

STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF WATER RESOURCES

ADAM SULLIVAN, P.E.
STATE ENGINEER



MESQUITE (SANDY) VALLEY
(HYDROGRAPHIC BASIN 10-163)

GROUNDWATER PUMPAGE INVENTORY

WATER YEAR 2022

Field Investigated by: Aurelio “Manny” Fernandez
Report Prepared by: Aurelio “Manny” Fernandez

Published 8/26/2024

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ABSTRACT

This inventory represents the status and usage of all permitted, certificated, claims of vested right groundwater rights, and exempt domestic wells located within the Nevada portion of Mesquite (Sandy) Valley, Hydrographic Basin 10-163, for water year 2022 (October 1, 2021 through September 30, 2022). Also included are tables, graphs, and data associated with this use.

The data presented are valid for the period of this report and may vary from previously published figures as water rights within the basin are subject to administrative action, such as certification, cancellation, forfeiture, or withdrawal on a continual basis.

For water year 2022, the committed water resource totaled 2,319 acre-feet, with estimated pumpage of approximately **597 acre-feet**. This includes an estimated 463 acre-feet pumped from domestic wells.

Pumping by domestic wells was the largest manner of use within the basin, with 2022 pumpage estimated to be 463 acre-feet. In 2022, the second largest manner of use was quasi-municipal, with pumpage totaling 116 acre-feet and commitments totaling 311 acre-feet.

HYDROGRAPHIC BASIN SUMMARY

HYDROGRAPHIC BASIN NUMBER	163, REGION 10
HYDROGRAPHIC BASIN NAME	MESQUITE V. (SANDY V.)
COUNTIES	CLARK
MAJOR COMMUNITIES	SANDY VALLEY
DESIGNATED	YES
DENIALS BASED UPON WATER AVAILABILITY	IRRIGATION
GROUNDWATER LEVEL MEASUREMENTS	NDWR
PUMPAGE INVENTORY, ACRE-FEET IN 2022	597 ¹

STATE ENGINEER'S ORDERS

NO. 701 – DESIGNATION
NO. 1310 – CURTAILING NEW APPROPRIATIONS

DATE: JANUARY 5, 1978
 DATE: JUNE 26, 2020

COMMITTED GROUNDWATER RESOURCE: 2,319 ACRE-FEET ^{2,3}		DATE: OCTOBER 2022
COMMERCIAL 63	DOMESTIC 1,852	IRRIGATION 43
MINING & MILLING 50	QUASI-MUNICIPAL 311	

¹ Includes pumpage by exempt domestic wells, as defined by NRS 534.013.

² Committed groundwater resource data are accurate as of the date listed. Manner of use category totals vary over time, as rights are not static. Rights may be subject to change applications, certification, withdrawals, forfeiture, and cancellations; each of these circumstances could affect the duty, diversion rate, and acreage associated with a given right. The value associated with each manner of use category does not include the amount relinquished in support of domestic wells. The committed domestic water resource is considered to be 2 acre-feet per domestic well and is based on the number of domestic wells (exempt and permitted) in the NDWR Well Log Database.

³ Due to rounding, numbers presented in tables within this report may not add up precisely to the totals provided.

PURPOSE AND SCOPE

The purpose of this report is to inventory all of the groundwater resources allocated and described by the Office of the State Engineer, Nevada Division of Water Resources (NDWR), and to estimate the amount of groundwater pumped within Mesquite (Sandy) Valley Hydrographic Basin (10-163; hereafter referred to as Mesquite Valley), during water year 2022. This report estimates the amount of groundwater pumped under the permits and certificates issued by the State Engineer, claims of vested right, and the amount pumped by exempt domestic wells within the basin.

DESCRIPTION OF THE STUDY AREA

Mesquite Valley is a basin located in southern Nevada that straddles the Nevada and California state line. The valley is approximately 40 miles southwest of Las Vegas and 15 miles west of Jean, and is within the Central Hydrographic Region. The town of Sandy Valley is the principal community. The Nevada portion of the basin (approximately 240 square miles) lies within Clark County and the California portion of the basin (approximately 220 square miles) lies within Inyo and San Bernardino Counties (Figure 1).

Mesquite Valley is bounded on the east and northeast by the Spring Mountain Range, the primary watershed for the basin. The Clark Mountain Range forms the south boundary, the Mesquite Mountains border the basin to the southwest, and the Kingston Range borders the basin to the west. The northern and northwest boundaries are formed by a low alluvial rise and intermittent hills separating Mesquite Valley from Pahrump Valley. The adjacent Nevada hydrographic basins are Pahrump Valley (10-162) to the northwest, Las Vegas Valley (13-212) to the northeast, Ivanpah Valley–Northern Part (10-164A) to the east, and Ivanpah Valley–Southern Part (10-164B) to the southeast. The exterior boundary of the Mesquite Valley Hydrographic Basin is as described by Designation Order 701, issued by the Nevada State Engineer on January 5, 1978.

GROUNDWATER LEVELS

Depths to groundwater are measured in various groundwater basins in Nevada (Figure 2). Groundwater level data collected by and reported to NDWR can be found here: <http://water.nv.gov/WaterLevelData.aspx>. NDWR also maintains a mapping application for these groundwater level data: <https://tinyurl.com/WLDashboard>. Additional groundwater level data collected by the U.S. Geological Survey (USGS) at various locations across the state may be accessed through their website at: <https://waterdata.usgs.gov/nv/nwis/gw>.

METHODS TO ESTIMATE PUMPAGE

One of the purposes of this report is to estimate the amount of groundwater pumped under vested claims, permits, and certificates issued by the State Engineer, as well as the amount pumped by the exempt domestic wells in the valley. Table 1 and Figure 3 show historical pumpage by manner of use; Figure 4 shows the percentage of water pumped by manner of use; and Figure 5 compares groundwater commitments and estimated pumpage by manner of use. The following methods were used to arrive at the estimated volume of groundwater pumped in the basin:

- Where totalizing meters were in place, meter readings were taken by NDWR staff or reported by the permittee. Readings are compared with previous data, if available; reported pumpage totals may be verified by staff.
- Where meters were not in place and the use was irrigation, pumpage was estimated by multiplying the number of hours the well was operated during the past year (determined from an hour meter reading or asking the water user) by the certificated diversion rate.
- Where there were no flow meters or other reliable options for estimating pumpage and the use was irrigation, pumpage was estimated by dividing the Net Irrigation Water Requirement (NIWR) for the crop grown by the efficiency of the irrigation method used, then multiplying by the number of acres irrigated. Irrigation efficiencies associated with three types of irrigation methods are pivot at 85%, wheel line or other hand moved sprinklers at 75%, and flood at 60%. The pumpage amount estimated by this method was limited by the duty of the permit. For places where the groundwater rights were supplemental to surface water, groundwater use was estimated using the NIWR method above, but adjusted based on available surface water for the year. Evapotranspiration and NIWR data by basin can be found on the NDWR website at: <http://water.nv.gov/Evapotranspiration.aspx>.
- Where meters were not present, previous data were not available, and the manner of use was not irrigation, pumpage was estimated by applying the annual duty, if the use was as described in the certificate, permit, or claim. If the use was not as described in the certificate, permit, or claim, a value was estimated based upon the circumstances of use for the subject year.
- Exempt domestic wells may be drilled and utilized where water service from a purveyor is not available. These types of wells do not require a permit from the State Engineer if they do not pump more than 2 acre-feet per year as provided by Nevada Revised Statutes (NRS) [534.180](#). [NRS 534.013](#) defines this category of domestic use as follows: *“Domestic use or domestic purposes extends to culinary and household purposes directly related to a single family dwelling, including, without limitation, the watering of a family garden and lawn and the watering of livestock and any other domestic animals or household pets.”* The number of domestic wells (exempt and permitted) in the basin was determined by a query of the NDWR Well Log Database. The amount of water pumped by domestic wells was estimated to be 0.5 acre-feet per well in Mesquite Valley.

TABLES

Table 1. Mesquite Valley historical pumpage (acre-feet) by reporting year.

YEAR	COM	DOM	IRR	MM	QM	TOTAL
2018	9	446	37	0	141	633
2019	7	456	30	0	133	626
2020	7	456	21	0	134	618
2021	6	461	37	0	122	626
2022	12	463	6	0	116	597

NDWR also maintains a [mapping application](#) for displaying historical pumpage data by basin.

FIGURES

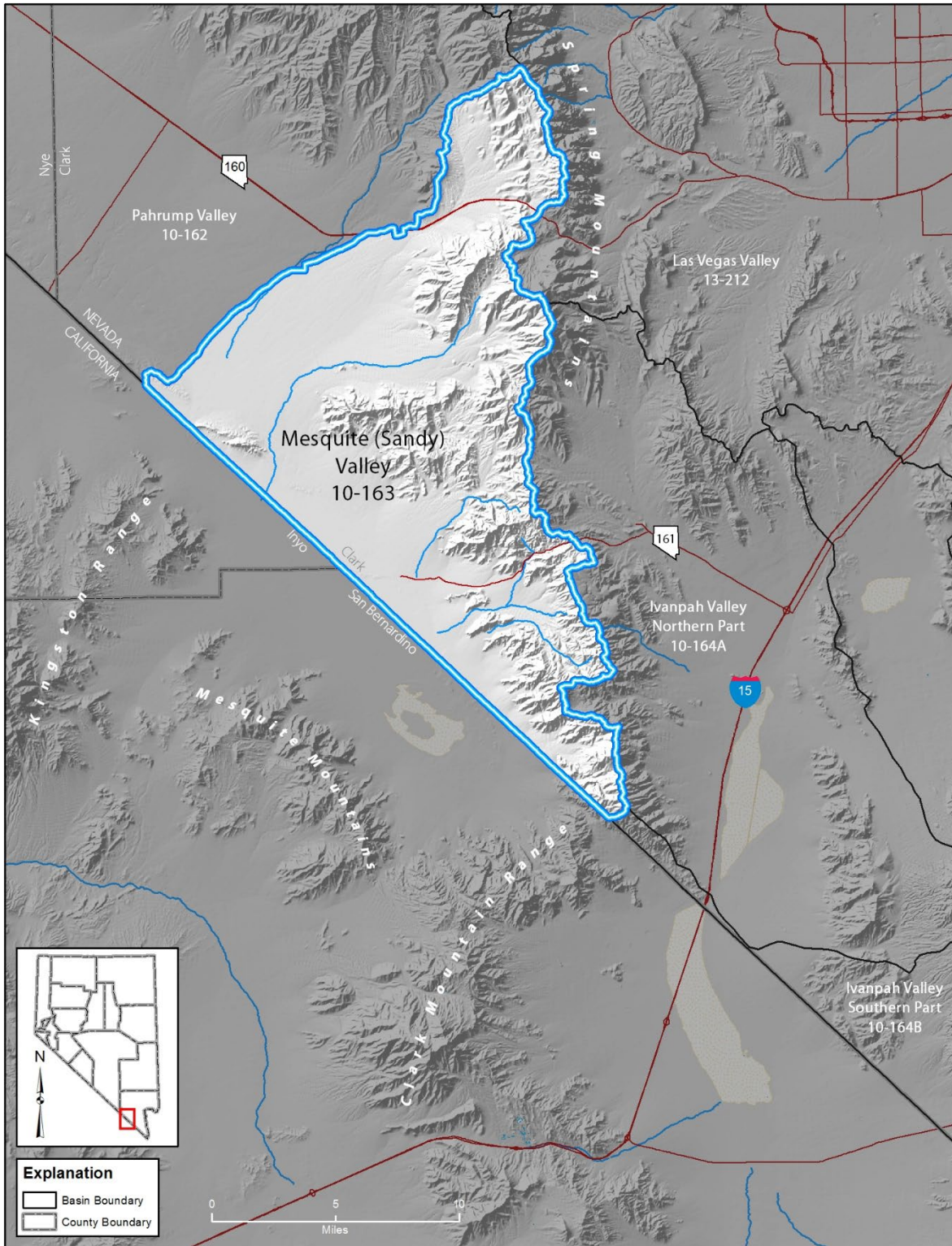


Figure 1. Physiographic map of Mesquite Valley (Hydrographic Basin 10-163).

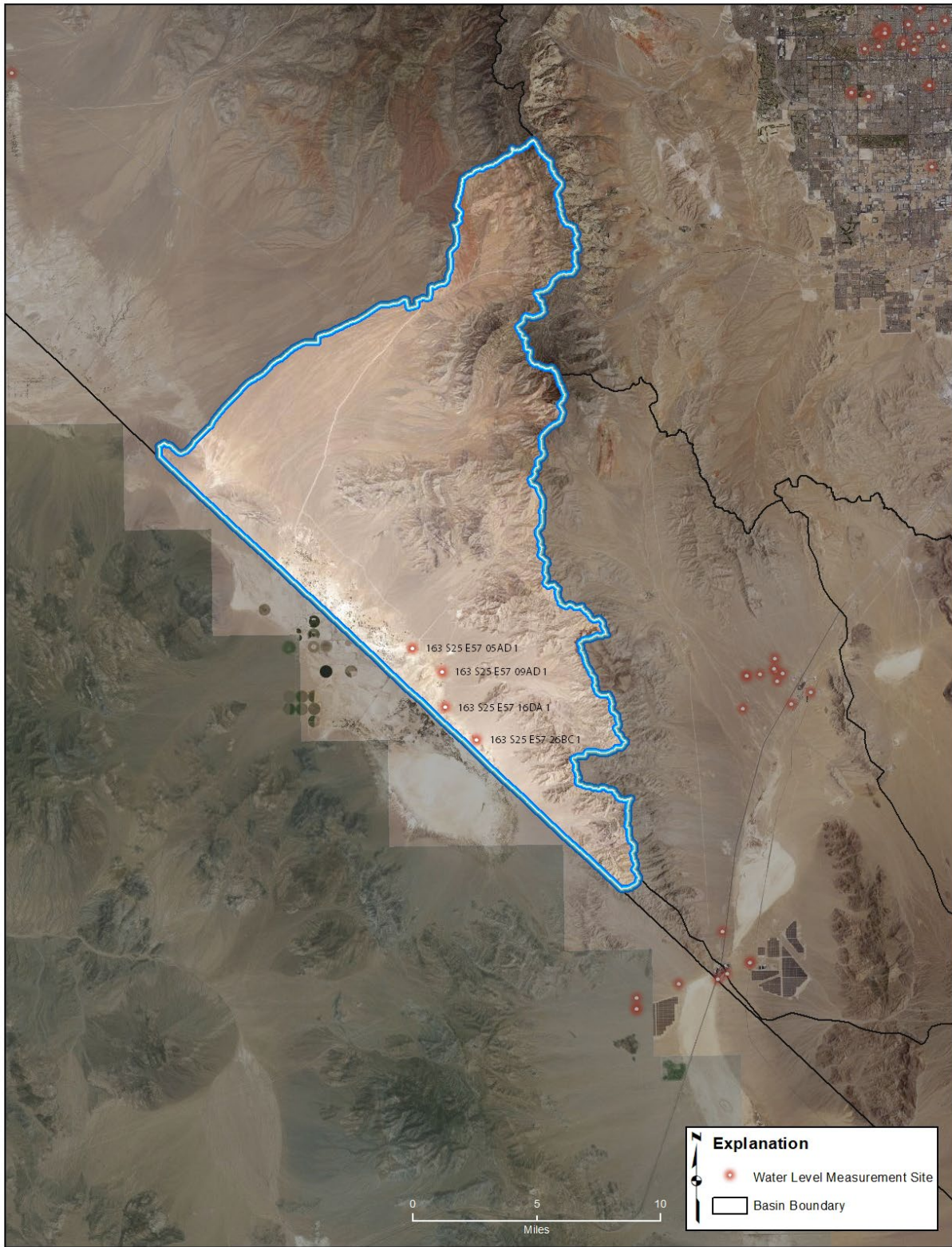


Figure 2. Mesquite Valley groundwater level measurement sites.

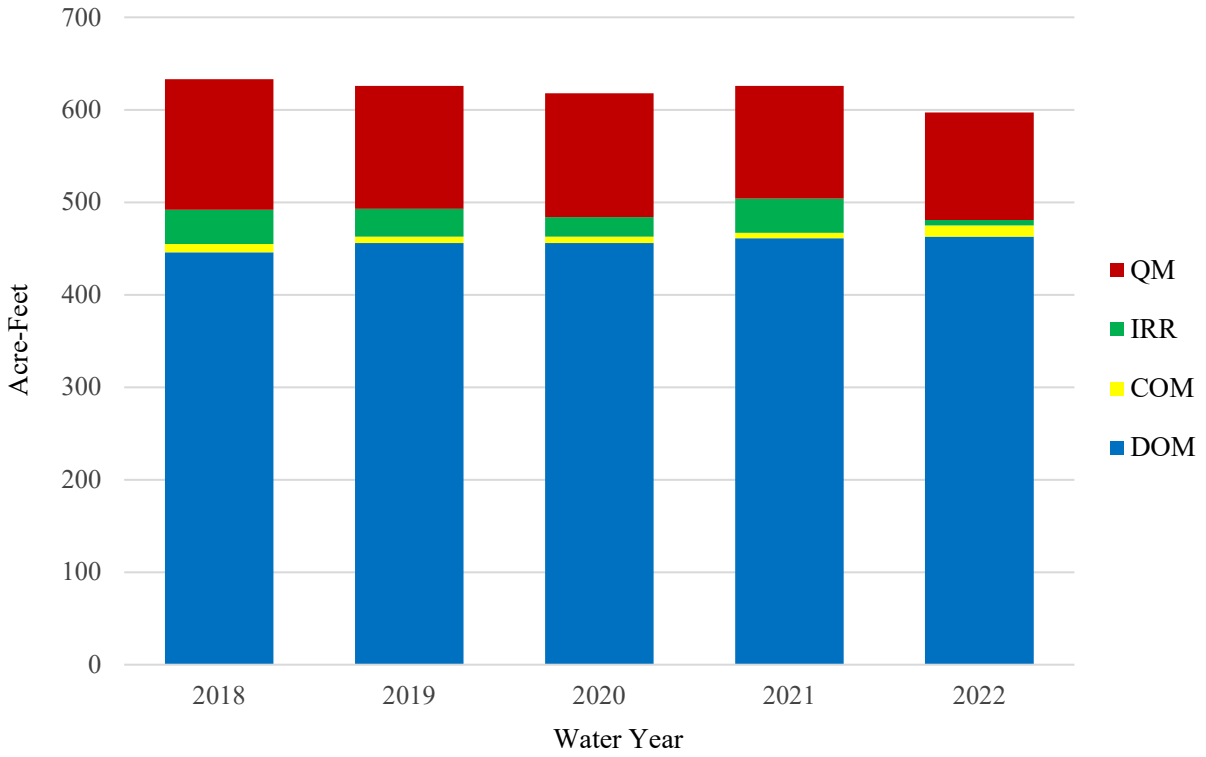


Figure 3. Mesquite Valley historical pumpage by manner of use.

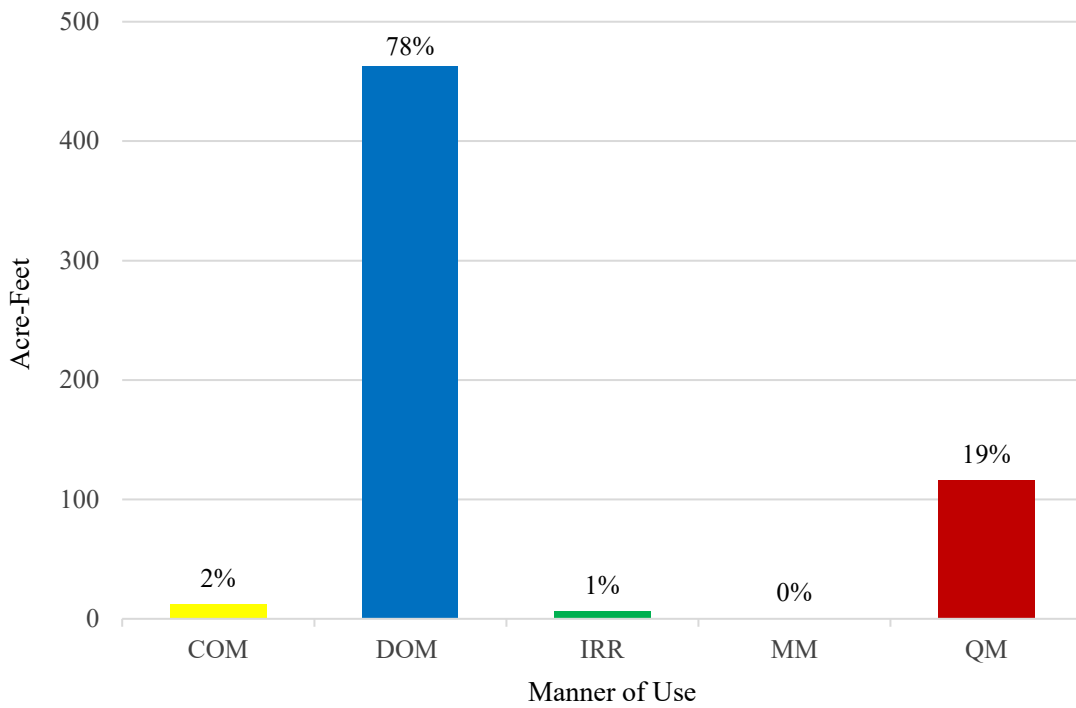


Figure 4. Percentage of 2022 groundwater pumpage by manner of use.

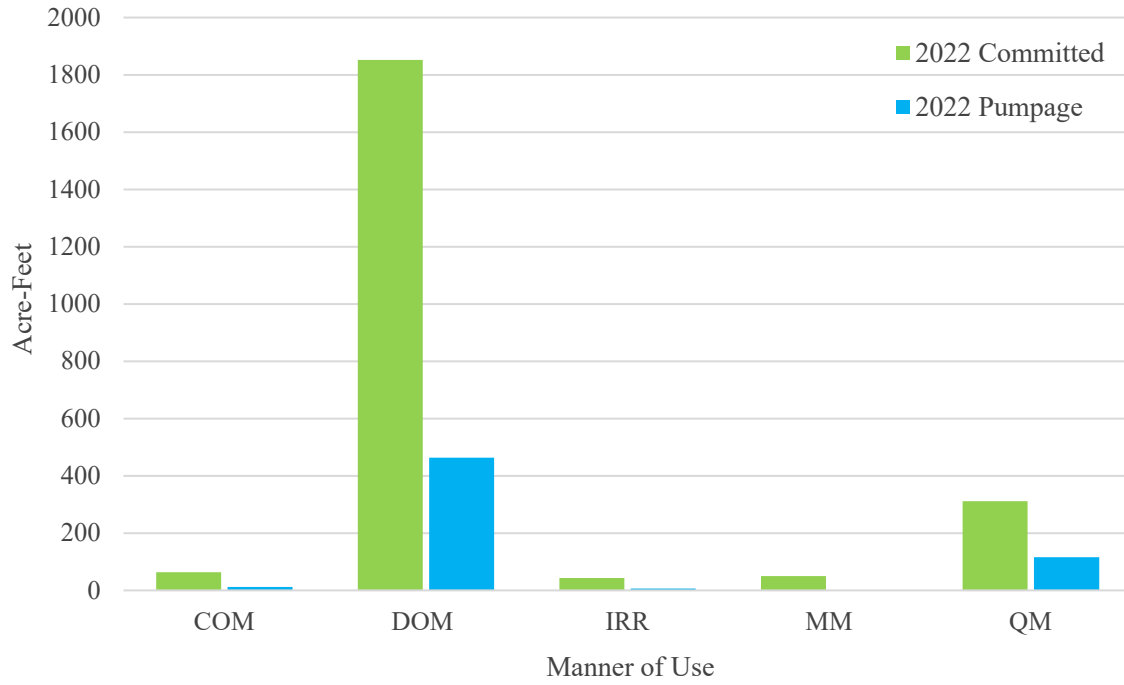


Figure 5. Comparison between 2022 groundwater commitments and estimated pumpage.

**APPENDIX A. MESQUITE VALLEY 2022 GROUNDWATER PUMPAGE BY
APPLICATION NUMBER**

EXPLANATION OF COLUMN HEADINGS FOR GROUNDWATER PUMPAGE INVENTORY

APP NUMBER	The file number of the Application or the Claim of Vested Right.															
STATUS	Indicates if the application is a Claim of Vested Right (VST), a Permit (Permit), Certificated (Cert), Cancelled (Can), Forfeited (For), Expired (Exp), or Abrogated (Abr).															
OWNER OF RECORD	The owner of the water right as recorded in the files of the State Engineer. A water right may have more than one owner of record.															
PLACE OF USE																
QQ	The quarter quarter of the Section in which the place of use and/or point of diversion is located.															
Qtr	The quarter of the Section in which the place of use and/or point of diversion is located.															
Sec	The Section in which the place of use and/or point of diversion is located.															
T	The Township in which the place of use and/or point of diversion is located.															
R	The Range in which the place of use and/or point of diversion is located.															
ACRES OR DUTY	The number of acres that are permitted to be irrigated or the duty if the manner of use is anything other than irrigation.															
ACRES IRR OR USE	The number of acres irrigated or the manner of use of the appropriated water. The types of manner of use may include: <table border="0" style="margin-left: 20px; width: 100%;"> <tr> <td>COM - Commercial</td> <td>CON - Construction</td> <td>DOM - Domestic</td> </tr> <tr> <td>ENV - Environmental</td> <td>IND - Industrial</td> <td>IRR - Irrigation</td> </tr> <tr> <td>MM - Mining & Milling</td> <td>MUN - Municipal</td> <td>OTH - Other</td> </tr> <tr> <td>PWR - Power</td> <td>QM - Quasi-Municipal</td> <td>REC - Recreation</td> </tr> <tr> <td>STK - Stockwater</td> <td>STO - Storage</td> <td>WLD - Wildlife</td> </tr> </table>	COM - Commercial	CON - Construction	DOM - Domestic	ENV - Environmental	IND - Industrial	IRR - Irrigation	MM - Mining & Milling	MUN - Municipal	OTH - Other	PWR - Power	QM - Quasi-Municipal	REC - Recreation	STK - Stockwater	STO - Storage	WLD - Wildlife
COM - Commercial	CON - Construction	DOM - Domestic														
ENV - Environmental	IND - Industrial	IRR - Irrigation														
MM - Mining & Milling	MUN - Municipal	OTH - Other														
PWR - Power	QM - Quasi-Municipal	REC - Recreation														
STK - Stockwater	STO - Storage	WLD - Wildlife														
USED (AF)	The amount of water used during the water year, in acre-feet, as determined by review of records and/or field investigation.															
REMARKS	Notes pertaining to field investigation and/or review of records.															

**GROUNDWATER PUMPAGE INVENTORY
MESQUITE (SANDY) VALLEY, NO. 163
2022**

APP NUMBER	STATUS	OWNER OF RECORD	PLACE OF USE					ACRES OR DUTY	ACRES IRR OR USE	USED (A/F)	REMARKS
			QQ	Qtr	Sec	T	R				
V09638 V09639	VST VST	KMI Zeolite, Inc.	N2	SW	03	25	57	0.00	MM	0.00	WV, no meter. Mine vacant Well disconnected, 09/09/22
26713 91769	Cert Permit	Farai III, LLC	SW	SW	25	24	56	0.40 1.00	0.00 QM	0.00 1.00	S/N 9812750 RD - 06264300 - 09/16/21 RD - 06264300 - 09/09/22 mtr brkn 2022=91769 Duty, 1 home & landscaping
28954	Cert	Bell Telephone	SE	SW	31	24	57	0.06	COM	0.06	S/N 78915860 RD - Shed locked - 09/09/22 2022 Pumpage = Duty Shed locked since 2019
31209 42512 67960	Permit Permit Permit	Sky Ranch Estates Owners Association	SW	SE	06	25	57	152.07	QM	42.56	<u>POD 31209: Well 2</u> S/N 31005560, meter installed 05/03/21 RD - 00019700 - 09/16/21 RD - 00059700 - 09/09/22 <u>POD 42512 & 67960:</u> S/N 135877 Well 1 RD - 095927000 - 09/16/21 RD - 109755000 - 09/09/22 95 of 157 lots using water
59006	Cert	Larson, Mel & Marilyn						8.96	QM	13.10	<u>POD 59006:</u> S/N 144889 RD - 56176300 - 09/16/21 RD - 60446300 - 09/09/22 1 home & landscaping - 4 lots

**GROUNDWATER PUMPAGE INVENTORY
MESQUITE (SANDY) VALLEY, NO. 163
2022**

APP NUMBER	STATUS	OWNER OF RECORD	PLACE OF USE					ACRES OR DUTY	ACRES IRR OR USE	USED (A/F)	REMARKS
			QQ	Qtr	Sec	T	R				
38311	Cert	Glen Sweney	SW	SE	32	24	57	3.13	QM	3.13	S/N 05004964 1 mh, restaurant & bar RD - 24638500 - 09/16/21 RD - 24638500 - 09/09/22 Broken meter since 2019 2022 pumpage = Duty
45515 50656	Cert Cert	Lino & Oralva Mejia Lino & Oralva Mejia 811 E. Quartz LLC	SW	SW	25	24	56	4.75 4.74	0.00 <u>1.15</u> 1.15	5.52	<u>POD 45515 & 50646:</u> S/N 873082-06 RD - 016395000 - 09/16/21 RD - 003076000 - 09/09/22 Domestic well serves 50656 POU Meter data inaccurate 2022 pumpage = 5.52 af / See field sheet
45762	Cert	L.D.S. Church	SW	NE	04	25	57	2.90	QM	4.92	S/N 67305279 RD - (1)1709460 - 09/25/19 RD - (1)5201700 - 09/09/22 water use prorated for 3 years
50579	Cert	Joseph L. Rodriguez Jr.	NW	SW	25	24	56	1.00	QM	1.69	S/N 051158204 RD - 08933200 - 09/16/21 RD - 09484900 - 09/09/22
57190	Cert	Jim Slankard	SW	SE	31	24	57	1.12	COM	0.19	S/N 92538818 General Store RD - 28173100- 09/16/21 RD - 28233600 - 09/09/22
60087	Cert	Edward & Lana Haddad Revoc. Trust	NE	NE	06	25	57	2.02	COM	0.14	S/N 94528666 Shopping center RD - 07868900 - 09/16/21 RD - 07915800 - 09/09/22

**GROUNDWATER PUMPAGE INVENTORY
MESQUITE (SANDY) VALLEY, NO. 163
2022**

APP NUMBER	STATUS	OWNER OF RECORD	PLACE OF USE					ACRES OR DUTY	ACRES IRR OR USE	USED (A/F)	REMARKS
			QQ	Qtr	Sec	T	R				
60264	Permit	Clark County Parks and Rec.	Lt.	01	01	23	57	8.00	QM	0.00	S/N 49081567 - Camp Potosi RD - 02748000 - 09/16/21 RD - 02748000 - 10/14/22
61409	Can	Augustine Bustos	SW	SW	01	23	57	0.00	COM	0.19	S/N 01289113 RD - 0039980 - 08/25/20 old meter RD - 0061000 - 10/14/22 new meter Permit Cancelled 12/10/2010
62466	Cert	Skip Powell Mgmt. Corp	NE	SW	24	24	56	4.50	COM	0.00	S/N 96502368 - gravel pit/not in operation RD - 20622300 - 09/16/21 RD - 20622300 - 09/09/22 mtr defective
62506 62507 62941	Permit Permit Permit	Clark County	Lot #6		36	24	56	90.00	QM	0.00	<u>POD 62506</u> : Well 2 S/N 60609832 - new meter 2021 RD - 15956000 - 09/16/21 RD - 15956000 - 09/09/22 Supplies 10k gal water tank
									QM	22.68	<u>POD 62507 & 62941</u> : Well 4 S/N 19026854 RD - 14238400 - 09/16/21 RD - 21629400 - 09/09/22 Sandy Valley Park
64471	Cert	Valley Elect. Assoc. Inc.	SW	SW	32	24	57	1.12	COM	0.06	S/N 16-032790 RD - 00101900 - 9/16/21 RD - 00121300 - 9/09/22
65713	Can	Talavera	SW	SE	32	24	57	0.00	COM	0.00	WV, open casing, POU vacant Permit Cancelled 05/20/16

**GROUNDWATER PUMPAGE INVENTORY
MESQUITE (SANDY) VALLEY, NO. 163
2022**

APP NUMBER	STATUS	OWNER OF RECORD	PLACE OF USE					ACRES OR DUTY	ACRES IRR OR USE	USED (A/F)	REMARKS
			QQ	Qtr	Sec	T	R				
66227 72909	Den Den	Vidler Water Company	NW	NE	14	25	57	0.00	QM	0.00	WV, capped. 09/17/20
66275	Cert	John Kamps	SW	NE	05	25	57	0.98	COM	0.50	S/N 70809192 American Gas RD - 0193910 - 09/16/21 RD - No Access - 09/09/22 Broken meter since 2019; Partial Credit
66545 84183	Cert Can	Valley Educational Valley Educational	SE	SE	31	24	57	8.35	QM	6.73	<u>POD 66545:</u> S/N 0108206 - meter units in cubic ft. RD - (1)1370630 - 09/16/21 RD - (1)1658420 - 09/09/22 <u>POD 84183:</u> S/N 14012048 - diversion rate only RD - 1330210 - 09/28/20 RD - 1371610 - 09/09/22 Permit cancelled 5/17/16 - BJ Arena
67442	Permit	Michael Kaboli	NE	NW	06	25	57	2.02	COM	0.39	S/N 00728194 RD - 0052490 - 09/06/16 RD - 0813570 - 09/09/22 water use prorated for 6 years
70428	Permit	ACVLB Family Trust	NE	SE	19	22	58	4.03	COM	9.40	S/N 64677680 - Mtn. Springs Bar RD - 11722100 - 08/25/20 RD - 15821100 - 10/14/22 water use prorated for 2 years

**GROUNDWATER PUMPAGE INVENTORY
MESQUITE (SANDY) VALLEY, NO. 163
2022**

APP NUMBER	STATUS	OWNER OF RECORD	PLACE OF USE					ACRES OR DUTY	ACRES IRR OR USE	USED (A/F)	REMARKS
			QQ	Qtr	Sec	T	R				
71449	Can	ACVLB Family Trust	NW	SW	20	22	58	0.00	COM	0.79	S/N 30050616 RD - 4682100 - 08/25/20 old meter RD - 0438110 - 10/14/22 new meter Permit cancelled 01/28/11 water use prorated for 2 years
71962	Can	Sandy Valley Rancheros Water Users	SW	SE	32	24	57	0.00	QM	1.35	S/N 850859 RD - 29036100 - 09/16/21 RD - 29476500 - 09/09/22 Permit cancelled 10/06/10
73594	Cert	Sandy Valley Church	SW	NE	06	25	57	2.00	COM	0.07	S/N 955877 RD - 09938300 - 09/16/21 RD - 09961300 - 09/09/22
74313	Permit	Zeigler	NW	NE	5	25	57	12.00	COM	0.00	WNV, POU vacant 09/09/22
83725	Permit	Altschuler Trust	SW	SW	25	24	56	4.00	QM	2.00	S/N 66979529 RD - 0000110 - 09/16/21 RD - 0000110 - 09/09/22 meter removed 2021-2022 2022 pumpage = 2020 pumpage
77285	Permit	Monte & Annette Brown	S2	SW	31	24	58	2.00	COM	0.00	Gravel pit, no use, no meter 09/09/22
77286	Permit	Living Trust	NE	NE	06	25	58	50.00	MM	0.00	
			NW	NE	06	25	58				
84258	Can	Robert Fulstone	NE	NW	06	25	57	0.00	COM	0.00	Existing well, no works, vacant lot 09/09/22 Permit cancelled 4/17/18

**APPENDIX B. MESQUITE VALLEY 2022 GROUNDWATER PUMPAGE FIELD
NOTES**

2022

Mesquite (Sandy) Valley
No. 163

Inventory Field Notes

Compiled by
Aurelio "Manny" Fernandez

State of Nevada
Division of Water Resources
Southern Nevada Branch Office

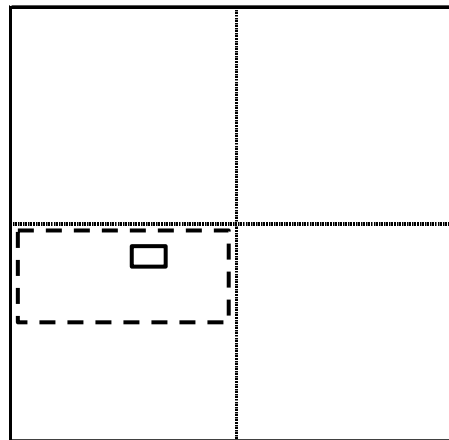
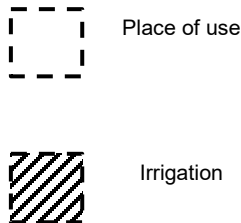
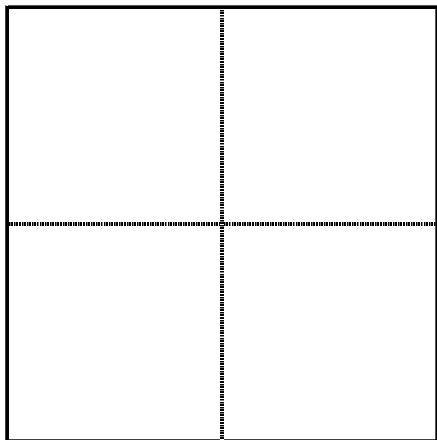
PUMPAGE INVENTORY FIELD REPORT

BASIN NO: <u> 163 </u>	PERMIT NO: <u> 26713 </u>
WELL: YES <u> X </u> NO <u> </u>	METER SER NO: <u> 9812750 </u>
PUMP: YES <u> X </u> NO <u> </u>	PUMP TYPE: <u> Submersible </u>
MOTOR: YES <u> </u> NO <u> X </u>	MOTOR TYPE: <u> </u>
METER: YES <u> X </u> NO <u> </u>	METER READ: <u> 06264300 </u>
PHOTO: YES <u> </u> NO <u> X </u>	ACRES IRR: <u> 0 </u>
BENEFICIAL USE: YES <u> </u> NO <u> X </u> PORTION <u> </u> ALL <u> </u> TYPE <u> </u>	

IF PARTIAL USE, SKETCH OF LAND IRRIGATED.

 1/4 1/4 SEC

 SW 1/4 **SW** 1/4 SEC **25**



REMARKS: _____

Domestic well serves 1 home on APN: 200-25-401-023

Permit 91769 (QM) serves 1 home & landscape on APN: 200-25-401-022

Well is inside "Spring House" shed. *Broken meter

SIGNATURE: *[Signature]*

DATE: **9/9/2022**

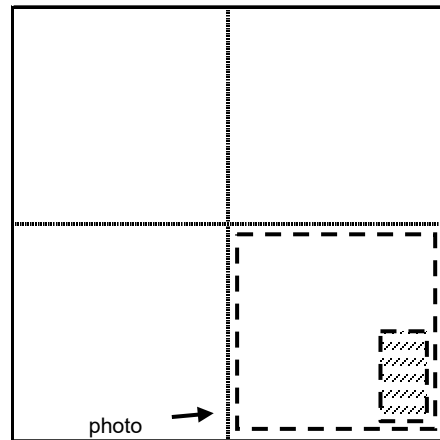
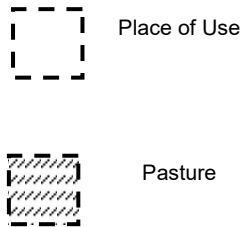
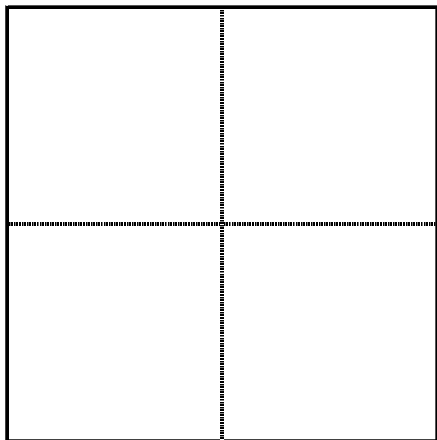
PUMPAGE INVENTORY FIELD REPORT

BASIN NO: 163 PERMIT NO: 45515 & 50656
 WELL: YES NO METER SER NO: 873082-06
 PUMP: YES NO PUMP TYPE: _____
 MOTOR: YES NO MOTOR TYPE: Turbine
 METER: YES NO METER READ: 003076000
 PHOTO: YES NO ACRES IRR: 1.15
 BENEFICIAL USE: YES NO PORTION ALL TYPE Irrigation

IF PARTIAL USE, SKETCH OF LAND IRRIGATED.

 1/4 1/4 SEC

SW 1/4 SW 1/4 SEC 25



REMARKS: * Meter repaired in 2022

20 +/- Cattle and Horses = 0.50 af

Use NIWR for Low Managed Pasture, Sprinklers = 1.15 ac*3.6/0.75 = 5.52 af

2022 pumpage = 6.02 af

SIGNATURE:  DATE: 9/9/2022