, and as a statement of policy, it does not constitute a grant
2 of authority to the State Engineer, nor is it a water management tool in and of itself.

3 In fact, there is no authority or guidance whatsoever in the statutes as to how to go about
4 conjunctively managing water and water rights. While the Court agrees that it makes sense to take
5 into account how certain groundwater rights may affect other surface water rights when managing
6 water overall, as this Court noted previously, the powers of the State Engineer are limited to those
7 set forth in the law. While Nevada law provides certain tools for the management of water rights in,
8 for example, over appropriated basins, *e.g.*, NRS 534.110(7) (authorizing the State Engineer to
9 “designate as a critical management area any basin in which withdrawals of groundwater
10 consistently exceed the perennial yield of the basin”), nothing in Chapters 532, 533 or 534 gives the
11 State Engineer express authority to conjunctively manage, in this proceeding, both the surface and
12 groundwater flows he believes are occurring in the LWRFS superbasin.

13 This Court finds that as a result of the consolidation of the basins, the relative priority of all
14 water rights within the seven affected basins will be reordered and the priorities will be considered
15 in relation to all water rights holders in the consolidated basins, rather than in relation only to the
16 other users within the original separate basins.⁶⁷ By redefining and combining seven established
17 basins for “joint administration,” and “conjunctive management,” the State Engineer essentially
18 strips senior right holders of their priority rights by deciding that all water rights within the LWRFS
19 superbasin should be administered based upon their respective dates of priority in relation to other
20 rights “within the regional groundwater unit.”

21 The State Engineer’s position is that the determination of conflicts and priorities has not yet
22 occurred since that is to occur in the second step of the proceeding. However, by the very nature of
23 erasing the existing basins and putting all of the water rights holders in one superbasin, he has
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25 _____
26 ⁶⁷ This Court rejects the State Engineer’s argument that Order 1309 did not change priorities merely because it did not
27 change priority dates. His argument conflates the meaning of *priority* as defined by the date of a water right application,
28 and the common meaning of *priority*, as defined by one’s “place in line.” While it is true that the Order does not change
priority dates, this Court finds that it *does* change the relative priorities, as petitioners who previously held the most
senior rights within their singular basin may now be relegated to more junior status within the “superbasin.”

1 already reprioritized certain rights as they relate to one another, even if their priority dates remain
2 the same.⁶⁸ As a result of creating this superbasin, water rights holders with some of the most senior
3 priority rights within their basin are now relegated to a much a lower priority position than some
4 water right holders in basins outside of their own. Such a loss of priority would potentially render
5 certain water rights valueless, given the State Engineer’s restrictions on pumping in the entire
6 LWRFS. The Court concludes that the State Engineer does not have authority to redefine Nevada
7 basins so as to reorder the priority rights of water right holders through conjunctive management
8 within those basins. Accordingly, Order 1309 stands at odds with the prior appropriation doctrine.

9 The Court determines that the question of whether the State Engineer has *authority* to change
10 the boundaries of basins that have been established for decades, or subject that newly created basin
11 to conjunctive management, or not, is a legal question, not a factual one. The State Engineer has
12 failed to identify a statute that authorizes him to alter established basin boundaries or engage in
13 conjunctive management. Based upon the plain language of the applicable statutes, the Court
14 concludes that the State Engineer acted outside the scope of his authority in entering Order 1309.

15 **B. The State Engineer Violated Petitioners’ Due Process Rights in Failing to Provide**
16 **Notice to Petitioners or an Opportunity to Comment on the Administrative Policies Inherent**
17 **in the Basin Consolidation.**

18 The Nevada Constitution protects against the deprivation of property without due process of
19 law. Nev. Const. art. 1, § 8(5). “Procedural due process requires that parties receive notice and an
20 opportunity to be heard.” *Eureka Cty. V. Seventh Jud. Dist. Ct.*, 134 Nev. 275, 279, 417 P.3d 1121,
21 1124 (2018)(internal quotation marks omitted). “In Nevada, water rights are ‘regarded and
22 protected as real property.’” *Id.*(quoting *Application of Filippini*, 66 Nev. 17, 21-22, 202 P.2d 535,
23

24 ⁶⁸ Although this Court refrains from analyzing whether or not 1309 is supported by substantial evidence, the Court notes
25 that part of the State Engineer’s 1309 decision of limiting use to 8,000afa or less is based on the concern of adversely
26 impacting the endangered Moapa Dace, located in the Muddy River Springs. This decision does not appear to take into
27 account more nuanced effects of how pumping in each separate basin affects the Muddy River flows, no matter how far
28 away the basin is from the river. In other words, reprioritization of each water rights holder in relation to the other (by
prioritization date in the newly created superbasin) means that their standing (and more importantly, their potential for
curtailment) is only by date. Water use in one basin may not have the same effect as another in reducing Muddy River
flows; however, these distinguishing factors are all erased by combining all of the basins together for joint
administration.

1 537 (1949)). Therefore, holders of water rights in Nevada are entitled to constitutional protections
2 regarding those property rights, including procedural due process. *See id.*

3 The Nevada Supreme Court has held that “[a]lthough proceedings before administrative
4 agencies may be subject to more relaxed procedural and evidentiary rules, due process guarantees of
5 fundamental fairness still apply.” *Dutchess Bus. Serv.’s, Inc. v. Nev. State Bd. of Pharmacy*, 124
6 Nev. 701, 711, 191 P.3d 1159, 1166 (2008). In *Dutchess*, the Nevada Supreme Court noted further
7 that “[a]dministrative bodies must follow their established procedural guidelines and give notice to
8 the defending party of ‘the issues on which decision will turn and . . . the factual material on which
9 the agency relies for decision so that he may rebut it.” *Id.*

10 With respect to notice and hearing, the Nevada Supreme Court has held that “[i]nherent in
11 any notice and hearing requirement are the propositions that the notice will accurately reflect the
12 subject matter to be addressed and that the hearing will allow full consideration of it.” *Public Serv.*
13 *Comm’n of Nev. v. Southwest Gas Corp.*, 99 Nev. 268, 271, 772 P.2d 624, 626 (1983). “Notice must
14 be given at an appropriate stage in the proceedings to give parties meaningful input in the
15 adjudication of their rights.” *Seventh Jud. Dist. Ct.*, 134 Nev. at 280-81, 417 P.3d at 1125-26 (citing
16 *Hamdi v. Rumsfeld*, 542 U.S. 507, 533, 124 S.Ct. 2633, 159 L.Ed.2d 578 (2004) (“It is equally
17 fundamental that the right to notice and an opportunity to be heard must be granted at a meaningful
18 time and in a meaningful manner.”). A party’s due process rights attach at the point at which a
19 proceeding holds the *possibility* of curtailing water rights, and due process necessitates notice of that
20 possibility to the party potentially affected.⁶⁹

21 For the reasons that follow, this Court concludes that (a) the notice and hearing procedure
22 employed by the State Engineer failed to satisfy the requirements of due process because the notice
23 failed to put the parties on notice that the State Engineer would decide on a management protocol for
24

25 ⁶⁹ “[B]ecause the language in the show cause order [indicates that the district court may enter an order forcing curtailment
26 to begin, junior water rights holders must be given an opportunity to make their case for or against the option of
27 curtailment. Notice must be given at an appropriate stage in the proceedings to give parties meaningful input in the
28 adjudication of their rights... Thus, junior water rights holders must be notified before the curtailment decision is made,
even if the specific “how” and “who” of curtailment is decided in a future proceeding.” *Seventh Jud. Dist. Ct.*, 134 Nev.
275, 280–81, 417 P.3d 1121, 1125 (2018).

1 the LWRFS at the conclusion of the proceeding; (b) the hearing itself failed to satisfy due process
2 because the parties were not afforded a full and complete opportunity to address the implications of
3 the State Engineer’s decision to subject the LWRFS to conjunctive management and joint
4 administration, and (c) the State Engineer’s nondisclosure, before or during the Order 1303
5 proceedings of the six criteria he would use in evaluating the connectivity of the basins and
6 determining the new consolidated basin boundary, failed to satisfy the requirements of due process.

7 Specifically, the notice of hearing and amended notice of hearing (“Notice”) noticed an
8 opportunity for the parties that submitted Order 1303 reports to explain their positions and
9 conclusions with respect to the questions posed for consideration in Order 1303.^{70 71} But the
10 questions posed in Order 1303 did not relate to management of the LWRFS, such as issues of
11 conjunctive or joint administration, but rather related to factual inquiries. Instead, Order 1303
12 specifically authorized stakeholders to file reports addressing four specific areas, none of which
13 related to the management of the LWRFS.⁷²

14 In noticing the hearing to consider the reports submitted pursuant to Order 1303, there was
15 no mention of consideration of the prospective management of the LWRFS, *i.e.*, whether it would be
16 appropriately managed conjunctively and as a joint administrative unit. Indeed, this was consistent
17 with the Hearing Officer’s opening remarks at the August 8, 2019, prehearing conference in which
18

19 _____
⁷⁰ See SE ROA 262-82, Ex. 2; SE ROA 284-301, Ex. 3

20 ⁷¹ The Notice included the following summary:

21 On August 9, 2019, the State Engineer held a pre-hearing conference regarding the hearing on the
22 submission of reports and evidence as solicited in Order 1303.... The State Engineer established that
23 the purpose of the hearing on the Order 1303 reports was to provide the participants an opportunity to
24 explain the positions and conclusions expressed in the reports and/or rebuttal reports submitted in
25 response to the Order 1303 solicitation. The State Engineer directed the participants to limit the offer of
26 evidence and testimony to the salient conclusions, including directing the State Engineer and his staff
27 to the relevant data, evidence and other information supporting those conclusions. ***The State Engineer
further noted that the hearing on the Order 1303 reports was the first step in determining to what
extent, if any, and in what manner the State Engineer would address future management decisions,
including policy decisions, relating to the Lower White River Flow System basins. On that basis, the
State Engineer then addressed other related matters pertaining to the hearing on the Order 1303
reports, including addressing the date and sequence of the hearing, as set forth in this Notice of
Hearing.*** SE ROA 285, Ex. 3 (emphasis added).

28 ⁷² SE ROA 647-48. Ex. 6.

1 the State Engineer actively discouraged participants from providing input regarding that very
2 question. The hearing officer stated as follows at the August 8 prehearing conference:

3 And so, and I'm going to talk about this and we've spoken about this before, is
4 that really this is a threshold reporting aspect, that this is part of a multi-tiered
5 process in terms of determining the appropriate management strategy to the
6 Lower River Flow System.

7 This larger substantive policy determination is not part of the particular
8 proceeding. That's part of later proceedings....

9 SE ROA 522, Ex. 5 (Hr'g Tr. at 10:6-20).

10 The hearing officer gave additional consistent guidance at the outset of the September 23
11 hearing, further directing the parties not to address policy issues even in relation to the fact that
12 Order 1303 authorized stakeholders to include in their reports "[a]ny other matter believed to be
13 relevant to the State Engineer's analysis."⁷³ Specifically, the Hearing Officer directed as follows:

14 And while that fifth issue is [as set forth in Ordering Paragraph 1(e) of Order
15 1303] not intended to expand the scope of this hearing into making policy
16 determinations with respect to management of the Lower White River Flow
17 System basin's individual water rights, those different types of things, because
18 those are going to be decisions that would have to be made in subsequent
19 proceedings should they be necessary.

20 SE ROA 52962, Ex. 26 (Hr'g Tr. 6:4-15).

21 Not only did the notice not adequately notify the parties of the possibility of the
22 consideration and resolution of policy issues, but the Hearing Officer consistently
23 directed the parties to avoid the subject, compounding the due process violation.

24 Notwithstanding the Hearing Officer's admonitions and the plain language of the notice, the
25 State Engineer ultimately issued a dramatic determination regarding management of the LWRFS. In
26 doing so, the State Engineer precluded the participants from providing input that would have
27 allowed for the full consideration of the issue. Specifically, participants and experts did not have the
28 opportunity to, and were actively discouraged from addressing policy issues critical to the

27 ⁷³ SE ROA 648, Ex. 6.
28

1 management of the LWRFS.⁷⁴ The refusal to consider these issues ensured that the State Engineer’s
2 decision was not based on a fully developed record.

3 The State Engineer acknowledged as much in Order 1309 itself. There, the State Engineer
4 noted the fact that Georgia-Pacific and Republic raised concerns over the sufficiency of the scope of
5 the proceedings at hearing but inexplicably asserted that a to-be-determined management scheme
6 would be developed to address “management issues” in the LWRFS:

7 Georgia-Pacific and Republic asserted that boundaries are premature without
8 additional data and without a legally defensible policy and management tools in
9 place. They expressed concern that creating an administrative unit at this time
10 inherently directs policy without providing for due process. The State Engineer
11 has considered these concerns and agrees that additional data and improved
12 understanding of the hydrologic system is critical to the process. He also believes
13 that the data currently available provide enough information to delineate LWRFS
14 boundaries, and that an effective management scheme will provide for the
15 flexibility to adjust boundaries based on additional information, retain the ability
16 to address unique management issues on a sub-basin scale, and maintain
17 partnership with water users who may be affected by management actions
18 throughout the LWRFS.

19 SE ROA 54, Ex. 1.

20 This language reflects a serious misunderstanding of the effect of Order 1309. Insofar as
21 Order 1309 subjects the LWRFS to conjunctive management and joint administration, resulting in
22 effectively reordering of priority of water rights in the LWRFS superbasin, the order effectuates a
23 management scheme with far reaching consequences. Thus, agreeing on the one hand that an
24 “effective management scheme” will be necessary to address challenges in the LWRFS, but
25

26 ⁷⁴ These issues include, but are not limited to: whether Nevada law allows the State Engineer to conjunctively manage
27 multiple hydrographic basins in a manner that modifies the relative priority of water rights due to the administration
28 consolidation of basins; whether the State Engineer would establish a “critical management area” pursuant to NRS
534.110 and, if so, whether he would develop a groundwater management plan or defer to the stakeholders to develop
one; whether Nevada law gives the State Engineer authority to designate a management area that encompasses more than
one basin; whether “safe-yield” discrete management areas should be established within the proposed administrative
unit; whether water rights holders enjoy a “property right” in the relative priority of their water rights such that impairing
that right may constitute a “taking”; whether unused (or only sporadically used) senior water rights take precedence over
certificated or fully used junior rights, particularly where these junior rights are in continuous use to support
economically significant enterprises; whether States compel quantification of federal reserved rights by a date certain;
and whether the State Engineer should approach the legislature to seek different or additional management tools or
authority. See SE ROA 52801-8, Ex. 25 (Georgia Pacific and Republic Closing Argument, outlining policy questions
for consideration by the State Engineer at later proceedings, proceedings that never took place).

1 contending it will be developed in the future, reveals a lack of appreciation of the implications of the
2 order to the detriment of not only the participants but all water rights holders in the LWRFS basins.
3 Without consideration of the implications of the management decision contained in the order, it
4 cannot be based on a full consideration of the issues presented. In affirmatively limiting the scope of
5 the proceeding to include a full consideration of the issues, the State Engineer violated the
6 stakeholders’ due process rights. Both the notice and the hearing procedures employed failed to
7 comport with due process.

8 Finally, as noted above, the State Engineer did not give notice or disclose before or during
9 the Order 1303 proceedings, the six specific criteria that he would use in evaluating the connectivity
10 of the basins and determining the new consolidated basin boundary. Although the State Engineer
11 asserted that he considered the evidence and testimony presented in the public hearing “on the basis
12 of a common set of criteria that are consistent with the original characteristics conserved critical in
13 demonstrating a close hydrologic connection requiring joint management in Rulings 6254-6261,”⁷⁵
14 a review of these rulings reveals that none of the six criteria or characteristics were previously
15 identified, examined in the hydrological studies and subsequent hearing that followed the
16 completion of the Order 1169 aquifer test, or expressly disclosed in Rulings 6254-6261.⁷⁶ These
17 criteria were instead explicitly disclosed for the first time in Order 1309, which means the
18 participants had no opportunity to directly address these criteria in their presentations, or critically,
19 to address the appropriateness of these criteria.

20 This Court is unpersuaded by the State Engineer’s argument that it could develop the criteria
21 only after it heard all the evidence at the hearing. Even if it did, this does not justify a deprivation of
22 the right to due process. In order to provide the parties due process and a meaningful opportunity to
23 present evidence on these issues, the State Engineer should have included these factors in the Notice
24 of Pre-Hearing Conference. *See Eureka Cty.*, 131 Nev. at 855, 359 P.3d at 1120; *Revert*, 95 Nev. at
25 787, 603 P.2d at 265 (criticizing the state engineer for engaging in post hoc rationalization). This
26

27 ⁷⁵ See SE ROA 48.

28 ⁷⁶ SE ROA 726-948.

1 due process violation is particularly harmful to water rights holders in Kane Springs, the sole basin
2 that had not been previously designated for management under NRS 534.030, had not been included
3 in the Order 1169 aquifer test, and had not been identified as a basin to be included in the LWRFS
4 superbasin in Order 1303.

5 Accordingly, this Court concludes that revealing the criteria only after stakeholders had
6 engaged in the extensive investigations, expert reporting, and the intense factual hearing requested
7 by Order 1303 further violates the participants' due process rights.

8 As this Court has determined that the Nevada State Engineer exceeded his statutory authority
9 and violated the participants' due process rights in issuing Order 1309, it declines to reach further
10 analysis on whether his factual findings in Order 1309 were supported by substantial evidence.

11 **IV.**
12 **CONCLUSION**

13 The Court FINDS that the Nevada State Engineer exceeded his statutory authority and had
14 no authority based in statute to create the LWRFS superbasin out of multiple distinct, already
15 established hydrographic basins. The Nevada State Engineer also lacked the statutory authority to
16 conjunctively manage this LWRFS superbasin.

17 The Court ALSO FINDS that the Nevada State Engineer violated the Petitioners'
18 Constitutional right to due process by failing to provide adequate notice and a meaningful
19 opportunity to be heard.

20 As a result, Order 1309 is arbitrary, capricious, and therefore void.

21 Good cause appearing, based upon the above Findings of Fact and Conclusions of Law, the
22 Court ORDERS, ADJUDGES AND DECREES as follows:

23 IT IS HEREBY ORDERED that the petition for review of the Nevada State Engineer's
24 Order No. 1309 filed by Petitioners Lincoln County Water District and Vidler Water Company, Inc.
25 is GRANTED.

26 IT IS FURTHER ORDERED that the petition for review of the Nevada State Engineer's
27 Order No. 1309 filed by Petitioners Coyote Springs Investment, LLC is GRANTED.
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IT IS FURTHER ORDERED that the petition for review of the Nevada State Engineer’s Order No. 1309 filed by Petitioners Apex Holding Company, LLC and Dry Lake Water, LLC is GRANTED.

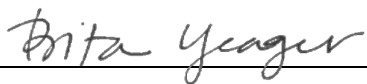
IT IS FURTHER ORDERED that the petition for review of the Nevada State Engineer’s Order No. 1309 filed by Petitioners Nevada Cogeneration Associates Nos. 1 and 2 is GRANTED.

IT IS FURTHER ORDERED that the petition for review of the Nevada State Engineer’s Order No. 1309 filed by Petitioners Georgia-Pacific Gypsum LLC, and Republic Environmental Technologies, Inc. is GRANTED.

IT IS FURTHER ORDERED that the State Engineer’s Order 1309 is VACATED in its entirety.

IT IS SO ORDERED.

Dated this 19th day of April, 2022



**66B 24A E875 2549
Bitia Yeager
District Court Judge**

1 **CSERV**

2
3 DISTRICT COURT
CLARK COUNTY, NEVADA

4
5
6 Southern Nevada Water
Authority, Plaintiff(s)

CASE NO: A-20-816761-C

7 vs.

DEPT. NO. Department 1

8
9 Nevada State Engineer, Division
of Water Resources,
10 Defendant(s)

11
12 **AUTOMATED CERTIFICATE OF SERVICE**

13 This automated certificate of service was generated by the Eighth Judicial District
14 Court. The foregoing Findings of Fact, Conclusions of Law and Order was served via the
15 court's electronic eFile system to all recipients registered for e-Service on the above entitled
case as listed below:

16 Service Date: 4/19/2022

17 Sev Carlson scarlson@kcnvlaw.com

18 Dorene Wright dwright@ag.nv.gov

19 James Bolotin jbolotin@ag.nv.gov

20 Mary Pizzariello mpizzariello@ag.nv.gov

21 Mike Knox mknox@nvenergy.com

22 Christian Balducci cbalducci@maclaw.com

23 Laena St-Jules lstjules@ag.nv.gov

24 Kiel Ireland kireland@ag.nv.gov

25 Justina Caviglia jcaviglia@nvenergy.com

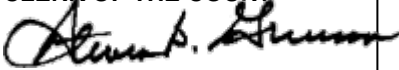
26
27
28

1	Bradley Herrema	bherrema@bhfs.com
2	Kent Robison	krobison@rssblaw.com
3	Therese Shanks	tshanks@rssblaw.com
4	William Coulthard	wlc@coulthardlaw.com
5	Emilia Cargill	emilia.cargill@coyotesprings.com
6	Therese Ure	counsel@water-law.com
7	Sharon Stice	sstice@kcnvlaw.com
8	Gregory Morrison	gmorrison@parsonsbehle.com
9	Paul Taggart	paul@legaltnt.com
10	Derek Muaina	DerekM@WesternElite.com
11	Andy Moore	moorea@cityofnorthvegas.com
12	Steven Anderson	Sc.anderson@lvvwd.com
13	Steven Anderson	Sc.anderson@lvvwd.com
14	Lisa Belenky	lbelenky@biologicaldiversity.org
15	Douglas Wolf	dwolf@biologicaldiversity.org
16	Sylvia Harrison	sharrison@mcdonaldcarano.com
17	Sylvia Harrison	sharrison@mcdonaldcarano.com
18	Lucas Foletta	lfoletta@mcdonaldcarano.com
19	Lucas Foletta	lfoletta@mcdonaldcarano.com
20	Sarah Ferguson	sferguson@mcdonaldcarano.com
21	Sarah Ferguson	sferguson@mcdonaldcarano.com
22	Alex Flangas	aflangas@kcnvlaw.com
23	Kent Robison	krobison@rssblaw.com
24		
25		
26		
27		
28		

1	Bradley Herrema	bherrema@bhfs.com
2	Emilia Cargill	emilia.cargill@wingfieldnevadagroup.com
3	William Coulthard	wlc@coulthardlaw.com
4	Christian Balducci	cbalducci@maclaw.com
5	Christian Balducci	cbalducci@maclaw.com
6	Andrew Moore	moorea@cityofnorthlasvegas.com
7	Robert Dotson	rdotson@dotsonlaw.legal
8	Justin Vance	jvance@dotsonlaw.legal
9	Steve King	kingmont@charter.net
10	Karen Peterson	kpeterson@allisonmackenzie.com
11	Wayne Klomp	wayne@greatbasinlawyer.com
12	Dylan Frehner	dfrehner@lincolncountynv.gov
13	Scott Lake	slake@biologicaldiversity.org
14	Hannah Winston	hwinston@rssblaw.com
15	Nancy Hoy	nhoy@mcdonaldcarano.com
16	Carole Davis	cdavis@mcdonaldcarano.com
17	Thomas Duensing	tom@legaltnt.com
18	Thomas Duensing	tom@legaltnt.com
19	Jane Susskind	jsusskind@mcdonaldcarano.com
20	Jane Susskind	jsusskind@mcdonaldcarano.com
21	Kellie Piet	kpiet@maclaw.com
22	Francis Flaherty	fflaherty@dyerlawrence.com
23	Courtney Droessler	cdroessler@kcnvlaw.com
24		
25		
26		
27		
28		

EXHIBIT 2

EXHIBIT 2



NEFF

1 PAUL G. TAGGART, ESQ.,
2 Nevada State Bar No. 6136
3 THOMAS P. DUENSING, ESQ.,
4 Nevada State Bar No. 15213
5 TAGGART & TAGGART, LTD.
6 108 North Minnesota Street
7 Carson City, Nevada 89703
8 T: (775) 882-9900; F: (775) 883-9900
9 paul@legaltnt.com; tom@legaltnt.com
10 STEVEN C. ANDERSON, ESQ.,
11 Nevada State Bar No. 11901

12 LAS VEGAS VALLEY WATER DISTRICT and
13 SOUTHERN NEVADA WATER AUTHORITY
14 1001 S. Valley View Blvd.
15 Las Vegas, NV 89153
16 sc.anderson@lvvwd.com
17 *Attorneys for LVVWD and SNWA*

**DISTRICT COURT
CLARK COUNTY, NEVADA**

18 LAS VEGAS VALLEY WATER DISTRICT,
19 and SOUTHERN NEVADA WATER
20 AUTHORITY, et al.

21 Petitioners,

22 vs.

23 ADAM SULLIVAN, P.E., Acting Nevada State
24 Engineer, DIVISION OF WATER RESOURCES,
25 DEPARTMENT OF CONSERVATION AND
26 NATURAL RESOURCES,

27 Respondents,

Case No. A-20-816761-C

Dept. No. 1

Consolidated with Cases:

- 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

**NOTICE OF ENTRY OF ADDENDUM
AND CLARIFICATION TO COURT'S
FINDINGS OF FACT, CONCLUSIONS OF
LAW, AND ORDER GRANTING
PETITIONS FOR JUDICIAL REVIEW**

28 //
//

Taggart & Taggart, Ltd.
108 North Minnesota Street
Carson City, Nevada 89703
(775)882-9900 - Telephone
(775)883-9900 - Facsimile

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2
3
4
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6
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AFFIRMATION: The undersigned does hereby affirm that the preceding document and/or attachments do not contain the social security number of any person.

Dated this 16th day of May 2022.

TAGGART & TAGGART, LTD.

By: /s/ Paul G. Taggart

PAUL G. TAGGART, ESQ.
Nevada State Bar No. 6136
THOMAS P. DUENSING, ESQ.
Nevada State Bar No. 15213
108 North Minnesota Street
Carson City, Nevada 89703
*Attorneys for Las Vegas Valley Water District and
Southern Nevada Water Authority*

IN ASSOCIATION WITH:
STEVEN C. ANDERSON, ESQ.,
Nevada State Bar No. 11901
LAS VEGAS VALLEY WATER DISTRICT
1001 S. Valley View Blvd.,
Las Vegas, NV 89153

Taggart & Taggart, Ltd.
108 North Minnesota Street
Carson City, Nevada 89703
(775)882-9900 - Telephone
(775)883-9900 - Facsimile

CERTIFICATE OF SERVICE

I certify that I am an employee of Taggart & Taggart, LTD, and that on this 13th day of May 2022, I served a true and correct copy of the foregoing document by electronic service to the participants in this case who are registered with the Eighth Judicial District Court’s Odyssey eFile NV File & Serve system to this matter:

OFFICE OF THE ATTORNEY GENERAL
JAMES N. BOLOTIN #13829
LAENA ST-JULES #15156C
100 North Carson Street
Carson City, Nevada 89701-4717
Email: jbolotin@ag.nv.gov
Email: lstjules@ag.nv.gov
Attorneys for Nevada State Engineer

CAVANAUGH-BILL LAW OFFICES, LLC
JULIE CAVANAUGH-BILL #11533
Henderson Bank Building
401 Railroad Street, Suite 307
Elko, Nevada 89801
Email: julie@cblawoffices.org

ROBISON, SHARP, SULLIVAN & BRUST
KENT R. ROBISON #1167
THERESE M. SHANKS #12890
71 Washington Street
Reno, Nevada 89593
Email: krobison@rssblaw.com
Email: tshanks@rssblaw.com

IN ASSOCIATION WITH:
LISA T. BELENKY (Pro Hac Vice to be submitted)
Center for Biological Diversity
1212 Broadway, Suite 800
Oakland, California 94612
Email: lbelenky@biologicaldiversity.org

IN ASSOCIATION WITH:
BRADLEY J. HERREMA #10368
BROWNSTEIN HYATT FARBER
SCHRECK, LLP
100 North City Parkway, Suite 1600
Las Vegas, Nevada 89106
Email: bherrema@bhfs.com

DOUG WOLF (Pro Hac Vice to be submitted)
Center for Biological Diversity
3201 Zafarano Drive, Suite C, #149
Santa Fe, New Mexico 87507
Email: dwolf@biologicaldiversity.org
Attorneys for Center for Biological Diversity

WILLIAM L. COULTHARD #3927
COULTHARD LAW
840 South Ranch Drive, #4-627
Las Vegas, Nevada 89106
Email: wlc@coulthardlaw.com

KAEMPFER CROWELL
ALEX J. FLANGAS #664
50 West Liberty Street, Suite 700
Reno, Nevada 89501
Email: aflangas@kcnvlaw.com
*Attorneys for Nevada Cogeneration
Associates Nos. 1 and 2*

EMILIA K. CARGILL #6493
3100 State Route 168
P.O. Box 37010
Coyote Springs, Nevada 89037
Email: emilia.cargill@coyotesprings.com
Attorneys for Coyote Springs Investment, LLC

DOTSON LAW
ROBERT A. DOTSON #5285
JUSTIN C. VANCE #11306
5355 Reno Corporate Drive, Suite 100
Reno, Nevada 89511
Email: rdotson@dotsonlaw.legal
Email: jvance@dotsonlaw.legal

MARQUIS AURBACH COFFING
CHRISTIAN T. BALDUCCI #12688
10001 Park Run Drive
Las Vegas, Nevada 89145
Email: cbalducci@maclaw.com
Email: kwilde@maclaw.com
*Attorneys for Apex Holding Company, LLC
and Dry Lake Water, LLC*

IN ASSOCIATION WITH:
STEVEN D. KING #4304
227 River Road
Dayton, Nevada 9403
Email: kingmont@charter.net
Attorneys for Muddy Valley Irrigation Company

Taggart & Taggart, Ltd.
108 North Minnesota Street
Carson City, Nevada 89703
(775)882-9900 - Telephone
(775)883-9900 - Facsimile

1 McDONALD CARANO LLP
2 SYLVIA HARRISON #4106
3 LUCAS FOLETTA #12154
4 SARAH FERGUSON #14515
5 100 W. Liberty Street, Suite 1000
6 Reno, Nevada 89501
7 Email: sharrison@mcdonaldcarano.com
8 Email: lfoletta@mcdonaldcarano.com
9 Email: sferguson@mcdonaldcarano.com
10 *Attorneys for Georgia-Pacific Gypsum, LLC*
11 *and Republic Environmental Technologies, Inc.*

6 PARSONS BEHLE & LATIMER
7 GREGORY H. MORRISON #12454
8 50 West Liberty Street, Suite 750
9 Reno, Nevada 89501
10 Email: gmorrison@parsonsbehle.com
11 *Attorneys for Moapa Valley Water District*

10 KAEMPFER CROWELL
11 SEVERIN A. CARLSON #9373
12 SIHOMARA L. GRAVES #13239
13 50 West Liberty Street, Suite 700
14 Reno, Nevada 89501
15 Email: scarlson@kcnvlaw.com
16 Email: sgraves@kcnvlaw.com
17 *Attorneys for The Church of Jesus Christ of*
18 *Latter-day Saints*

14 NEVADA ENERGY
15 JUSTINA A. CAVIGLIA #9999
16 MICHAEL D. KNOX #8143
17 6100 Neil Road
18 Reno, Nevada 89511
19 Email: justina.caviglia@nvenergy.com
20 Email: mknnox@nvenergy.com
21 *Attorneys for Nevada Power Company dba*
22 *NV Energy*

SCHROEDER LAW OFFICES, P.C.
THERESE A. URE STIX #10255
LAURA A. SCHROEDER #3595
10615 Double R Blvd., Suite 100
Reno, Nevada 89521
Email: t.ure@water-law.com
Email: schroeder@water-law.com
Attorneys for City of North Las Vegas, Western Elite
Environmental, Inc. and Bedroc Limited, LLC

LINCOLN COUNTY DISTRICT ATTORNEY
DYLAN V. FREHNER #9020
181 North Main Street, Suite 205
P.O. Box 60
Pioche, Nevada 89043
Email: dfrehner@lincolncountynv.gov

IN ASSOCIATION WITH:
WAYNE O. KLOMP #10109
SNELL & WILMER L.L.P.
50 West Liberty Street, Suite 510
Reno, Nevada 89501
Email: wklomp@swlaw.com
Attorneys for Lincoln County Water District

ALLISON MacKENZIE, LTD.
KAREN A. PETERSON #366
402 North Division Street
Carson City, Nevada 89703
Email: kpeterson@allisonmackenzie.com
Attorneys for Vidler Water Company, Inc.

/s/ Thomas Duensing
Employee of Taggart & Taggart, LTD.

EXHIBIT INDEX

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5
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<u>Exhibit</u>	<u>Description</u>	<u>Pages</u>
1.	Addendum and Clarification to Court’s Findings of Fact, Conclusions of Law, and Order Granting Petitions for Judicial Review Filed on April 19, 2022	6

EXHIBIT 1

EXHIBIT 1

FFCO

**DISTRICT COURT
CLARK COUNTY, NEVADA**

LAS VEGAS VALLEY WATER DISTRICT,
and SOUTHERN NEVADA WATER
AUTHORITY,

Case No. A-20-816761-C
Dept. No. I

Petitioners,

Consolidated with Cases:

vs.

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

TIM WILSON, P.E., Nevada State Engineer,
DIVISION OF WATER RESOURCES,
DEPARTMENT OF CONSERVATION AND
NATURAL RESOURCES,

Respondent.

And All Consolidated Cases.

**ADDENDUM AND CLARIFICATION TO COURT'S FINDINGS OF FACT,
CONCLUSIONS OF LAW, AND ORDER GRANTING PETITIONS FOR JUDICIAL
REVIEW FILED ON APRIL 19, 2022**

This matter came before this Court on consolidated petitions for judicial review of State Engineer's Order 1309 filed by Petitioners:

- Southern Nevada Water Authority and Las Vegas Valley Water District
- Coyote Spring Investment, LLC
- Apex Holding Co. and Dry Lake Water, LLC
- The Center for Biological Diversity
- Muddy Valley Irrigation Company
- Nevada Cogeneration Associates Nos. 1 and 2
- Georgia-Pacific Gypsum LLC and Republic Environmental Technologies, Inc.
- Lincoln County Water District and Vidler Water Company.

Bitia Yeager
Eighth Judicial District Court
Clark County, Nevada
Department I

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In the Order filed April 19, 2022, the Court determined that the Nevada State Engineer exceeded his statutory authority and violated the participants' due process rights in issuing Order 1309, and declined to reach further analysis on whether his factual findings in Order 1309 were supported by substantial evidence.

The Petitions filed by petitioners Southern Nevada Water Authority and Las Vegas Valley Water District, Muddy Valley Irrigation Company, and The Center for Biological Diversity supported the Nevada State Engineer's position that Order 1309 did not exceed the State Engineer's statutory authority nor violated participant's due process rights in issuing Order 1309. However, each of these three petitioners challenged the factual findings as not being supported by substantial evidence.

IV.
CONCLUSION

To the extent that the petition for review of the Nevada State Engineer's Order No. 1309 filed by Southern Nevada Water Authority and Las Vegas Valley Water District seeks relief for violating their due process rights, IT IS HEREBY ORDERED that the petition is GRANTED IN PART. The remaining portion of the petition that support the position that the Nevada State Engineer did not exceed his statutory authority in issuing Order 1309 is DISMISSED.

To the extent that the remaining petitions support the position that Nevada State Engineer did not exceed his statutory authority and provided due process in issuing Order 1309;

IT IS FURTHER ORDERED that the petition for review of the Nevada State Engineer's Order No. 1309 filed by Petitioner Muddy Valley Irrigation Company is DISMISSED.

IT IS FURTHER ORDERED that the petition for review of the Nevada State Engineer's Order No. 1309 filed by Petitioner The Center for Biological Diversity is DISMISSED.

IT IS SO ORDERED.

Dated this 13th day of May, 2022

Bitu Yeager

EE8 27A A594 AF7E
Bitu Yeager
District Court Judge

1 **CSERV**

2
3 DISTRICT COURT
CLARK COUNTY, NEVADA

4
5
6 Southern Nevada Water
Authority, Plaintiff(s)

CASE NO: A-20-816761-C

7 vs.

DEPT. NO. Department 1

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9 Nevada State Engineer, Division
of Water Resources,
10 Defendant(s)

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12 **AUTOMATED CERTIFICATE OF SERVICE**

13 This automated certificate of service was generated by the Eighth Judicial District
14 Court. The foregoing Findings of Fact, Conclusions of Law and Judgment was served via the
15 court's electronic eFile system to all recipients registered for e-Service on the above entitled
case as listed below:

16 Service Date: 5/13/2022

17 Sev Carlson scarlson@kcnvlaw.com

18 Dorene Wright dwright@ag.nv.gov

19 James Bolotin jbolotin@ag.nv.gov

20 Mary Pizzariello mpizzariello@ag.nv.gov

21 Mike Knox mknox@nvenergy.com

22 Christian Balducci cbalducci@maclaw.com

23 Laena St-Jules lstjules@ag.nv.gov

24 Kiel Ireland kireland@ag.nv.gov

25 Justina Caviglia jcaviglia@nvenergy.com

26
27
28

1	Bradley Herrema	bherrema@bhfs.com
2	Kent Robison	krobison@rssblaw.com
3	Therese Shanks	tshanks@rssblaw.com
4	William Coulthard	wlc@coulthardlaw.com
5	Emilia Cargill	emilia.cargill@coyotesprings.com
6	Therese Ure	counsel@water-law.com
7	Sharon Stice	sstice@kcnvlaw.com
8	Gregory Morrison	gmorrison@parsonsbehle.com
9	Paul Taggart	paul@legaltnt.com
10	Derek Muaina	DerekM@WesternElite.com
11	Andy Moore	moorea@cityofnorthvegas.com
12	Steven Anderson	Sc.anderson@lvvwd.com
13	Steven Anderson	Sc.anderson@lvvwd.com
14	Lisa Belenky	lbelenky@biologicaldiversity.org
15	Douglas Wolf	dwolf@biologicaldiversity.org
16	Sylvia Harrison	sharrison@mcdonaldcarano.com
17	Sylvia Harrison	sharrison@mcdonaldcarano.com
18	Lucas Foletta	lfoletta@mcdonaldcarano.com
19	Lucas Foletta	lfoletta@mcdonaldcarano.com
20	Sarah Ferguson	sferguson@mcdonaldcarano.com
21	Sarah Ferguson	sferguson@mcdonaldcarano.com
22	Alex Flangas	aflangas@kcnvlaw.com
23	Kent Robison	krobison@rssblaw.com
24		
25		
26		
27		
28		

1	Bradley Herrema	bherrema@bhfs.com
2	Emilia Cargill	emilia.cargill@wingfieldnevadagroup.com
3	William Coulthard	wlc@coulthardlaw.com
4	Christian Balducci	cbalducci@maclaw.com
5	Christian Balducci	cbalducci@maclaw.com
6	Andrew Moore	moorea@cityofnorthlasvegas.com
7	Robert Dotson	rdotson@dotsonlaw.legal
8	Justin Vance	jvance@dotsonlaw.legal
9	Steve King	kingmont@charter.net
10	Karen Peterson	kpeterson@allisonmackenzie.com
11	Wayne Klomp	wayne@greatbasinlawyer.com
12	Dylan Frehner	dfrehner@lincolncountynv.gov
13	Scott Lake	slake@biologicaldiversity.org
14	Hannah Winston	hwinston@rssblaw.com
15	Nancy Hoy	nhoy@mcdonaldcarano.com
16	Carole Davis	cdavis@mcdonaldcarano.com
17	Thomas Duensing	tom@legaltnt.com
18	Thomas Duensing	tom@legaltnt.com
19	Jane Susskind	jsusskind@mcdonaldcarano.com
20	Jane Susskind	jsusskind@mcdonaldcarano.com
21	Kellie Piet	kpiet@maclaw.com
22	Francis Flaherty	fflaherty@dyerlawrence.com
23	Courtney Droessler	cdroessler@kcnvlaw.com
24		
25		
26		
27		
28		

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EXHIBIT 2

EXHIBIT 2

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

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

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),

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

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

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

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

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

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

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 LVVWD⁴³, 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:

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

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

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

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.

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 heterogeneous 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

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

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

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

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

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

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

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

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 LRVWD’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

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

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

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

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. 1697–1698.

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 acknowledges 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

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

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 Pahrangat 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

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

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

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

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

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,

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

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

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

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

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

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

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.

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

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., Scopettone, 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 connection²⁶⁵ 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.

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, i.e., 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 LWRFS 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

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

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

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-4²⁷⁸ and limitations in relying on poor resolution water level measurements for statistical or comparative analysis²⁷⁹ 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

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 mapping²⁸⁸ 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

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.

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

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

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.

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 system³⁰⁹ 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

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.

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

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

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 pumping³²⁸ 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.

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

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.

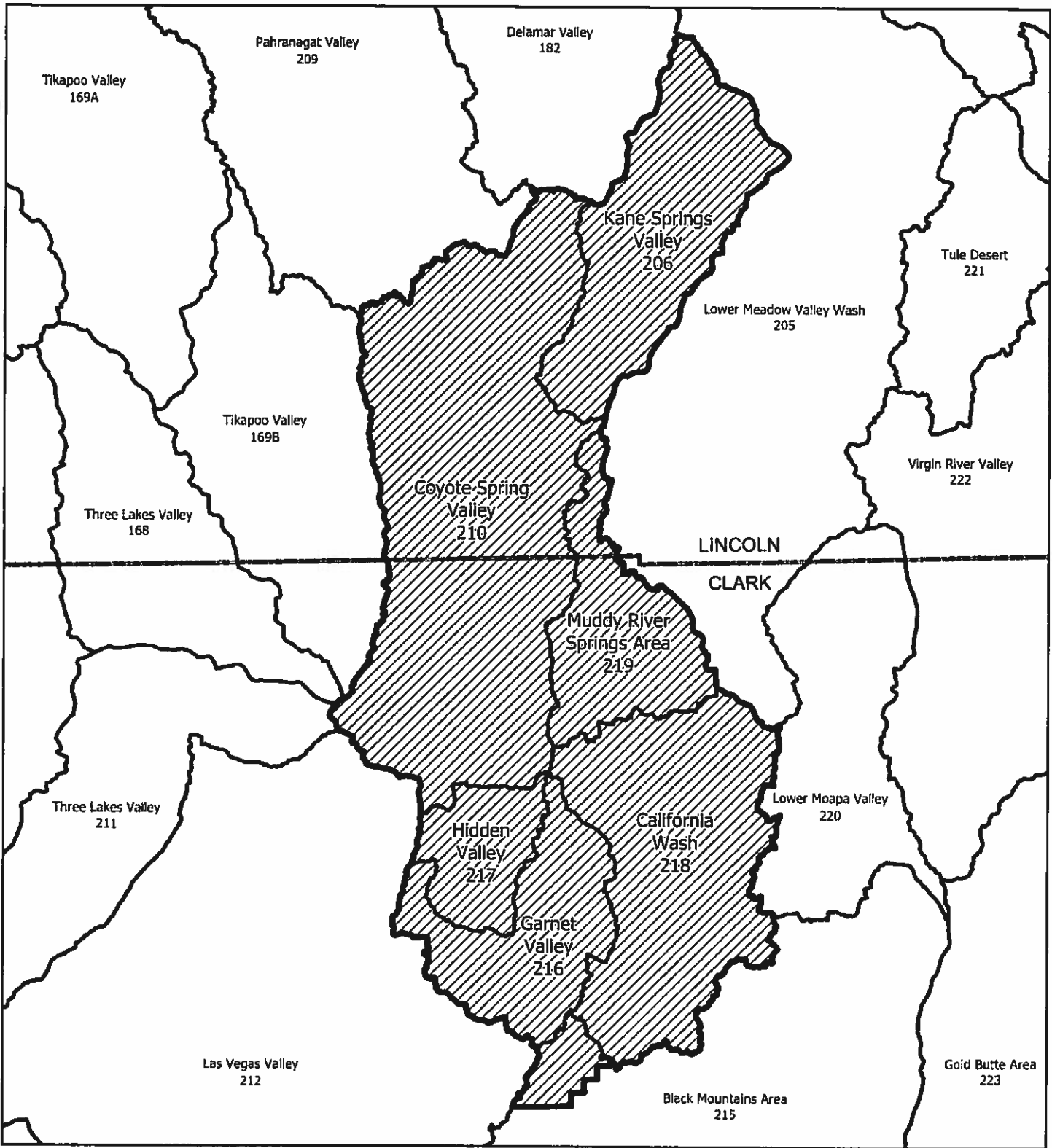


TIM WILSON, P.E.
State Engineer

Dated at Carson City, Nevada this

15th day of June, 2020.

ATTACHMENT A

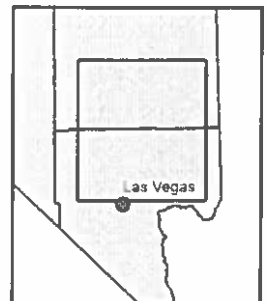





Location and Extent of LWRFS Hydrographic Basin,
Clark and Lincoln Counties, Nevada

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



-  LWRFS Boundary
-  Hydrographic Basin Boundary
-  County Boundary

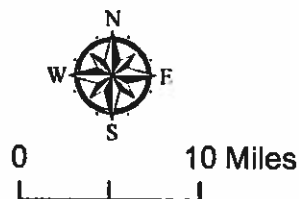
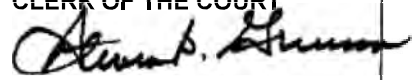


EXHIBIT 3

EXHIBIT 3



CASE NO: A-20-816761-C
Department 19

1 **PTJR**
2 PAUL G. TAGGART, ESQ.
3 Nevada State Bar No. 6136
4 TIMOTHY D. O'CONNOR, ESQ.
5 Nevada State Bar No. 14098
6 TAGGART & TAGGART, LTD.
7 108 North Minnesota Street
8 Carson City, Nevada 89703
9 (775) 882-9900 – Telephone
10 (775) 883-9900 – Facsimile
11 paul@legaltnt.com
12 tim@legaltnt.com
13 STEVEN C. ANDERSON, ESQ.,
14 Nevada State Bar No. 11901
15 LAS VEGAS VALLEY WATER DISTRICT
16 1001 S. Valley View Blvd.,
17 Las Vegas, NV 89153
18 Sc.anderson@lvvwd.com
19 *Attorneys for LVVWD and SNWA*

**DISTRICT COURT
CLARK COUNTY, NEVADA**

14 LAS VEGAS VALLEY WATER DISTRICT, and
15 SOUTHERN NEVADA WATER AUTHORITY

16 Petitioners,

17 vs.

18 TIM WILSON, P.E., Nevada State Engineer,
19 DIVISION OF WATER RESOURCES,
20 DEPARTMENT OF CONSERVATION AND
21 NATURAL RESOURCES,

22 Respondent.

Case No.

Dept. No.

**PETITION FOR JUDICIAL REVIEW OF
ORDER 1309**

23 Petitioners SOUTHERN NEVADA WATER AUTHORITY (“SNWA”) and LAS VEGAS
24 VALLEY WATER DISTRICT (“LVVWD”), by and through its counsel, PAUL G. TAGGART, ESQ.
25 and TIMOTHY D. O’CONNOR, ESQ., of the law firm of TAGGART & TAGGART, LTD., hereby
26 files this Petition for Judicial Review of Order 1309 issued by Respondent TIM WILSON, P.E., Nevada
27 State Engineer, DIVISION OF WATER RESOURCES, DEPARTMENT OF CONSERVATION AND
28

1 NATURAL RESOURCES on June 15, 2020, attached hereto as Exhibit 1. This Petition for Judicial
2 Review is filed pursuant to NRS 533.450(1).

3 **JURISDICTIONAL STATEMENT**

4 Under NRS 533.450(1), any order or decision of the State Engineer is subject to judicial review
5 “in the proper court of the county in which the matters affected or a portion thereof are situated.” The
6 real property to which the water at issue in this appeal is appurtenant lies within Clark County, Nevada;
7 therefore, the Eighth Judicial District Court of the State of Nevada in and for Clark County is the proper
8 venue for judicial review.

9 Further, the subject matter of the appeal involves decreed waters of the Muddy River Decree.
10 Under NRS 533.450(1), “on stream systems where a decree of court has been entered, the action must
11 be initiated in the court that entered the decree.” This court has proper jurisdiction of the Muddy River
12 Decree, *Muddy Valley Irrigation Company, et al, vs. Moapa Salt Lake Produce Company, et al*, Case
13 No. 377, which was entered in the Tenth Judicial District of the State of Nevada, in and for the County
14 of Clark in 1920.¹

15 **FACTUAL BACKGROUND**

16 **I. SNWA and LVVWD have substantial interests in the Lower White River Flow System.**

17 SNWA is a not-for-profit political subdivision of the State of Nevada consisting of seven
18 member agencies (local municipalities and political subdivisions in Clark County) and is a wholesale
19 water provider serving approximately 74 percent of Nevada’s population. SNWA’s water resource
20 portfolio includes approximately 20,000 afa of senior Muddy River decreed water rights, 9,000 afa of
21 groundwater in Coyote Spring Valley, and 2,200 afa of groundwater in Garnet and Hidden valleys.
22 SNWA conducted the Order 1169 pumping test and is one of the primary participants in the 2006
23 Memorandum of Agreement concerning the Moapa dace. Clark County designated SNWA’s largest
24 member purveyor, LVVWD, to be the operating entity for the Coyote Springs Water Resources General
25 Improvement District.

26 //

27 //

28 ¹ In 1920, the Tenth Judicial District consisted of Clark County and Lincoln County. In 1945, Clark County was designated
as the Eighth Judicial District.

1 **II. Order 1169 Pumping Tests**

2 On March 8, 2002, the State Engineer issued Order 1169 to hold in abeyance all pending
3 groundwater applications filed in Coyote Spring Valley, Black Mountains Area, Garnet Valley, Hidden
4 Valley, Muddy River Springs Area, and Lower Moapa Valley. The California Wash was later added to
5 the study area, making Order 1169 apply to the entire Lower White River Flow System (“LWRFS”).
6 The purpose of Order 1169 was to require a large pumping study to determine whether pumping in the
7 LWRFS would have detrimental impacts on existing water rights or the environment.

8 In 2006, a Memorandum of Agreement (“MOA”) was signed among the Southern Nevada Water
9 Authority (“SNWA”), Coyote Springs Investments (“CSI”), the United States Fish and Wildlife Service
10 (“USFWS”), the Moapa Valley Water District (“MVWD”), and the Moapa Valley Band of Paiute
11 Indians (“MBOP”). The MOA was created to ensure water usage in the LWRFS did not interfere with
12 measurable progress toward protection and recovery of the endangered Moapa Dace and its habitat. The
13 MOA contained triggers and actions for the various parties to take if flow levels in the Muddy River
14 declined. Through the MOA, all parties recognized that pumping in Coyote Spring Valley could have
15 a detrimental impact on existing water rights and the environment.

16 The State Engineer issued Order 1169A on December 21, 2012, in which he declared that the
17 Order 1169 pump test was complete. Ultimately, the State Engineer concluded that the pumping had a
18 direct connection to the fully appropriated Muddy River which is part of the source of water for the
19 endangered Moapa Dace, and the decreed senior rights of the Muddy River. The State Engineer issued
20 Rulings 6254-6258 on January 29, 2014, in which he denied all pending water right applications in the
21 LWRFS basins. The State Engineer ruled in Rulings 6254-6258 that pumping of existing rights in the
22 1169 pump tests measurably reduced flows in headwater springs of the Muddy River. While the State
23 Engineer denied the pending applications, he took no action to limit or reduce the existing water rights.

24 **III. Public Workshops**

25 Starting in 2018, the State Engineer held several public workshops review the status of
26 groundwater use and recovery following the conclusion of the State Engineer Order 1169 pumping tests.
27 The purpose of the workshops was to update the public on development in the LWRFS, address concerns
28 relating to the effect of groundwater pumping, and to provide an opportunity to comment on how to

1 proceed in developing the water resources in the LWRFS.² In the 2018 Notice of Public Workshop, the
2 State Engineer noted that pumping only 10,200 afa of the over 50,000 afa of permitted rights during the
3 Order 1169 pumping test “yielded an unacceptable loss in spring flow and aquifer storage within the
4 LWRFS.” The State Engineer found that “only a small portion of the permitted water rights in the
5 LWRFS may be fully developed without negatively affecting the endangered Moapa Dace and its habitat
6 or the senior decreed rights on the Muddy River.”³

7 As a result of the workshops, on August 30, 2018, the State Engineer drafted a proposed order.
8 On December 14, 2018, the State Engineer held a hearing on the proposed order. The State Engineer
9 received comments on the proposed order. On January 11, 2019, the State Engineer issued Interim
10 Order 1303 as a result of the workshop and proposed order process. The State Engineer continued to
11 hold several more workshops and meetings relating to the potential development of a conjunctive
12 management plan on the LWRFS.⁴

13 **IV. Order 1303**

14 On January 11, 2019, the State Engineer issued Interim Order 1303 to obtain stakeholder input
15 on four specific factual matters: 1) the geographic boundary of the LWRFS, 2) aquifer recovery since
16 the 1169 pump test, 3) long-term annual quantity that may be pumped from the LWRFS, and 4) effects
17 of moving water rights between the carbonate and alluvial system to senior water rights on the Muddy
18 River.⁵ After factual findings were made on those questions, the State Engineer was to evaluate
19 groundwater management options for the Lower White River Flow System (“LWRFS”).⁶

20 In Order 1303, the State Engineer made sound factual findings based on the Order 1169 pumping
21 test. He found that groundwater rights within the LWRFS should be jointly managed because of a
22 “unique” and “direct hydraulic connection” among basins that encompass over 1,100 square miles. He
23

24 ² June 14, 2018, Notice of Public Workshop at 2. Available at Available at <http://water.nv.gov/news.aspx?news=LWRFS>
(Public Meetings, July 24, 2018). Last visited 6/17/2020.

25 ³ *Id.*

26 ⁴ See LWRFS Working Group Meeting Agenda for February 6, 2019, and Notice of Public Workshop on July 17, 2019, dated
June 10, 2019. Available at <http://water.nv.gov/news.aspx?news=LWRFS> (Public Meetings). Last visited 6/17/2020.

27 ⁵ Exhibit 2.

28 ⁶ Exhibit 3 at 2 (“The State Engineer directed the participants to limit the offer of evidence and testimony to the salient
conclusions, including directing the State Engineer and his staff to the relevant data, evidence and other information
supporting those conclusions. The State Engineer further noted that the hearing on the Order 1303 reports was the first step
in determining to what extent, if any, and in what manner the State Engineer would address future management decisions,
including policy decisions relating to the [LWRFS] basins.”)

1 also determined water was not available for additional applications and denied all the pending
2 applications in the LWRFS through Rulings 6254-6260. The State Engineer also found that:

- 3 1. pumping has a direct interrelationship with the flow of the decreed and
4 fully appropriated Muddy River, which are the most senior rights;
- 5 2. the Muddy River had a pre-development flow of approximately 34,000
6 acre-feet annually;
- 7 3. pumping from the test caused “sharp declines in groundwater levels and
8 flows in the Pederson and Pederson East springs,” and throughout the
LWRFS; and
- 9 4. pumping in the LWRFS must be less than occurred during the test,
otherwise pumping will conflict with senior Muddy River rights or
adversely impact the Moapa dace.⁷

10 Order 1303 was issued to solicit input from experts on discrete issues to build on these foundational
11 findings from Rulings 6254-6260 – not to “start over.”

12 On May 13, 2019, the State Engineer amended Order 1303 and modified certain deadlines for
13 filing reports. On July 25, 2019, the State Engineer issued a Notice of Pre-Hearing Conference. On
14 August 23, 2019, the State Engineer held a prehearing conference. At the prehearing conference,
15 Hearing Officer Fairbank unequivocally stated that “the purpose of the hearing is not to resolve or
16 address allegations of conflict between groundwater pumping within the LWRFS and Muddy River
17 decreed rights.”⁸ On August 23, 2019, the State Engineer issued a Notice of Hearing, and again clarified
the limited scope of the hearing.

18 In July and August 2019, reports and rebuttal reports were submitted discussing the four matters
19 set forth in Order 1303. Several parties filed objections to witnesses and evidence. Most of the
20 objections were related to the scope of the topics in the submitted evidence. On August 23, 2019, the
21 State Engineer issued an Order on Objections to Witnesses and Evidence. The State Engineer agreed
22 that “the evidence presented in the hearing is to be limited to the four issues identified in the Notice of
23 Hearing.” The State Engineer allowed all evidence to be presented, but again warned that the “scope
24 of the testimony shall be limited to the four issues identified in Order 1303” and cautioned that while
25 some evidence could be submitted outside the specific scope but that the State Engineer “may order a
26 line of questioning to cease or to remain limited to the relevant issues that are the subject of the hearing.”⁹

27
28 ⁷ Exhibit 2 at 7-11.

⁸ Exhibit 4 at 12:6-15.

⁹ August 23, 2019, Order on Objections.

1 Between September 23, 2019, and October 4, 2019, the State Engineer held a hearing on the
2 reports submitted under Order 1303. As part of that hearing, SNWA offered very limited evidence of
3 conflicts with its senior water rights.¹⁰ SNWA repeatedly indicated that this evidence was limited
4 because of the prior directions of the State Engineer, and because the question of conflicts was to be
5 addressed at a latter administrative stage of the proceedings.¹¹

6 **V. Order 1309**

7 On June 15, 2020, the State Engineer issued Order 1309. In Order 1309, the State Engineer
8 determined that “reductions in flow that have occurred because of groundwater pumping in the
9 headwaters basins is not conflicting with Decreed rights.”¹²

10 **GROUNDNS FOR THE PETITION**

11 The third factual inquiry the State Engineer sought input on was: “The long-term annual quantity
12 of groundwater that may be pumped from the Lower White River Flow System, including the relationships
13 between the location of pumping on discharge to the Muddy River Springs, and the capture of Muddy River
14 flow.”¹³ The State Engineer specifically limited the evidence he would consider on this matter, stating
15 that this hearing was not to address allegations of conflict.¹⁴ During a prehearing conference, the State
16 Engineer’s staff stated that

17 the purpose of the hearing is not to resolve or address allegations of
18 conflict between groundwater pumping within the LWRFS and Muddy
19 River decreed rights. That is not the purpose of this hearing and that’s not
20 what we are going to be deciding at this point in time. The purpose of the
21 hearing is to determine what the sustainability is, what the impact is on
decreed rights, and then addressing and resolving allegations of conflict
should that be a determination that will be addressed in, at a future point
in time.¹⁵

22 Thus, the majority of the evidence submitted related to the capture of Muddy River water by junior
23 groundwater pumpers. The State Engineer agreed in Order 1309 that current pumping is capturing
24 Muddy River flows.¹⁶

25 ¹⁰ See e.g., Hr’g on Order 1303 Tr. vol. 5, 942 (Burns), SNWA Ex.7 at 7-5 to 7-6. (SNWA has suffered a loss of approximately
26 12,040 afa over the last 10 years, equating to over \$2 million in costs for replacement supplies.)

27 ¹¹ Hr’g on Order 1303 Tr. 2019-09-07 at 1049:20-1050:3(Taggart); Tr. 2019-09-27 at 1072:9-23(Pellegrino).

28 ¹² Exhibit 1 at 61.

¹³ Exhibit 2 at 13.

¹⁴ Exhibit 4 at 12:6-15.

¹⁵ Exhibit 4 at 12:6-15.

¹⁶ Exhibit 1 at 61.

1 However, the State Engineer incorrectly went beyond the scope of the hearing to determine that
2 “capture or potential capture of flows of the waters of a decreed system does not constitute a conflict.”¹⁷
3 The State Engineer stated that “there is no conflict as long as the senior water rights are served.”¹⁸ The
4 State Engineer then performed a coarse calculation to determine the consumptive use needs of the senior
5 decreed rights holders and concluded that the capture of 8,000 acre-feet of Muddy River flows by junior
6 groundwater users would not deprive the seniors of any portion of their water rights.¹⁹ The calculation
7 did not include consideration of water losses through the river system, such as losses in conveying the
8 water or losses on water reservoirs.

9 By making these findings in Order 1309, the State Engineer violated the due process rights of
10 SNWA and other senior water right owners because he indicated before the hearing that he would not
11 be making a finding on this point, and evidence on this point would not be accepted. He also acted
12 arbitrarily and capriciously because he ignored the only evidence that existed related to conflicts
13 (SNWA’s), and then applied an erroneous analysis that no party had an opportunity to review or
14 comment on. Further, the State Engineer’s method is contrary to law – particularly the Muddy River
15 Decree.

16 SNWA owns and leases substantial water rights on the Muddy River and the capture of flow by
17 junior groundwater pumping has deprived SNWA of use of its senior decreed water rights. Prior to
18 groundwater development in the LWRFS, Muddy River flows were approximately 34,000 afa, and every
19 acre-foot is apportioned in the Decree.²⁰ Since groundwater development began, Muddy River flows
20 have declined by over 3,000 afa. This is an impermissible conflict with existing rights that can only
21 continue if effective mitigation occurs for the impacts to senior water rights holders.

22 The difference between predevelopment flows and annual post-development flows represents
23 the impacts from pumping, and the conflict with SNWA’s rights, because SNWA is being deprived of
24 the full beneficial use of its senior water rights at a significant cost to the organization.²¹ The State
25 Engineer failed to consider the impacts to non-irrigation uses and failed to consider direct evidence of

26 ¹⁷ Exhibit 1 at 61

27 ¹⁸ Exhibit 1 at 60.

¹⁹ Exhibit 1 at 60-61.

²⁰ Exhibit 2 at 7.

28 ²¹ Hr’g on Order 1303 Tr. vol. 5, 942 (Burns), SNWA Ex.7 at 7-5 to 7-6. (SNWA has suffered a loss of approximately 12,040 afa over the last 10 years, equating to over \$2 million in costs for replacement supplies.)

1 conflict outside his hypothetical analysis. Current pumping has already conflicted with existing rights.
2 Continued pumping at the current levels will only continue to conflict with existing rights and harm
3 SNWA.

4 **CONCLUSION**

5 For the foregoing reasons, and for others that may be discovered and raised during the pendency
6 of this Petition for Judicial Review, LVVWD and SNWA request that the Court order the State Engineer
7 to amend Order 1309 to remove or strike findings made therein regarding conflicts with senior water
8 rights. LVVWD and SNWA do not seek relief from any other portion of Order 1309.

9 DATED this 17 day of June, 2020.

10 TAGGART & TAGGART, LTD.

11
12 By: 

13 PAUL G. TAGGART, ESQ.
14 Nevada State Bar No. 6136
15 TIMOTHY D. O'CONNOR, ESQ.
16 Nevada State Bar No. 14098
17 108 North Minnesota Street
18 Carson City, Nevada 89703
19 paul@legaltnt.com
20 tim@legaltnt.com
21 *Attorneys for LVVWD and SNWA*

22 IN ASSOCIATION WITH:

23 STEVEN C. ANDERSON, ESQ.,
24 Nevada State Bar No. 11901
25 LAS VEGAS VALLEY WATER DISTRICT
26 1001 S. Valley View Blvd.,
27 Las Vegas, NV 89153
28 Sc.anderson@lvvwd.com

CERTIFICATE OF SERVICE

Pursuant to NRCP 5(b), I hereby certify that I am an employee of TAGGART & TAGGART, LTD., and that on the 18th day of June, 2020, I served, or caused to be served, a true and correct copy of the foregoing as follows:

By **HAND-DELIVERY**:

Tim Wilson P.E., State Engineer
Nevada Division of Water Resources
Department of Conservation and Natural Resources
901 South Stewart Street, Suite 2002
Carson City, Nevada 89701

By **U.S. POSTAL SERVICE, CERTIFIED, RETURN RECEIPT REQUESTED**, by placing a true and correct copy of the foregoing document in an envelope, with postage prepaid, in Carson City, Nevada, addressed as follows:

Robert O. Kurth, Jr.
3420 North Buffalo Drive
Las Vegas, NV 89129
Attorney for 3335 Hillside, LLC

Paulina Williams
Baker Botts, L.L.P.
98 San Jacinto Boulevard, Suite 1500
Austin, TX 78701
Attorney for Georgia Pacific Corporation

Laura A. Schroeder
Therese A. Ure
10615 Double R Blvd., Ste. 100
Reno, Nevada 89521
Attorneys for City of North Las Vegas and Bedroc

Sylvia Harrison
Sarah Ferguson
McDONALD CARANO LLP
100 West Liberty Street, 10th Floor
Reno, Nevada 89501
Attorney for Georgia Pacific Corporation and Republic Environmental Technologies, Inc.

Bradley J. Herrema, Esq.
Brownstein Hyatt Farber Schreck
100 N. City Parkway, Suite 1600
Las Vegas, Nevada 89106
Attorney for Coyote Springs Investment, LLC

Severin A. Carlson
Kaempfer Crowell, Ltd.
50 W. Liberty Street, Suite 700
Reno, Nevada 89511
Attorney for Church of Jesus Christ of the Latter-Day Saints

Kent R. Robison, Esq.
Therese M. Shanks, Esq
Robison, Sharp, Sullivan & Brust
71 Washington Street
Reno, Nevada 89503
Attorney for Coyote Springs Investment, LLC

Karen Peterson
ALLISON MacKENZIE, LTD.
402 North Division Street
Carson City, Nevada 89703
Attorney for Vidler Water Company, Inc. and Lincoln County Water District

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Dylan V. Frehner, Esq.
Lincoln County District Attorney
P.O. Box 60
Pioche, NV 89043
Attorney for Lincoln County Water District

Alex Flangas
50 West Liberty Street, Suite 700
Reno, NV 89501
Attorney for Nevada Cogeneration Associates Nos. 1 and 2

Beth Baldwin
Richard Berley
ZIONTZ CHESTNUT
Fourth And Blanchard Building
2101 Fourth Avenue, Suite 1230
Seattle, Washington 98121-2331
Attorneys for Moapa Band of Paiute Indians

Steve King, Esq.
227 River Road
Dayton, NV 89403
Attorney for Muddy Valley Irrigation Company

Greg Morrison
50 W. Liberty St., Suite 750
Reno, NV 89501
Attorney for Moapa Valley Water District

Justina Caviglia
6100 Neil Road
Reno, NV 89511
Attorney for Nevada Power Company d/b/a NV Energy

LUKE MILLER
Office of the Regional Solicitor
U.S. Department of the Interior
2800 Cottage Way, Suite E1712
Sacramento, CA 95825
Attorney for U.S. Fish and Wildlife Service

Karen Glasgow
Office of the Regional Solicitor
San Francisco Field Office
U.S. Department of the Interior
333 Bush Street, Suite 775
San Francisco, CA 94104
Attorney for National Park Service

Larry Brundy
P.O. Box 136
Moapa, NV 89025

Casa De Warm Springs, LLC
1000 N. Green Valley Pkwy, #440-350
Henderson, NV 89074

Clark County
500 S. Grand Central Pkwy, 6th Fl.
Las Vegas, NV 89155-1111

Clark County Coyote Springs Water Resources GID
1001 S. Valley View Blvd.
Las Vegas, NV 89153

Mary K. Cloud
P.O. Box 31
Moapa, NV 89025

Don J. & Marsha L. Davis
P.O. Box 400
Moapa, NV 89025

Dry Lake Water, LLC
2470 St. Rose Pkwy., Ste. 107
Henderson, NV 89074

Kelly Kolhoss
P.O. Box 232
Moapa, NV 89025

Lake At Las Vegas Joint Venture, Inc.
1600 Lake Las Vegas Parkway
Henderson, NV 89011

Laker Plaza, Inc.
7181 Noon Rd.
Everson, WA 98247-9650

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28

State of Nevada Department of
Transportation
1263 S. Stewart Street
Carson City, NV 89712

William O'Donnell
2780 S. Jones Blvd. Ste. 210
Las Vegas, NV 89146

State of Nevada, Dept. of Conservation
and Natural Resources
Division of State Parks
901 S. Stewart Street, Suite 5005
Carson City, NV 8970 I

Global Hydrologic Services, Inc.
Mark D. Stock
561 Keystone A venue, #200
Reno, NV 89503-4331

Pacific Coast Building Products, Inc.
P.O. Box 364329
Las Vegas, NV 89036

Patrick Donnelly
Center for Biological Diversity
7345 S. Durango Dr.
B-107, Box 217
Las Vegas, NV 89113

S & R, Inc.
808 Shetland Road
Las Vegas, NV 89107

Lisa Belenky
Center for Biological Diversity
1212 Broadway #800
Oakland, CA 94612

Technichrome
4 709 Compass Bow Lane
Las Vegas, NV 89130

DATED this 18th day of June, 2020.



Employee of TAGGART & TAGGART, LTD.

EXHIBIT INDEX

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3.	Notice of Hearing dated August 23, 2019	26
4.	Transcript of Proceedings, Public Hearing, Pre-Hearing Conference, Thursday, August 8, 2019, pp. 11-13.	8