

# INDIAN WELLS VALLEY GROUNDWATER AUTHORITY

Ridgecrest City Hall 100 W California Ave., Ridgecrest, CA 93555 760-499-5002

## BOARD OF DIRECTORS

### A G E N D A

Thursday, August 20, 2020

**Closed Session 10:00 a.m.**

**Open Session 11:00 a.m.**

Adjourned in part to  
10:00 am Friday, August 21, 2020

**NOTICE:** *In accordance with the evolving public health declarations, we are temporarily limiting public attendance to virtual alternatives only. Please see the Public Comment Notice below for detailed instructions on submitting public comment as well as websites for livestream broadcasting. Telephonic participation by the majority of Board Members and staff is expected.*

**SPECIAL NOTICE ON COMMENTS FOR PUBLIC HEARING AGENDA ITEMS 10, 11, 17 and 18:** Given the nature of these agenda items, it is requested and highly recommended that those wishing to address the Board contact *April Nordenstrom* (at (760) 384-5511 or by email at [apriln@iwwvd.com](mailto:apriln@iwwvd.com)) and notify her of which items you wish to address and provide a written comment and/or a phone number that can be used to call you during comment portion of those agenda items. Normal call in procedures will also be used but by providing your written comment and/or number before the close of business the day before the individual item is heard you will greatly assist the efficiency of receiving and responding to comments for these items.

*In compliance with the Americans with Disabilities Act, if you are a disabled person and you need a disability-related modification or accommodation to participate in this meeting, please contact April Nordenstrom at (760) 384-5511. Requests must be made as early as possible and at least one full business day before the start of the meeting. Documents and material relating to an open session agenda items that are provided to the IWVGA Board of Directors prior to a regular meeting will be available for public inspection and copying at Indian Wells Valley Water District, 500 Ridgecrest Blvd, Ridgecrest, CA 93555, or online at <https://iwwvga.org/>.*

#### Statements from the Public

*The public will be allowed to address the Board during Public Comments about subjects within the jurisdiction of the IWVGA Board and that are NOT on the agenda. No action may be taken on off-agenda items unless authorized by law. Questions posed to the Board may be answered after the meeting or at future meeting. Dialog or extended discussion between the public and the Board or staff will be limited in accordance with the Brown Act. The Public Comments portion of the meeting shall be limited to three (3) minutes per speaker. Each person is limited to one comment during Public Comments.*

***Due to the length of the agenda, one or more recesses should be expected.***

1. CALL ORDER
2. PUBLIC COMMENT ON CLOSED SESSION
3. CLOSED SESSION

- CONFERENCE WITH LEGAL COUNSEL – ANTICIPATED LITIGATION  
(Government Code Section 54956.9(d)(4)) Number of cases: 3 or more: Based on existing facts and circumstances, the Board of Directors, on the advice of legal counsel, is meeting to decide whether, and when, to initiate litigation for failure to properly provide well registration and reporting.
- CONFERENCE WITH LEGAL COUNSEL – POTENTIAL LITIGATION  
(Government Code Section 54956.9(d)(2)(e)(1)) Number of cases: One (1) Significant exposure to litigation in the opinion of the Board of Directors on the advice of legal counsel, based on: Facts and circumstances that might result in litigation against the IWVGA but which are not yet known to a potential plaintiff or plaintiffs, which facts and circumstances need not be disclosed.

**4. OPEN SESSION - 11:00 a.m.**

- a. Report on Closed Session
- b. Pledge of Allegiance
- c. Roll Call

**5. PUBLIC COMMENTS**

This time is reserved for the public to address the Board about matters NOT on the agenda. No action will be taken on non-agenda items unless authorized by law. Comments are limited to three minutes per person.

**6. CONSENT AGENDA**

- a. Approve Minutes of Board Meeting July 16, 2020
- b. Approve Expenditures
  - i. \$212,778.67 – Stetson Engineers (June and July Invoice)
  - ii. \$18,543.75 – Capitol Core Group
  - iii. \$475.00 – Association of California Water Agencies

**7. AMENDMENT TO ADVANCED FUNDS AGREEMENT WITH INDIAN WELLS VALLEY WATER DISTRICT**

**8. BOARD CONSIDERATION AND ADOPTION OF PUMPING VERIFICATION REPORTS**

**9. BOARD CONSIDERATION AND POSSIBLE APPROVAL OF VARIANCE REQUESTS TO ORDINANCE NO. 01-20 BY MEADOWBROOK DAIRY AND QUIST FARMS**

**10. PUBLIC HEARING FOR FRANK BELLINO FOR FAILURE TO REGISTER, REPORT AND PAY GROUNDWATER EXTRACTION FEES (*see special notice on comments above*)**

**11. PUBLIC HEARING FOR PEARSONVILLE PARK FOR FAILURE TO REPORT AND PAY GROUNDWATER EXTRACTION FEES (*see special notice on comments above*)**

**12. WATER RESOURCES MANAGER REPORT**

- a. Report on Proposition 1 Grant Status
- b. Proposition 68 Grant Status Update
- c. TDS Sampling and Testing Results
- d. Isotopes Sampling and Testing Results

- e. Schedule

### 13. GENERAL MANAGER'S REPORT

- a. Monthly Financial Report
- b. Report on IWVGA's Water Marketer (Capitol Core Group)
- c. Severely Disadvantaged Communities (SDAC) Programs Update
- d. General Manager Recruitment
- e. Delinquent Accounts
- f. Meter Ordinance Compliance (Ordinance 01-20)
- g. Well Registration Update

### 14. CLOSING COMMENTS

This time is reserved for comments by Board members and/or staff and to identify matters for future Board business.

### 15. ADJOURN MEETING TILL 10:00 a.m. FRIDAY, AUGUST 21, 2020

### FRIDAY, AUGUST 21, 2020 10:00 a.m.

### 16. OPEN SESSION – 10:00 a.m.

- a. Pledge of Allegiance
- b. Roll Call

### 17. PUBLIC HEARING AND PROCEEDING ON AND BOARD'S CONSIDERATION AND POSSIBLE APPROVAL OF ORDINANCE 03-20 ESTABLISHING A BASIN REPLENISHMENT FEE AND ADOPTION OF RELATED CEQA FINDINGS (*see special notice on comments above*)

### 18. PUBLIC HEARING AND BOARD CONSIDERATION AND ADOPTION OF RESOLUTION 05-20 REGARDING A TRANSIENT POOL AND FALLOWING PROGRAM AND ADOPTION OF RELATED CEQA FINDINGS (*see special notice on comments above*)

### 19. DATE AND TIME OF NEXT MEETING – September 17, 2020

### 20. ADJOURN

### PUBLIC COMMENT NOTICE

On March 17, 2020, Governor Newsom issued Executive Order N-29-20, relating to the convening of public meetings in light of the COVID-19 pandemic. At this time, the Indian Wells Valley Groundwater Authority is continuing to hold board meetings in order to conduct essential business. However, as suggested by the Center for Disease Control and set forth in the Executive Order, we are temporarily limiting public attendance through the following virtual alternatives:

- **Watch meetings on-line:**

All of our meetings are streamed live at <https://ridgecrest-ca.gov/369/Watch> (4 second streaming delay) or on YouTube at <https://www.youtube.com/cityofridgecrest/live> (22 second streaming delay) and are also available for playback after the meeting.

- **Call in for public comments:**

If you wish to make verbal comment, ***please call (760) 499-5010***. This phone line will allow only one caller at a time, so if the line is busy, please continue to dial. We will be allowing a 20-30 second pause between callers to give time for media delays and callers to dial in. Due to media delays, please mute your streaming device while making public comment. If you wish to comment on multiple items, you will need to call in as each item is presented.

\*Please Note – This process will be a learning curve for all, *please be patient*.

- **Submit written comments:**

We encourage submittal of written comments supporting, opposing, or otherwise commenting on an agenda item, for distribution to the Board prior to the meeting. Send emails to apriln@iwvwd.com written correspondence may be sent to April Nordenstrom, Clerk of the Board, 500 W. Ridgecrest Blvd., **Ridgecrest, CA 93555**. Please specify to which agenda item your comment relates.

- **Large Groups:**

If you are part of a large group that would like to comment on an agenda item, please consider commenting in writing. This will be as impactful to the Board as having a large group in attendance.

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# INDIAN WELLS VALLEY GROUNDWATER AUTHORITY

City of Ridgecrest, Indian Wells Valley Water District, Inyo County, Kern County, San Bernardino County

## BOARD OF DIRECTORS MEETING MINUTES

Thursday, July 16, 2020; 10:00 a.m.

### IWVGA Members Present:

Chairman Mick Gleason, Kern County	Don Zdeba, IWVGA General Manager
John Vallejo, Inyo County	Phillip Hall, Legal Counsel
Ron Kicinski, IWVWD	Steve Johnson, Stetson Engineers
Scott Hayman, City of Ridgecrest	Commander Peter Benson, US Navy, DoD Liaison
Thomas Bickauskas, Bureau of Land Management	Lauren Duffy, Acting Clerk of the Board
Bob Page, San Bernardino County	

Attending via teleconference is Bob Page, John Vallejo, Steve Johnson, Commander Peter Benson, and April Nordenstrom, Clerk of the Board.

Meeting recording and public comment letters submitted are made available at:

<https://iwvga.org/iwvga-meetings/>

### 1. CALL TO ORDER:

The meeting is called to order by Chairman Gleason at 10:00 a.m.

### 2. PUBLIC COMMENT ON CLOSED SESSION:

None.

Chairman Gleason calls the meeting into Closed Session at 10:02 a.m.

### 3. CLOSED SESSION:

- CONFERENCE WITH LEGAL COUNSEL – ANTICIPATED LITIGATION (Government Code Section 54956.9(d)(4)) Number of cases: 3 or more: Based on existing facts and circumstances, the Board of Directors, on the advice of legal counsel, is meeting to decide whether, and when, to initiate litigation for failure to properly provide well registration and reporting.
- CONFERENCE WITH LEGAL COUNSEL - POTENTIAL LITIGATION (Government Code Section 54956.9(d)(2)(e)(1)) Number of cases: One (1) Significant exposure to litigation in the opinion of the Board of Directors on the advice of legal counsel, based on: Facts and circumstances that might result in litigation against the IWVGA but which are not yet known to a potential plaintiff or plaintiffs, which facts and circumstances need not be disclosed.

Closed Session adjourned at 10:55 a.m.

### 4. OPEN SESSION:

Meeting was reconvened into open session at 11:00 a.m.

- a. Report on Closed Session:  
Counsel Hall reports that no action was taken which would require disclosure under the Brown Act.
- b. The Pledge of Allegiance is led by Lauren Duffy
- c. Lauren Duffy calls the following roll call:

Director Vallejo	Present
Director Kicinski	Present
Chairman Gleason	Present

Director Page	Present
Vice Chair Hayman	Present

**5. NOTICE OF ITEMS CONTINUED UNTIL AUGUST 20, 2020 MEETING**

Counsel Hall briefly updates on June agenda items that were tabled until the August meeting.

**6. PUBLIC COMMENT:**

The Board hears public comments from Judie Decker, Derek Hoffman, Renee Westa-Lusk and Mike Neel.

**7. CONSENT AGENDA:**

- a. Approve Minutes of Board Meeting June 18, 2020
- b. Approve Expenditures
  - i. \$4,647.50 - RWG Law
  - ii. \$8,912.50 - Capitol Core Group (CCG)

Don Zdeba states the CCG invoice was paid by the Water District and will be applied as a credit towards future fees.

Motion made by Ron Kicinski and seconded by Scott Hayman to approve Minutes of Board Meeting June 18, 2020 and the following expenditures in the amount of \$4,647.50 to RWG Law and \$8,912.50 to Capitol Core Group.

Motion unanimously carries by the following roll call vote:

Director Vallejo	Aye
Director Kicinski	Aye
Chairman Gleason	Aye
Vice Chair Hayman	Aye
Director Page	Aye

**8. BOARD CONSIDERATION AND APPROVAL OF DATA PACKAGE ON AN INCREASE IN THE CURRENT GROUNDWATER EXTRACTION FEE AND ADOPTION OF CEQA FINDINGS AND ORDINANCE 02-20:**

Jim Worth provides a staff report for Ordinance 02-20 and supporting Data Package amending Ordinance 02-18 (documents made available on the IWVGA website).

The Board hears public comment from Richard Wagner, Renee Westa-Lusk, Derek Hoffman, Mike Neel, Elisabeth Esposito, Joshua Nugent, Judie Decker, and Don Decker.

Motion made by Ron Kicinski and seconded by Scott Hayman to; 1) Adopt Ordinance 02-20 amending the current Groundwater Extraction Fee and 2) Make a finding that the proposed Ordinance is exempt from further environmental review pursuant to California Environmental Quality Act (CEQA) Guidelines.

Motion carries by the following roll call vote.

Director Vallejo	Aye
Director Kicinski	Aye
Chairman Gleason	Aye
Vice Chair Hayman	Aye
Director Page	Aye

**9. BOARD CONSIDERATION AND ADOPTION OF RESOLUTION 06-20 AND RELATED CEQA FINDINGS ADOPTING THE REPORT ON THE INDIAN WELLS VALLEY GROUNDWATER BASIN'S SUSTAINABLE YIELD OF 7,650 ACRE-FEET:**

Counsel Hall provides a staff report for Resolution 06-20 (documents made available on the IWVGA website).

The Board hears public comment from Derek Hoffman and Renee Westa-Lusk.

Motion made by Bob page and seconded by John Vallejo to 1) Adopt Report on the Indian Wells Valley Groundwater Basin’s Sustainable Yield of 7,650 Acre-Feet via Resolution 06-20 and 2) Make a finding that the action is exempt from further CEQA review because the action is ministerial, does not include a discretionary act, is mandated by law and is provided statutorily and categorical exemptions, and will not have a significant effect on the environment.

Motion carries by the following roll call vote.

Director Vallejo	Aye
Director Kicinski	Aye
Chairman Gleason	Aye
Vice Chair Hayman	Aye
Director Page	Aye

Chairman Gleason calls for a recess at 12:48 p.m.

Meeting is reconvened at 1:15 p.m.

**10. BOARD CONSIDERATION AND SETTING A PUBLIC HEARING FOR FRANK BELLINO FOR FAILURE TO REGISTER, REPORT AND PAY GROUNDWATER EXTRACTION FEES:**

Don Zdeba provides a staff report (document made available on the IWVGA website).

The Board hears public comment from Mike Neel.

Motion made by Bob Page and seconded by Scott Hayman to set a Public Hearing for August 20, 2020 for Frank Bellino for failure to register, report and pay groundwater extraction fees set forth in Ordinance 02-18.

Motion unanimously carries by the following roll call vote:

Director Vallejo	Aye
Director Kicinski	Aye
Chairman Gleason	Aye
Vice Chair Hayman	Aye
Director Page	Aye

**11. BOARD CONSIDERATION AND SETTING A PUBLIC HEARING FOR PEARSONVILLE PARK FOR FAILURE TO REPORT AND PAY GROUNDWATER EXTRACTION FEES:**

Don Zdeba provides a staff report (document made available on the IWVGA website).

The Board hears public comment from Renee Westa-Lusk and Mike Neel

Motion made by Bob Page and seconded by Scott Hayman to set a Public Hearing for August 20, 2020 for Pearsonville Park for failure to report and pay groundwater extraction fees set forth in Ordinance 02-18.

Motion unanimously carries by the following roll call vote:

Director Vallejo	Aye
Director Kicinski	Aye
Chairman Gleason	Aye
Vice Chair Hayman	Aye
Director Page	Aye

**12. WATER RESOURCES MANAGER REPORT:**

Steve Johnson provides updates on the following grants/programs: Prop 1 Grant Status, Prop 68 Grant Status, Groundwater Pumping Verification Reports and Schedule (presentations made available on the IWVGA website).



Board and staff further discuss the grants/programs (video recording made available on the IWVGA website). The Board hears public comment from Renee Westa-Lusk.

**13. GENERAL MANAGER'S REPORT:**

Don Zdeba provides updates on the following; Monthly Financial Report, Report on IWVGA's Water Marketer (Capitol Core Group), Severely Disadvantaged Communities (SDAC) Program, General Manager Recruitment, Delinquent Accounts, and Well Registration Update (documents made available on the IWVGA website).

**14. CLOSING COMMENTS :**

Commander Benson states the Navy will continue to be a committed partner to all involved with bringing this Basin into sustainability (full statement made available on the IWVGA website).

Director Vallejo wishes Steve Johnson well and states he is happy to hear he is on the mend.

Director Kicinski shares comments he has heard from the public about the cost of water causing people to leave the valley; as well as having no water will also cause residents to leave the valley. Kicinski encourages the public to participate and study the documents involved in the upcoming Public Hearing. Kicinski closes with wishing Steve Johnson well.

Director Hayman states he is glad to hear Steve Johnson is doing well.

Chairman Gleason asserts he took Chair this year and planned out objectives he would like to achieve. Gleason stresses the need to identify a partner for imported water. Without said partner, the GA does not have a shovel ready project and would not qualify for grant funding. Gleason acknowledges the high cost of imported water but emphasizes its importance.

**15. DATE AND TIME OF NEXT MEETING – August 20, 2020; 10:00 a.m.**

**16. ADJOURN:**

Chairman Gleason adjourned the meeting at 1:56 p.m.

Respectfully submitted,

*April Nordenstrom*

Clerk of the Board  
Indian Wells Valley Groundwater Authority

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**Invoice**

County of Kern  
 County Administrative Office  
 1115 Truxton Ave., 5th Floor  
 Bakersfield, CA 93301  
 Attn.: Mr. Alan Christensen

**Invoice Number: 2652-35**  
**Invoice Date: 07/20/20**

Project #: 2652      **Indian Wells Valley Groundwater Authority**

Professional Services through 6/30/2020

**Water Resources Management**

**01 - POAM No. 134 Prep & Attend Board, PAC & TAC Mtgs/Consult w/ Authority & Co**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	21.50	\$230.00	\$4,945.00
Supervisor I	4.75	\$200.00	\$950.00
Associate III	8.25	\$105.00	\$866.25
<i>Professional Services Subtotal:</i>			<u>\$6,761.25</u>
			<u>Charge</u>
Reimbursables			\$97.90
Reproduction (Color)			\$3.45
Reproduction			\$210.82
Telephone - Conference Call			\$312.17
<i>Reimbursables Subtotal:</i>			<u>\$312.17</u>
			<u>\$7,073.42</u>

*'OAM No. 134 Prep & Attend Board, PAC & TAC Mtgs/Consult w/ Authority & Com*      \$7,073.42

**02.01 - POAM No. 15,16 Prop 1 Grant Administration**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	17.00	\$230.00	\$3,910.00
Supervisor I	2.25	\$200.00	\$450.00
Senior I	1.50	\$160.00	\$240.00
Associate III	4.00	\$105.00	\$420.00
Administrative II	22.75	\$65.00	\$1,478.75
<i>Professional Services Subtotal:</i>			<u>\$6,498.75</u>
<i>POAM No. 15,16 Prop 1 Grant Administration Subtotal:</i>			<u>\$6,498.75</u>

**04.02 - POAM No. 20 Data Management System**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	6.50	\$230.00	\$1,495.00
Supervisor I	1.50	\$200.00	\$300.00
Associate I	58.25	\$115.00	\$6,698.75
GIS Manager	5.25	\$115.00	\$603.75
Assistant I	29.50	\$95.00	\$2,802.50
GIS Specialist I	1.25	\$95.00	\$118.75
<i>Professional Services Subtotal:</i>			<u>\$12,018.75</u>
			<u>Charge</u>
Reimbursables			\$28.65
Meals			\$28.65
<i>Reimbursables Subtotal:</i>			<u>\$28.65</u>
<i>POAM No. 20 Data Management System Subtotal:</i>			<u>\$12,047.40</u>



**05 - POAM No. 126 Project Management Costs & Schedule**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	2.50	\$230.00	\$575.00
Supervisor I	4.50	\$200.00	\$900.00
Associate I	2.00	\$115.00	\$230.00
Associate III	24.00	\$105.00	\$2,520.00
Assistant I	2.25	\$95.00	\$213.75
			<i>Professional Services Subtotal:</i>

*POAM No. 126 Project Management Costs & Schedule Subtotal:* \$4,438.75

**07.01 - Imported Water RFP**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	1.50	\$230.00	\$345.00
			<i>Professional Services Subtotal:</i>
			<i>Imported Water RFP Subtotal:</i> <u>\$345.00</u>

**08.05 - POAM No. 100 Projects and Management Actions**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	2.50	\$230.00	\$575.00
Supervisor I	2.50	\$200.00	\$500.00
			<i>Professional Services Subtotal:</i>

*POAM No. 100 Projects and Management Actions Subtotal:* \$1,075.00

**11.01 - POAM No. 56 Monitoring Wells - Planning**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Associate I	0.50	\$115.00	\$57.50
Assistant I	0.25	\$95.00	\$23.75
			<i>Professional Services Subtotal:</i>

*POAM No. 56 Monitoring Wells - Planning Subtotal:* \$81.25

**11.02 - POAM No. 56 Monitoring Wells - Implementation**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Supervisor I	19.50	\$200.00	\$3,900.00
Associate I	0.75	\$115.00	\$86.25
Assistant I	14.00	\$95.00	\$1,330.00
			<i>Professional Services Subtotal:</i>

<b>Reimbursables</b>	<u>Charge</u>
Equipment Purchase	\$984.61
	<i>Reimbursables Subtotal:</i>

*POAM No. 56 Monitoring Wells - Implementation Subtotal:* \$6,300.86

**11.04 - POAM No. 64 Stream Gages - Implementation**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	6.50	\$230.00	\$1,495.00
Supervisor I	1.25	\$200.00	\$250.00
Associate I	13.00	\$115.00	\$1,495.00
Assistant I	4.00	\$95.00	\$380.00
			<i>Professional Services Subtotal:</i>

<b>Reimbursables</b>	<u>Charge</u>
Equipment Purchase	\$25,147.03
Meals	\$22.39



**11.04 - POAM No. 64 Stream Gages - Implementation**

*Reimbursables Subtotal:* \$25,169.42

*POAM No. 64 Stream Gages - Implementation Subtotal:* \$28,789.42

**11.05 - POAM No. 78 Aquifer Tests**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Supervisor I	23.50	\$200.00	\$4,700.00
Supervisor II	4.00	\$185.00	\$740.00
GIS Manager	0.50	\$115.00	\$57.50
Associate III	5.50	\$105.00	\$577.50
Assistant I	8.00	\$95.00	\$760.00
			<u>Professional Services Subtotal:</u> \$6,835.00
			<u>POAM No. 78 Aquifer Tests Subtotal:</u> \$6,835.00

**11.06 - POAM No. 74 Water Quality & Stable Isotope Sampling**

<b>Sub-Contractors</b>	<u>Charge</u>
Board of Regents	\$1,903.17
	<u>Sub-Contractors Subtotal:</u> \$1,903.17
	<u>POAM No. 74 Water Quality &amp; Stable Isotope Sampling Subtotal:</u> \$1,903.17

**11.08 - POAM No. 69 Weather Stations - Implementation**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	2.50	\$230.00	\$575.00
Supervisor I	2.00	\$200.00	\$400.00
Associate I	7.25	\$115.00	\$833.75
Administrative II	4.75	\$65.00	\$308.75
			<u>Professional Services Subtotal:</u> \$2,117.50
			<u>POAM No. 69 Weather Stations - Implementation Subtotal:</u> \$2,117.50

**12 - POAM No. 119 SDAC Projects; Water Conservation & Rebate Program**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Associate III	8.25	\$105.00	\$866.25
			<u>Professional Services Subtotal:</u> \$866.25
			<u>POAM No. 119 SDAC Projects; Water Conservation &amp; Rebate Program Subtotal:</u> \$866.25

**13 - POAM No. 120 SDAC Projects: Water Audit, Leak Detection & Leak Rpr Program**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Supervisor I	0.75	\$200.00	\$150.00
Associate III	8.25	\$105.00	\$866.25
			<u>Professional Services Subtotal:</u> \$1,016.25
			<u>POAM No. 120 SDAC Projects: Water Audit, Leak Detection &amp; Leak Rpr Program S</u> \$1,016.25

**15 - TSS Program**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	1.00	\$230.00	\$230.00
Associate I	0.75	\$115.00	\$86.25
GIS Manager	0.50	\$115.00	\$57.50
			<u>Professional Services Subtotal:</u> \$373.75
			<u>TSS Program Subtotal:</u> \$373.75

**16 - Brackish Water Study Coordination**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
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**16 - Brackish Water Study Coordination**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	3.50	\$230.00	\$805.00
Supervisor I	3.00	\$200.00	\$600.00
Associate III	1.50	\$105.00	\$157.50
<i>Professional Services Subtotal:</i>			<u>\$1,562.50</u>
<i>Brackish Water Study Coordination Subtotal:</i>			<u>\$1,562.50</u>

**17 - Navy-COSO**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	1.50	\$230.00	\$345.00
<i>Professional Services Subtotal:</i>			<u>\$345.00</u>
<i>Navy-COSO Subtotal:</i>			<u>\$345.00</u>

**18 - WellIntel Coordination**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Associate I	5.25	\$115.00	\$603.75
<i>Professional Services Subtotal:</i>			<u>\$603.75</u>
<i>WellIntel Coordination Subtotal:</i>			<u>\$603.75</u>

**21 - Prop. 218 Report Preparation**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	9.00	\$230.00	\$2,070.00
Supervisor I	11.25	\$200.00	\$2,250.00
Associate III	23.50	\$105.00	\$2,467.50
Senior Assistant	12.00	\$100.00	\$1,200.00
<i>Professional Services Subtotal:</i>			<u>\$7,987.50</u>
<i>Prop. 218 Report Preparation Subtotal:</i>			<u>\$7,987.50</u>

**22 - Prepare Meter Testing Specifications**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Supervisor I	5.00	\$200.00	\$1,000.00
Senior I	7.00	\$160.00	\$1,120.00
Associate I	0.75	\$115.00	\$86.25
<i>Professional Services Subtotal:</i>			<u>\$2,206.25</u>
<i>Prepare Meter Testing Specifications Subtotal:</i>			<u>\$2,206.25</u>

**23 - Pumping Verification**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	8.00	\$230.00	\$1,840.00
Supervisor I	5.75	\$200.00	\$1,150.00
Associate III	20.00	\$105.00	\$2,100.00
Senior Assistant	1.50	\$100.00	\$150.00
<i>Professional Services Subtotal:</i>			<u>\$5,240.00</u>
<b>Reimbursables</b>			<u>Charge</u>
Postage			\$49.50
<i>Reimbursables Subtotal:</i>			<u>\$49.50</u>
<i>Pumping Verification Subtotal:</i>			<u>\$5,289.50</u>

**24 - Sustainable Yield Allocation Report**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	1.50	\$230.00	\$345.00



**24 - Sustainable Yield Allocation Report**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Supervisor I	10.00	\$200.00	\$2,000.00
Associate III	2.50	\$105.00	\$262.50
			<u>Professional Services Subtotal:</u>
			\$2,607.50
			<u>Sustainable Yield Allocation Report Subtotal:</u>
			\$2,607.50

**26 - Allocation Process & Transient Pool Support**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	5.50	\$230.00	\$1,265.00
Supervisor I	1.25	\$200.00	\$250.00
Associate III	17.50	\$105.00	\$1,837.50
			<u>Professional Services Subtotal:</u>
			\$3,352.50
			<u>Allocation Process &amp; Transient Pool Support Subtotal:</u>
			\$3,352.50

**27 - 2020 Data Collection/Monitoring/Data Gaps**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Supervisor I	5.50	\$200.00	\$1,100.00
Assistant I	15.75	\$95.00	\$1,496.25
			<u>Professional Services Subtotal:</u>
			\$2,596.25
			<u>Reimbursables</u>
			<u>Charge</u>
Field Supplies			\$12.98
Meals			\$27.90
			<u>Reimbursables Subtotal:</u>
			\$40.88
			<u>2020 Data Collection/Monitoring/Data Gaps Subtotal:</u>
			\$2,637.13

**29 - 2020 Grant Review/Application**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Associate III	1.00	\$105.00	\$105.00
			<u>Professional Services Subtotal:</u>
			\$105.00
			<u>2020 Grant Review/Application Subtotal:</u>
			\$105.00

**30 - 2020 General Engineering**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Associate III	1.25	\$105.00	\$131.25
			<u>Professional Services Subtotal:</u>
			\$131.25
			<u>2020 General Engineering Subtotal:</u>
			\$131.25

**31 - Develop Rules and Regulations**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	5.00	\$230.00	\$1,150.00
Supervisor I	2.00	\$200.00	\$400.00
Associate III	10.00	\$105.00	\$1,050.00
			<u>Professional Services Subtotal:</u>
			\$2,600.00
			<u>Develop Rules and Regulations Subtotal:</u>
			\$2,600.00

**32 - Review of Ramboll Report**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Supervisor I	1.00	\$200.00	\$200.00
			<u>Professional Services Subtotal:</u>
			\$200.00
			<u>Review of Ramboll Report Subtotal:</u>
			\$200.00



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**33 - Storage Calculation**

**Professional Services**

Supervisor I

	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
	1.00	\$200.00	\$200.00
<i>Professional Services Subtotal:</i>			<u>\$200.00</u>
<i>Storage Calculation Subtotal:</i>			<u>\$200.00</u>
<b><i>Water Resources Management Subtotal:</i></b>			<b><u>\$109,589.65</u></b>
<b>*** Invoice Total ***</b>			<b><u>\$109,589.65</u></b>





**REIMBURSABLE SUMMARY**

County of Kern  
 County Administrative Office  
 1115 Truxtun Ave., 5th Floor  
 Bakersfield CA 93301  
 ATTN.: Mr. Alan Christensen

**Invoice Number: 2652-35**  
**Invoice Date: 07/20/20**

Project #: 2652 **Indian Wells Valley Groundwater Authority**  
 Manager: Stephen Johnson  
 Professional Services through 06/30/2020

**Water Resources Management**

**01 - POAM No. 134 Prep & Attend Board,PAC & TAC Mtgs/Consult w/ Authority & Committees to Dev GSP**

**Reimbursables**

Description	Date	Units	Unit Rate	Charge	Notes
Telephone - Conference Call	06/02/2020	1.00	\$72.37	\$72.37	
Telephone - Conference Call	06/04/2020	1.00	\$30.70	\$30.70	
Telephone - Conference Call	06/05/2020	1.00	\$39.73	\$39.73	
Telephone - Conference Call	06/24/2020	1.00	\$25.42	\$25.42	
Telephone - Conference Call	06/24/2020	1.00	\$42.60	\$42.60	
Reproduction	06/30/2020	18.00	\$0.15	\$2.70	
Reproduction	06/30/2020	5.00	\$0.15	\$0.75	
Reproduction (Color)	06/30/2020	82.00	\$0.89	\$72.98	
Reproduction (Color)	06/30/2020	28.00	\$0.89	\$24.92	
POAM No. 134 Prep & Attend Board,PAC & TAC Mtgs/Consult w/ Auth				\$312.17	

**04.02 - POAM No. 20 Data Management System**

**Reimbursables**

Description	Date	Units	Unit Rate	Charge	Notes
Meals	06/27/2020	1.00	\$28.65	\$28.65	
POAM No. 20 Data Management System Sub-Total:				\$28.65	

**11.02 - POAM No. 56 Monitoring Wells - Implementation**

**Reimbursables**

Description	Date	Units	Unit Rate	Charge	Notes
Equipment Purchase	06/22/2020	1.00	\$984.61	\$984.61	
POAM No. 56 Monitoring Wells - Implementation Sub-Total:				\$984.61	

**11.04 - POAM No. 64 Stream Gages - Implementation**

**Reimbursables**

Description	Date	Units	Unit Rate	Charge	Notes
Equipment Purchase	06/17/2020	1.00	\$2,900.58	\$2,900.58	
Equipment Purchase	06/26/2020	1.00	\$17,047.14	\$17,047.14	
Equipment Purchase	06/30/2020	1.00	\$5,199.31	\$5,199.31	
Meals	06/30/2020	1.00	\$12.66	\$12.66	
Meals	06/30/2020	1.00	\$9.73	\$9.73	
POAM No. 64 Stream Gages - Implementation Sub-Total:				\$25,169.42	

**11.06 - POAM No. 74 Water Quality & Stable Isotope Sampling**

**Sub-Contractors**

Description	Date	Units	Unit Rate	Charge	Notes
Board of Regents	05/31/2020	1.00	\$1,903.17	\$1,903.17	
POAM No. 74 Water Quality & Stable Isotope Sampling Sub-Total:				\$1,903.17	



2171 E. Francisco Blvd., Suite K • San Rafael, California 94901  
 Phone: (415) 457-0701 • FAX: (415) 457-1638 • Website: www.stetsonengineers.com

Northern California • Southern California • Arizona • Colorado • Oregon

**REIMBURSABLE SUMMARY**

County of Kern  
 County Administrative Office  
 1115 Truxtun Ave., 5th Floor  
 Bakersfield CA 93301  
 ATTN.: Mr. Alan Christensen

**Invoice Number: 2652-35**  
**Invoice Date: 07/20/20**

Project #: 2652 **Indian Wells Valley Groundwater Authority**  
 Manager: Stephen Johnson  
 Professional Services through 06/30/2020

**23 - Pumping Verification**

**Reimbursables**

<u>Description</u>	<u>Date</u>	<u>Units</u>	<u>Unit Rate</u>	<u>Charge</u>	<u>Notes</u>
Postage	06/30/2020	1.00	\$49.50	\$49.50	
Pumping Verification Sub-Total:				\$49.50	

**27 - 2020 Data Collection/Monitoring/Data Gaps**

**Reimbursables**

<u>Description</u>	<u>Date</u>	<u>Units</u>	<u>Unit Rate</u>	<u>Charge</u>	<u>Notes</u>
Field Supplies	06/26/2020	1.00	\$12.98	\$12.98	
Meals	06/29/2020	1.00	\$7.88	\$7.88	
Meals	06/29/2020	1.00	\$7.33	\$7.33	
Meals	06/29/2020	1.00	\$5.85	\$5.85	
Meals	06/29/2020	1.00	\$6.84	\$6.84	
2020 Data Collection/Monitoring/Data Gaps Sub-Total:				\$40.88	

Invoice for Stetson Engineers Inc. Isotopic Support

INVOICE TO

**Stetson Engineers Inc**  
**Attn: Accounts Payable**  
**2171 East Francisco Blvd. Suite K**  
**San Rafael, CA 94901**

INVOICE NUMBER: CI-06-3774 / 09 ✓  
 DATE: 06/23/20  
 AMOUNT: \$1,903.17 ✓  
 TERMS: Due Upon Receipt

Contract/Grant/Agreement/Purchase Order	Period Billed	
<b>Stetson Engineers Inc. Contract # 2652 - 001</b> ✓	From	To
<b>Contract Dated 5/24/19</b>	5/1/2020	5/31/2020
Title: Stetson Engineers Inc, / Isotopic Support - Indian Wells Valley Groundwater Authority		
P.I.: Chapman, Jenny		
DRI Acct: AWD-06-00000523 / GR09067 RC0068 TAX ID #: 886000024		
Cost Elements/Services	Current	Cumulative

Stetson Engineers, Inc. - Isotopic Support - Indian Wells Valley Groundwater Authority ✓

Salaries	1,903.17	27,589.99
Travel	0.00	0.00
Operating	0.00	0.00
<b>Totals</b>	<u>1,903.17</u>	<u>27,589.99</u>

**Total Amount Due This Invoice** 1,903.17 ✓

Budget Amount 117,956.00  
 Invoiced to Date 27,589.99  
 Budget Balance **90,366.01**

"I certify to the best of my ability that all expenditures reported are for appropriate purposes and in accordance with the provisions of the award documentation."

*Sheril Schmidt* \_\_\_\_\_ Date 06/23/20

Sheril Schmidt, Sponsored Research Specialist

(775) 673-7404

Make Check Payable To: Board of Regents      Mail Check To: Desert Research Institute  
 Financial Services Office  
 2215 Raggio Parkway  
 Reno, Nevada 89512-1095

\* Please return Invoice Copy with Check \*



May-20

Stetson Engineers - Isotopic Support - IWVGA

2652 - 001

Awd-06-523 / GR09067

<b>Position</b>	<b>Worker</b>	<b>Rate</b>	<b>Hours</b>	<b>Cost</b>
Groundwater Modeler-SME	Karl Pohlmann	230.78	0.000000	0.00
Hydrogeologist-SME	Jenny Chapman	258.45	7.363784	1,903.17
Hourly Data Analyst	Austin Chapman	29.46	0.000000	0.00
Geochemist-SME	Jim Thomas	193.52	0.000000	0.00
Geochemist	Ron Hershey	184.51	0.000000	0.00
GIS Professional	Cheryl Collins	98.95	0.000000	0.00

**Total Salaries & Fringe**

**1,903.17**



221 East Lincoln Ave., Fort Collins, Colorado 80524  
 Tel 1.970.498.1500 / Fax: 1.970.498.1598 / www.in-situ.com  
 Fed ID: 83-0245889 GSA: GS-24F-00-45M

# Invoice

Number: 00135299

Date: 6/26/2020

Page 1 of 2

**Bill To:**

STETSON ENGINEERS CA  
 2171 EAST FRANCISCO BLVD  
 SUITE K  
 SAN RAFAEL, CA 94901  
 United States

**Ship To:**

STETSON ENGINEERS CA  
 2171 EAST FRANCISCO BLVD  
 SUITE K  
 SAN RAFAEL, CA 94901  
 United States

<b>Customer PO Number</b>		<b>Terms</b>		<b>Ship Via</b>		<b>Final Destination</b>	
1226		NET 30 DAYS		FEDEX SO		CALIFORNIA	
<b>Ordered By</b>		<b>Sales Representative</b>		<b>Order Date</b>		<b>Our Order No</b>	
Joel Barnard		JEREMY SHEPHERD		6/16/2020		20121777	
						<b>Customer ID</b>	
						008388	

LIN	DL	Order Qty	Shipped Qty	Part Number	Description / Comments	Unit	Unit Price	Extended Price
01	01	11.00	5.00	0099260	LEVEL TROLL 400, 300PSIA S/N: 748293 S/N: 748309 S/N: 748318 S/N: 748322 S/N: 748323	EA	795.00	\$ 3,975.00
02	01	1.00	1.00	0052000	Rugged Twist-Lock Cable FT NON-VENTED POLY CABLE Qty: " 175.00 SM PLASTIC SPOOL 100-350' RUGGED 485/232 NON-VENTED	EA	685.00	\$ 685.00
03	01	2.00	2.00	0052000	Rugged Twist-Lock Cable FT NON-VENTED POLY CABLE Qty: " 200.00 SM PLASTIC SPOOL 100-350' RUGGED 485/232 NON-VENTED S/N: 749186	EA	760.00	\$ 1,520.00
04	01	4.00	4.00	0052000	Rugged Twist-Lock Cable FT NON-VENTED POLY CABLE Qty: " 250.00 SM PLASTIC SPOOL 100-350' RUGGED 485/232 NON-VENTED S/N: 749178 S/N: 749187	EA	910.00	\$ 3,640.00
05	01	1.00	1.00	0052000	Rugged Twist-Lock Cable FT NON-VENTED POLY CABLE Qty: " 290.00 SM PLASTIC SPOOL 100-350' RUGGED 485/232 NON-VENTED S/N: 749188 S/N: 749190 S/N: 749192 S/N: 749193	EA	1030.00	\$ 1,030.00
06	01	1.00	1.00	0052000	Rugged Twist-Lock Cable S/N: 749194	EA	1120.00	\$ 1,120.00



221 East Lincoln Ave., Fort Collins, Colorado 80524  
 Tel 1.970.498.1500 / Fax: 1.970.498.1598 / www.in-situ.com  
 Fed ID: 83-0245889 GSA: GS-24F-00-45M

**Invoice**  
**Number: 00135299**  
**Date: 6/26/2020**  
 Page 2 of 2

**Bill To:** STETSON ENGINEERS CA  
 2171 EAST FRANCISCO BLVD  
 SUITE K  
 SAN RAFAEL, CA 94901  
 United States

**Ship To:** STETSON ENGINEERS CA  
 2171 EAST FRANCISCO BLVD  
 SUITE K  
 SAN RAFAEL, CA 94901  
 United States

<b>Customer PO Number</b>		<b>Terms</b>		<b>Ship Via</b>		<b>Final Destination</b>	
1226		NET 30 DAYS		FEDEX SO		CALIFORNIA	
<b>Ordered By</b>		<b>Sales Representative</b>		<b>Order Date</b>		<b>Our Order No</b>	
Joel Barnard		JEREMY SHEPHERD		6/16/2020		20121777	
						<b>Customer ID</b>	
						008388	

LIN	DL	Order Qty	Shipped Qty	Part Number	Description / Comments	Unit	Unit Price	Extended Price
07	01	1.00	1.00	0052000	FT NON-VENTED POLY CABLE Qty: " 320.00 SM PLASTIC SPOOL 100-350' RUGGED 485/232 NON-VENTED S/N: 749195 Rugged Twist-Lock Cable	EA	1365.00	\$ 1,365.00
08	01	1.00	1.00	0052000	FT NON-VENTED POLY CABLE Qty: " 400.00 LG PLASTIC SPOOL 300-550' RUGGED 485/232 NON-VENTED S/N: 749206 Rugged Twist-Lock Cable	EA	1530.00	\$ 1,530.00
09	01	9.00	9.00	WELL DOCK 2"	2" Well Dock	EA	25.00	\$ 225.00
10	01	2.00	2.00	WELL DOCK 4"	4" Well Dock	EA	55.00	\$ 110.00
11	01	2.00	2.00	WELL DOCK 6"	6" Well Dock	EA	65.00	\$ 130.00
9 Percent						1379.70		
.00026 Percent						0.04		

Contact for Invoice Questions: Accounts Receivable at 1-800-446-7488

Line Item Totals	Discount	Sub Total	S / H	Taxable Amount	Tax	Misc	Invoice Total
15,330.00	0.00	15,330.00	337.40	15,330.00	1,379.74	0.00	\$ 17,047.14

Amount in USD



221 East Lincoln Ave., Fort Collins, Colorado 80524  
 Tel: 1.970.498.1500 / Fax: 1.970.498.1598 / www.in-situ.com  
 Fed ID: 83-0245889 GSA: GS-24F-00-45M

**Invoice**  
**Number: 00135355**  
**Date: 6/30/2020**  
 Page 1 of 1

**Bill To:** STETSON ENGINEERS CA  
 2171 EAST FRANCISCO BLVD  
 SUITE K  
 SAN RAFAEL, CA 94901  
 United States

**Ship To:** STETSON ENGINEERS CA  
 2171 EAST FRANCISCO BLVD  
 SUITE K  
 SAN RAFAEL, CA 94901  
 United States

<b>Customer PO Number</b>		<b>Terms</b>		<b>Ship Via</b>		<b>Final Destination</b>	
1226		NET 30 DAYS		FEDEX SO		CALIFORNIA	
<b>Ordered By</b>		<b>Sales Representative</b>		<b>Order Date</b>		<b>Our Order No</b>	
Joel Barnard		JEREMY SHEPHERD		6/16/2020		20121777	
						<b>Customer ID</b>	
						008388	

LIN	DL	Order Qty	Shipped Qty	Part Number	Description / Comments	Unit	Unit Price	Extended Price
01	01	11.00	6.00	0099260	LEVEL TROLL 400, 300PSIA	EA	795.00	\$ 4,770.00
					S/N: 748291			
					S/N: 749037			
					S/N: 749374			
					S/N: 749376			
					S/N: 749382			
					S/N: 749389			
					9 Percent		429.30	
					.00021 Percent		0.01	

RECEIVED  
 STETSON ENGINEERS, INC.  
 JUL 06 2020  
 SAN RAFAEL

Contact for Invoice Questions: Accounts Receivable at 1-800-446-7488

Amount in USD

Line Item Totals	Discount	Sub Total	S / H	Taxable Amount	Tax	Misc	Invoice Total
4,770.00	0.00	4,770.00	0.00	4,770.00	429.31	0.00	\$ 5,199.31



EnviroTech Services Company, Inc.  
 4851 Sunrise Drive, Suite 101  
 Martinez, CA. 94553  
 Ph: 800-468-8921  
 Fax: 925-370-8037

# Invoice

112109  
 Invoice Date:  
 Jun 22, 2020

**Sold To:**

Stetson Engineers, Inc  
 2171 E. Francisco Blvd.  
 Ste. K  
 San Rafael, CA 94901  
 USA

**Ship to**

Stetson Engineers, Inc  
 2171 E. Francisco Blvd.  
 Ste. K  
 San Rafael, CA 94901  
 USA

<b>Customer ID</b>	<b>Customer PO</b>	<b>Payment Terms</b>	
STETSON-CA	Joel Barnard; 2652	Net 30 Days	
<b>Sales Rep ID</b>	<b>Shipping Method</b>	<b>Ship Date</b>	<b>Due Date</b>
FRED	UPS Orange	6/23/20	7/22/20

Quantity	Item	Description	Unit Price	Extension
1.00		Heron; 500-foot Water Level Meter Dipper 2. List Price = \$1,049 Printed  Drop shipped from manufacturer out of New York.  FMO; 7-17-20; added freight and sent invocie	879.00	879.00

\*Rental instruments not  
 decontaminated properly are  
 subject to a decontamination  
 fee.

\*Any returned items are subje  
 to a 20% re-stocking fee.

\*All rental equipment returned  
 damaged or incomplete will be  
 subject to replacement / repair  
 costs and fees.

Subtotal 879.00  
 Sales Tax 79.11  
 Freight 26.50

**TOTAL 984.61**





221 East Lincoln Ave., Fort Collins, Colorado 80524  
 Tel: 1.970.498.1500 / Fax: 1.970.498.1598 / www.in-situ.com  
 Fed ID: 83-0245889 GSA: GS-24F-00-45M

RECEIVED  
 STETSON ENGINEERS, INC.

JUN 23 2020

SAN RAFAEL

**Invoice**

Number: 00135117

Date: 6/17/2020

Page 1 of 1

**Bill To:** STETSON ENGINEERS CA  
 2171 EAST FRANCISCO BLVD  
 SUITE K  
 SAN RAFAEL, CA 94901  
 United States

**Ship To:** STETSON ENGINEERS CA  
 2171 EAST FRANCISCO BLVD  
 SUITE K  
 SAN RAFAEL, CA 94901  
 United States

<b>Customer PO Number</b>	<b>Terms</b>	<b>Ship Via</b>		<b>Final Destination</b>
1225	NET 30 DAYS	FEDEX GROUND		CALIFORNIA
<b>Ordered By</b>	<b>Sales Representative</b>	<b>Order Date</b>	<b>Our Order No</b>	<b>Customer ID</b>
Joel Barnard	JEREMY SHEPHERD	6/16/2020	20121775	008388

LIN	DL	Order Qty	Shipped Qty	Part Number	Description / Comments	Unit	Unit Price	Extended Price
01	01	2.00	2.00	0099240	LEVEL TROLL 400, 30PSIA S/N: 745192	EA	795.00	\$ 1,590.00
					S/N: 745349			
02	01	1.00	1.00	0052000	Rugged Twist-Lock Cable FT NON-VENTED POLY CABLE Qty: " 20.00 NO REEL 0-100' RUGGED 485/232 NON-VENTED	EA	209.00	\$ 209.00
					S/N: 748109			
03	01	1.00	1.00	0052000	Rugged Twist-Lock Cable FT NON-VENTED POLY CABLE Qty: " 10.00 NO REEL 0-100' RUGGED 485/232 NON-VENTED	EA	179.00	\$ 179.00
					S/N: 748115			
09	01	1.00	1.00	0031240	WIRELESS TROLL COM FOR iOS/ANDROID DEVICE S/N: 744541	EA	595.00	\$ 595.00

COMMENTS:

SH/TW

9 Percent 231.57  
 .00039 Percent 0.01

Contact for Invoice Questions: Accounts Receivable at 1-800-446-7488

Amount in USD

Line Item Totals	Discount	Sub Total	S / H	Taxable Amount	Tax	Misc	Invoice Total
2,573.00	0.00	2,573.00	96.00	2,573.00	231.58	0.00	\$ 2,900.58

# Project Accounting Summary

Account #: 1757778 Invoice #: 1744723399 Date: 06/30/2020

Total Conferences:	1	16	\$25.32
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## PAC: 2595

Owner Name	Conference	Date	Minutes	Conf Charge
Krueger, Robyn	357913064	06/25/20	391	\$58.82
Krueger, Robyn	357855110	06/25/20	92	\$25.55

Total Conferences:	2	483	\$84.37
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## PAC: 2628

Owner Name	Conference	Date	Minutes	Conf Charge
Reich, Steve	358259343	06/29/20	203	\$30.52
Krueger, Robyn	357708301	06/24/20	430	\$64.67
Reich, Steve	355905935	06/11/20	432	\$64.99

Total Conferences:	3	1065	\$160.18
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## PAC: 2652

Owner Name	Conference	Date	Minutes	Conf Charge
Reich, Steve	357655703	06/24/20	283	\$42.60
Castaneda, Fatima	357639378	06/24/20	46	\$25.42
Castaneda, Fatima	354984737	06/05/20	264	\$39.73
Reich, Steve	354842868	06/04/20	204	\$30.70
Castaneda, Fatima	354312222	06/02/20	481	\$72.37

Total Conferences:	5	1278	\$210.82
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## PAC: 2681002

Owner Name	Conference	Date	Minutes	Conf Charge
Castaneda, Fatima	356644172	06/17/20	18	\$25.32
Castaneda, Fatima	355612325	06/10/20	5	\$25.28
Castaneda, Fatima	354540761	06/03/20	50	\$25.46

Total Conferences:	3	73	\$76.06
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## PAC: 268102

Owner Name	Conference	Date	Minutes	Conf Charge
Castaneda, Fatima	355614846	06/10/20	15	\$25.32

Total Conferences:	1	15	\$25.32
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## PAC: 2682

Owner Name	Conference	Date	Minutes	Conf Charge
Reich, Steve	357710044	06/24/20	283	\$42.58
Reich, Steve	357052116	06/19/20	507	\$76.28

Total Conferences:	2	790	\$118.86
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## PAC: 2728

See back of receipt for your chance  
to win \$1000 ID #: 7P8WCQW0801

# Walmart \*

760-966-0026 Mgr: JOSEPH  
2100 VISTA WAY

OCEANSIDE CA 92054

ST# 02494	OP# 009036	TE# 36	TR# 02756	
EQUATE POUFS	068113114584		0.97	X
WLMS 2OCT	001150930919		2.98	X
WLMS 2OCT	001150930919		2.98	X
EQ FLUSH TRV	068113110455		0.97	X
FS HAND SNTZ	081682002820		4.00	X
CARRYBAG FEE	000000001101K		0.10	0
	SUBTOTAL		12.00	

TAX 1 8.250 % 0.98

TOTAL 12.98

VISA TEND 12.98

\*\*\*\* \* 4005 I 1

VISA CREDIT

APPROVAL # 26989D

REF # 1042000314

TRANS ID - 460178844566021

VALIDATION - ZQ83

PAYMENT SERVICE - E

AID A0000000031010

AAC 094666467DDBD14A

TERMINAL # SC010065

06/26/20 16:27:42

CHANGE DUE 0.00

# ITEMS SOLD 6

TC# 0378 8211 7864 9355 0884



Low Prices You Can Trust. Every Day.

06/26/20 16:27:42

\*\*\*CUSTOMER COPY\*\*\*

# WinCo FOODS

www.wincofoods.com  
2245 S. El Camino Real  
Oceanside, CA 92054  
Store #0145

Cashier: Elizabeth R

06/27/20

20:34:27

CLIF BAR TOFFE 72225210240	.98 FS
4 @ .98	
COOL MINT CHOC 72225210200	3.92 FS
CLIF BAR 72225213990	.98 FS
CLIF BAR BLUBR 72225210260	.98 FS
CLIF BAR 72225213984	.98 FS
LIFE WATER 1200017002	7.98 FS
+CRV 400000000095	.60 FS
1.98 lb @ .98 / lb	
GRAPE, RED S/L 4023	1.94 FS
2 @ .88	
GATORADE 32Z 5200010406	1.76 FS
2 @ .10	
+CRV 400000000052	.20 FS
GATORADE 5200004252	.88 FS
+CRV 400000000052	.10 FS
2 @ .88	
GATORADE GRAPE 5200032673	1.76 FS
2 @ .10	
+CRV 400000000052	.20 FS
HAND SANITIZER 84849605737	4.98 T2
SUBTOTAL	28.24
TOTAL TAX	.41
TOTAL	28.65
DEBIT CARD TENDER	28.65
C Acct: xxxxxxxxxxxxxx3416	
Chip Read	
Verified By PIN	
US DEBIT	PURCHASE
AID: A0000000980840	
TVR: 8080048000	
IAD: 06010A03602000	
TSI: 6800	
ARC: 00	
Mode: Issuer	
CASH CHANGE	.00
NUMBER OF ITEMS	22

06/27/20 Oper # 202433 Trx # 302  
20:35:21 Term # 14 Store #0145

THANK YOU FOR SHOPPING AT WINCO  
(760) 573-7050

Chevron Stations Inc  
14217 Highway 395  
Victorville CA  
00373173

06/29/2020 12:22:27 PM

Register: 1 Trans #: 9322 Op ID: 714656  
Your cashier: ALMA

COKE CHERRY 20 PL, Each (049000018011)	\$2.29	1
MAR-JUN20 C20DZ 2/3.29 CITY	\$-0.65	
\$0.05 DEP T 01 (23)	\$0.05	1
FIJI WATER 1 LTR, Each (632565000029)	\$3.09	99
\$0.10 DEP NT 01 (24)	\$0.10	99
COKE CHERRY 20 PL, Each (049000018011)	\$2.29	1
MAR-JUN20 C20DZ 2/3.29 CITY	\$-0.64	

\$0.05 DEP T 01 (23)	\$0.05	1
-----		
Subtotal =	\$6.58	
SALES TA =	\$0.26	
-----		
Total =	\$6.84	
Change Due =	\$0.00	

Credit \$6.84

XXXXXXXXXXXX2171 DISCOVER  
INVOICE: E/733653  
AUTH 02939R

SALE TRANSACTION

Chip Read  
Discover Credit  
Mode: Issuer  
AID: A0000001523010

Get rewarded on every fill-up at Chevron with a Technon Advantage card. See app for details.

\*\* PURCHASE \*\*

Panda Express #1622

Victorville, CA  
(760)843-5845

6/29/2020 12:29:26 PM -Drive Thru-  
Order: 454882 Server: Victoria M

1 PANDA BOWL 6.80  
CHOW MEIN-1/2  
CHOW MEIN-1/2  
ORANGE CKN

SubTotal 6.80  
TAX 0.53  
Total 7.33

Discover 7.33

Acct:XXXXXXXX2171  
AuthCode:02948R  
\*Card details below

EMV: Chip Read  
APL: Discover  
AID: A0000001523010

\*\*\*\*\*  
\* FREE ENTREE ITEM! \*  
\* Tell us about your visit and \*  
\* receive a free entree item on us. \*  
\* See back for details. \*  
\* \*  
\* Survey Code: \*  
\* 2920-5488-4222-0166-0213-00 \*  
\*\*\*\*\*

Questions or Comments?  
[pandaexpress.com/connect](http://pandaexpress.com/connect)

Ticket # 1203194

6/29/20 4:28 pm

Reg: 2 Store: 1000 Clerk: HNV

Beanster's Espresso  
1601 Triangle Drive  
Ridgecrest, CA 93555  
760-446-2320

**Quantity      Price      Extended Price**

**Mocha Medium**

1                      \$4.85                      \$4.85

Taxable Total:                      \$0.00

Non-Taxable Total:                      \$4.85

Tax Amount:                      \$0.00

**Order Grand Total:                      \$4.85**

Credit Card Tendered:                      \$4.85

**Change Due:                      \$0.00**

.MERCHANT ID: \*\*\*\*\*7751  
 .CLERK ID: HNV  
 .  
 .                      SALE  
 .  
 .DISCOVER                      \*\*\*\*\*2171  
 .ENTRY METHOD: SWIPED  
 .DATE: 06/29/2020 TIME: 16:28:03  
 .  
 .INVOICE: 430304  
 .REFERENCE: 0072  
 .AUTH CODE: 02991R  
 .  
 .AMOUNT                      USD\$ 4.85  
 .                      =====  
 .TOTAL                      USD\$ 4.85  
 .  
 .                      APPROVED - THANK YOU  
 .  
 .I AGREE TO PAY THE ABOVE TOTAL AMOUNT  
 .ACCORDING TO CARD ISSUER AGREEMENT  
 .(MERCHANT AGREEMENT IF CREDIT VOUCHER)  
 .  
 .  
 .Tip 15% 0.73 18% 0.87 20% 0.97  
 .  
 .Tip                      \$ 1.00  
 .  
 .Total                      \$ 5.85  
 .  
 .x \_\_\_\_\_  
 .                      Cardholder Signature

Thank You, Have a great day!!



SEE BACK FOR CHANCE TO WIN

SEE BACK FOR CHANCE TO WIN

**ARBYS 5270**

830 N CHINA LAKE BLVD, MANAGER  
RIDGECREST, CA 93555  
7603757572

**ORDER: 25**  
**Drive-Thru**

Cashier: Alfredo  
29 Jun-2020 7:10:20P

Transaction 311784

1	Beef'n Cheddar Classic	\$4.79
1	Curly Fries	\$0.00
	Sm Fry	\$2.49

<b>Subtotal</b>		<b>\$7.28</b>
Tax	8.25%	\$0.60

**Total** **\$7.88**

CREDIT CARD AUTH  
DISCOVER 2171 **\$7.88**

29 Jun-2020 7:19:09P  
 \$7.88 | Method: EMV  
 Discover XXXXXXXXXXXX2171  
 NICHOLE WEEDMAN  
 Reference ID: 018200557297 | Auth ID:  
 02965R  
 MID: \*\*\*\*\*0889  
 AID: A0000001523010  
 AuthNtwkNm: DISCOVER

Order SAR324371WORE  
Payment RKQFJWQ59VMQE

Clover Privacy Policy  
<https://clover.com/privacy>

SEE BACK FOR CHANCE TO WIN



# STATER BROS. markets

Stater Bros.  
(760)375-5557  
\*\*\*\*\* MANAGER \*\*\*\*\*  
Robert Miller  
Store # 109

Cashier: Leilani M

06/30/20

17:37:26

NABISCO TRISCUITS		1.99 F
YOU JUST SAVED	1.00	
FRENCHS MUSTARD		1.59 F
CHEEZ-IT EX TOASTY		2.99 F
Gen Mills/Dreyers Ad Item		
SANDWICH		5.99 F
NO BAGS		.00
POLY REUSABLE BAG		.10
		12.66
		.00
		12.66
Discover		12.66
		12.66
CASH CHANGE		.00
Number OF ITEMS		6

## SAVINGS TOTAL

Stater Savers / E-Coupons 1.00

YOU JUST SAVED 1.00  
Without A Card!

Stater Bros.  
Your HOMETOWN Grocer!

\*\*\*\*\*  
Stater Bros. Markets  
Store # 109  
\*\*\*\*\* Electronic Payment Activity \*\*\*\*\*  
SALE

MID: LK388570  
TID: 388570

06/30/2020 17:37:45  
Entry Method: Chip  
Seq #: 012182  
Approval Code: 03066R

Discover Credit  
CARD #: XXXXXXXXXXXX2171  
AID: A0000001523010  
TVR: 0800008000  
IAD: 0105A000030000001E0300000000000  
00000  
TSI: E800 ARC: 03066R  
TC: D826210CFFEF8EEB  
RRN: 012182

Total: USD\$ 12.66

APPROVED BY ISSUER

\*\*\*\*\*  
06/30/20 Oper # 6193533 Trx # 462  
17:37:47 Term # 1 Store #109  
\*\*\*\*\*

We will exchange/refund most items with  
a receipt on items purchased on or after  
June 24, 2020  
WE RESERVE THE RIGHT TO REFUSE ANY REFUND

Thank You For Choosing  
PAPA JOHN'S PIZZA  
Restaurant #4526  
820 N China Lake Blvd, Suite A  
Ridgecrest, CA 93555  
(760)375-7272

Name: nichole

SALE

Order #: 0040 Phone / Carryout

Katlynn 06/30/2020 05:25 PM

MID: 554 Lane: 2

Card Type: Discover

Entry Mode: C

Account #: xxxx2171

Authorization #: 03018R

Reference #: 169881

Batch ID: 778

Subtotal: 8.99

Tax: 0.74

Total: 9.73

Discover: 9.73

Tip: \_\_\_\_\_

Total: \_\_\_\_\_

Additional Tender Amt: 0.00

APPROVED

JOIN PAPA REWARDS

You can still earn points  
for this order!

Use this code:  
620509017019

Sign up now at [papajohns.com](http://papajohns.com) or  
download our App to get  
your points.

This code expires in three days.

Discover Credit

AID A0000001523010

TVR 0000008000

TSI E800

IC ED70C99569E32E03

STAN: 288409

refnum: 730288409

Time: 06/30/20 17:39:53

Customer Copy

IMPORTANT - RETAIN THIS  
COPY FOR YOUR RECORDS  
Better Ingredients  
Better Pizza

*The page intentionally blank*



**Invoice**

County of Kern  
 County Administrative Office  
 1115 Truxton Ave., 5th Floor  
 Bakersfield, CA 93301  
 ATTN.: Mr. Alan Christensen

**Invoice Number: 2652-36**  
**Invoice Date: 08/14/20**

Project #: 2652 **Indian Wells Valley Groundwater Authority**

Professional Services through 7/31/2020

**Water Resources Management**

**01 - POAM No. 134 Prep & Attend Board, PAC & TAC Mtgs/Consult w/ Authority & Co**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	26.50	\$230.00	\$6,095.00
Supervisor I	9.25	\$200.00	\$1,850.00
Associate III	39.75	\$105.00	\$4,173.75
<i>Professional Services Subtotal:</i>			<i>\$12,118.75</i>
			<u>Charge</u>
Reimbursables			\$82.77
Reproduction (Color)			\$599.88
Data			\$1.05
Reproduction			\$66.94
Telephone - Conference Call			
<i>Reimbursables Subtotal:</i>			<i>\$750.64</i>
			<u>\$12,869.39</u>

*'OAM No. 134 Prep & Attend Board, PAC & TAC Mtgs/Consult w/ Authority & Com* \$12,869.39

**02.01 - POAM No. 15,16 Prop 1 Grant Administration**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	3.50	\$230.00	\$805.00
Supervisor I	3.00	\$200.00	\$600.00
Senior I	8.00	\$160.00	\$1,280.00
Associate III	12.00	\$105.00	\$1,260.00
Administrative II	8.25	\$65.00	\$536.25
<i>Professional Services Subtotal:</i>			<i>\$4,481.25</i>
<i>POAM No. 15,16 Prop 1 Grant Administration Subtotal:</i>			<i>\$4,481.25</i>

**04.02 - POAM No. 20 Data Management System**

<b>Professional Services</b>	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	6.25	\$230.00	\$1,437.50
Supervisor I	1.50	\$200.00	\$300.00
Associate I	86.00	\$115.00	\$9,890.00
Assistant I	29.50	\$95.00	\$2,802.50
<i>Professional Services Subtotal:</i>			<i>\$14,430.00</i>
			<u>Charge</u>
Reimbursables			\$847.82
Car Rental			\$589.95
Equipment Rental Expense			\$673.77
Field Supplies			\$573.90
Lodging			\$112.70
Meals			



**04.02 - POAM No. 20 Data Management System**

**Reimbursables**

Toll Charge  
\$9.95

*Reimbursables Subtotal:* \$2,808.09

*POAM No. 20 Data Management System Subtotal:* \$17,238.09

**05 - POAM No. 126 Project Management Costs & Schedule**

**Professional Services**

	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	2.00	\$230.00	\$460.00
Supervisor I	5.00	\$200.00	\$1,000.00
Associate I	1.00	\$115.00	\$115.00
Associate III	15.50	\$105.00	\$1,627.50
Assistant I	1.50	\$95.00	\$142.50

*Professional Services Subtotal:* \$3,345.00

*POAM No. 126 Project Management Costs & Schedule Subtotal:* \$3,345.00

**07.01 - Imported Water RFP**

**Professional Services**

	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	1.00	\$230.00	\$230.00

*Professional Services Subtotal:* \$230.00

*Imported Water RFP Subtotal:* \$230.00

**11.02 - POAM No. 56 Monitoring Wells - Implementation**

**Professional Services**

	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Supervisor I	13.00	\$200.00	\$2,600.00
Associate I	4.25	\$115.00	\$488.75
Assistant I	22.50	\$95.00	\$2,137.50
GIS Specialist I	1.75	\$95.00	\$166.25

*Professional Services Subtotal:* \$5,392.50

*POAM No. 56 Monitoring Wells - Implementation Subtotal:* \$5,392.50

**11.04 - POAM No. 64 Stream Gages - Implementation**

**Professional Services**

	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	1.50	\$230.00	\$345.00
Supervisor I	1.00	\$200.00	\$200.00
Associate I	5.25	\$115.00	\$603.75

*Professional Services Subtotal:* \$1,148.75

*POAM No. 64 Stream Gages - Implementation Subtotal:* \$1,148.75

**11.05 - POAM No. 78 Aquifer Tests**

**Professional Services**

	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Supervisor I	9.50	\$200.00	\$1,900.00
Assistant I	47.50	\$95.00	\$4,512.50

*Professional Services Subtotal:* \$6,412.50

**Reimbursables**

	<u>Charge</u>
Car Rental	\$498.68
Field Supplies	\$58.74
Lodging	\$318.68
Meals	\$71.52

*Reimbursables Subtotal:* \$947.62

**Sub-Contractors**

Charge



**11.05 - POAM No. 78 Aquifer Tests**

**Sub-Contractors**

	<u>Charge</u>
Board of Regents	\$10,640.93

*Sub-Contractors Subtotal:* \$10,640.93

*POAM No. 78 Aquifer Tests Subtotal:* \$18,001.05

**11.08 - POAM No. 69 Weather Stations - Implementation**

**Professional Services**

	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	4.00	\$230.00	\$920.00
Associate I	7.50	\$115.00	\$862.50
Administrative II	0.50	\$65.00	\$32.50

*Professional Services Subtotal:* \$1,815.00

**Reimbursables**

	<u>Charge</u>
Field Supplies	\$100.05

*Reimbursables Subtotal:* \$100.05

*POAM No. 69 Weather Stations - Implementation Subtotal:* \$1,915.05

**12 - POAM No. 119 SDAC Projects; Water Conservation & Rebate Program**

**Professional Services**

	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Supervisor I	1.75	\$200.00	\$350.00
Associate III	8.50	\$105.00	\$892.50

*Professional Services Subtotal:* \$1,242.50

*POAM No. 119 SDAC Projects; Water Conservation & Rebate Program Subtotal:* \$1,242.50

**13 - POAM No. 120 SDAC Projects: Water Audit, Leak Detection & Leak Rpr Program**

**Professional Services**

	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Supervisor I	2.75	\$200.00	\$550.00
Associate III	11.00	\$105.00	\$1,155.00

*Professional Services Subtotal:* \$1,705.00

*POAM No. 120 SDAC Projects: Water Audit, Leak Detection & Leak Rpr Program S* \$1,705.00

**14 - POAM No. 139 Pumping Assessment Support**

**Professional Services**

	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Associate III	2.00	\$105.00	\$210.00

*Professional Services Subtotal:* \$210.00

*POAM No. 139 Pumping Assessment Support Subtotal:* \$210.00

**15 - TSS Program**

**Professional Services**

	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Supervisor I	3.00	\$200.00	\$600.00
GIS Manager	1.50	\$115.00	\$172.50
Assistant I	8.25	\$95.00	\$783.75

*Professional Services Subtotal:* \$1,556.25

*TSS Program Subtotal:* \$1,556.25

**18 - Wellntel Coordination**

**Professional Services**

	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Supervisor I	2.50	\$200.00	\$500.00
Associate I	0.50	\$115.00	\$57.50
Assistant I	8.25	\$95.00	\$783.75

*Professional Services Subtotal:* \$1,341.25

**Reimbursables**

Charge



**18 - WellIntel Coordination**

**Reimbursables**

	<u>Charge</u>
Lodging	\$512.94

*Reimbursables Subtotal:* \$512.94

*WellIntel Coordination Subtotal:* \$1,854.19

**22 - Prepare Meter Testing Specifications**

**Professional Services**

	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	3.00	\$230.00	\$690.00
Senior I	9.50	\$160.00	\$1,520.00
Associate I	0.75	\$115.00	\$86.25

*Professional Services Subtotal:* \$2,296.25

*Prepare Meter Testing Specifications Subtotal:* \$2,296.25

**23 - Pumping Verification**

**Professional Services**

	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	8.00	\$230.00	\$1,840.00
Supervisor I	8.50	\$200.00	\$1,700.00
Associate III	35.75	\$105.00	\$3,753.75
Senior Assistant	32.25	\$100.00	\$3,225.00

*Professional Services Subtotal:* \$10,518.75

*Pumping Verification Subtotal:* \$10,518.75

**24 - Sustainable Yield Allocation Report**

**Professional Services**

	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	1.00	\$230.00	\$230.00
Supervisor I	16.50	\$200.00	\$3,300.00
Associate III	4.00	\$105.00	\$420.00

*Professional Services Subtotal:* \$3,950.00

*Sustainable Yield Allocation Report Subtotal:* \$3,950.00

**26 - Allocation Process & Transient Pool Support**

**Professional Services**

	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	6.50	\$230.00	\$1,495.00
Associate III	0.75	\$105.00	\$78.75

*Professional Services Subtotal:* \$1,573.75

*Allocation Process & Transient Pool Support Subtotal:* \$1,573.75

**27 - 2020 Data Collection/Monitoring/Data Gaps**

**Professional Services**

	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Supervisor I	7.00	\$200.00	\$1,400.00
GIS Manager	0.75	\$115.00	\$86.25
Assistant I	8.25	\$95.00	\$783.75

*Professional Services Subtotal:* \$2,270.00

*2020 Data Collection/Monitoring/Data Gaps Subtotal:* \$2,270.00

**29 - 2020 Grant Review/Application**

**Professional Services**

	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Associate III	0.50	\$105.00	\$52.50

*Professional Services Subtotal:* \$52.50

*2020 Grant Review/Application Subtotal:* \$52.50



**30 - 2020 General Engineering**

**Professional Services**

	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	13.00	\$230.00	\$2,990.00
Supervisor I	7.75	\$200.00	\$1,550.00
Associate III	5.00	\$105.00	\$525.00

*Professional Services Subtotal:* \$5,065.00

*2020 General Engineering Subtotal:* \$5,065.00

**31 - Develop Rules and Regulations**

**Professional Services**

	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Supervisor I	3.50	\$200.00	\$700.00
Associate III	0.50	\$105.00	\$52.50

*Professional Services Subtotal:* \$752.50

*Develop Rules and Regulations Subtotal:* \$752.50

**32 - Review of Ramboll Report**

**Professional Services**

	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Principal	2.50	\$230.00	\$575.00
Supervisor I	9.50	\$200.00	\$1,900.00

*Professional Services Subtotal:* \$2,475.00

*Review of Ramboll Report Subtotal:* \$2,475.00

**33 - Storage Calculation**

**Professional Services**

	<u>Bill Hours</u>	<u>Bill Rate</u>	<u>Charge</u>
Supervisor I	14.25	\$200.00	\$2,850.00
GIS Manager	1.50	\$115.00	\$172.50
Assistant I	0.25	\$95.00	\$23.75

*Professional Services Subtotal:* \$3,046.25

*Storage Calculation Subtotal:* \$3,046.25

***Water Resources Management Subtotal:* \$103,189.02**

**\*\*\* Invoice Total \*\*\***

**\$103,189.02**





## REIMBURSABLE SUMMARY

County of Kern  
 County Administrative Office  
 1115 Truxtun Ave., 5th Floor  
 Bakersfield CA 93301  
 ATTN.: Mr. Alan Christensen

**Invoice Number: 2652-36**

**Invoice Date: 08/14/20**

Project #: 2652 **Indian Wells Valley Groundwater Authority**

Manager: Stephen Johnson

Professional Services through 07/31/2020

### Water Resources Management

#### 01 - POAM No. 134 Prep & Attend Board,PAC & TAC Mtgs/Consult w/ Authority & Committees to Dev GSP

##### Reimbursables

Description	Date	Units	Unit Rate	Charge	Notes
Telephone - Conference Call	07/07/2020	1.00	\$39.63	\$39.63	
Telephone - Conference Call	07/07/2020	1.00	\$27.31	\$27.31	
Data	07/31/2020	1.00	\$599.88	\$599.88	
Reproduction	07/31/2020	7.00	\$0.15	\$1.05	
Reproduction (Color)	07/31/2020	69.00	\$0.89	\$61.41	
Reproduction (Color)	07/31/2020	24.00	\$0.89	\$21.36	
				POAM No. 134 Prep & Attend Board,PAC & TAC Mtgs/Consult w/ Auth	\$750.64

#### 04.02 - POAM No. 20 Data Management System

##### Reimbursables

Description	Date	Units	Unit Rate	Charge	Notes
Car Rental	07/01/2020	1.00	\$53.72	\$53.72	Rental Car Gas
Meals	07/01/2020	1.00	\$65.11	\$65.11	Groceries for Food during fieldwork
Car Rental	07/02/2020	1.00	\$38.26	\$38.26	
Car Rental	07/02/2020	1.00	\$20.50	\$20.50	
Car Rental	07/02/2020	1.00	\$267.18	\$267.18	
Car Rental	07/02/2020	1.00	\$44.87	\$44.87	Rental car gas
Field Supplies	07/02/2020	1.00	\$51.52	\$51.52	materials for datalogger installation and retrofits
Meals	07/02/2020	1.00	\$8.53	\$8.53	
Meals	07/02/2020	1.00	\$5.45	\$5.45	
Car Rental	07/03/2020	1.00	\$41.48	\$41.48	rental car gas
Equipment Rental Expense	07/03/2020	1.00	\$589.95	\$589.95	Survey GPS rental for surveying well elevations
Field Supplies	07/03/2020	1.00	\$31.02	\$31.02	materials for well retrofits
Lodging	07/03/2020	1.00	\$573.90	\$573.90	Motel for fieldwork
Meals	07/03/2020	1.00	\$33.61	\$33.61	groceries for meals during fieldwork
Toll	07/03/2020	1.00	\$9.95	\$9.95	Rental Car Toll Charge. Richmond/SR bridge
Car Rental	07/04/2020	1.00	\$55.37	\$55.37	rental car gas
Car Rental	07/04/2020	1.00	\$326.44	\$326.44	Car Rental
Field Supplies	07/31/2020	1.00	\$591.23	\$591.23	materials for well retrofits. locking well caps.
				POAM No. 20 Data Management System Sub-Total:	\$2,808.09



## REIMBURSABLE SUMMARY

County of Kern  
 County Administrative Office  
 1115 Truxtun Ave., 5th Floor  
 Bakersfield CA 93301  
 ATTN.: Mr. Alan Christensen

**Invoice Number: 2652-36**  
**Invoice Date: 08/14/20**

Project #: 2652 **Indian Wells Valley Groundwater Authority**  
 Manager: Stephen Johnson  
 Professional Services through 07/31/2020

### 11.05 - POAM No. 78 Aquifer Tests

#### Reimbursables

Description	Date	Units	Unit Rate	Charge	Notes
Car Rental	07/01/2020	1.00	\$64.19	\$64.19	
Car Rental	07/06/2020	1.00	\$47.22	\$47.22	
Field Supplies	07/06/2020	1.00	\$31.19	\$31.19	
Field Supplies	07/06/2020	1.00	\$5.39	\$5.39	
Meals	07/06/2020	1.00	\$8.98	\$8.98	
Meals	07/06/2020	1.00	\$7.33	\$7.33	
Meals	07/06/2020	1.00	\$3.87	\$3.87	
Meals	07/06/2020	1.00	\$5.45	\$5.45	
Car Rental	07/07/2020	1.00	\$126.10	\$126.10	
Car Rental	07/07/2020	1.00	\$37.46	\$37.46	
Lodging	07/07/2020	1.00	\$170.98	\$170.98	
Meals	07/07/2020	1.00	\$4.25	\$4.25	
Car Rental	07/28/2020	1.00	\$51.22	\$51.22	
Field Supplies	07/28/2020	1.00	\$3.22	\$3.22	
Meals	07/28/2020	1.00	\$4.25	\$4.25	
Meals	07/28/2020	1.00	\$11.28	\$11.28	
Meals	07/28/2020	1.00	\$6.60	\$6.60	
Car Rental	07/29/2020	1.00	\$46.39	\$46.39	
Field Supplies	07/29/2020	1.00	\$18.94	\$18.94	
Lodging	07/29/2020	1.00	\$147.70	\$147.70	
Meals	07/29/2020	1.00	\$3.88	\$3.88	
Meals	07/29/2020	1.00	\$7.60	\$7.60	
Meals	07/29/2020	1.00	\$5.19	\$5.19	
Meals	07/29/2020	1.00	\$2.84	\$2.84	
Car Rental	07/30/2020	1.00	\$126.10	\$126.10	

#### Sub-Contractors

Description	Date	Units	Unit Rate	Charge	Notes
Board of Regents	06/30/2020	1.00	\$10,640.93	\$10,640.93	

POAM No. 78 Aquifer Tests Sub-Total: \$11,588.55

### 11.08 - POAM No. 69 Weather Stations - Implementation

#### Reimbursables

Description	Date	Units	Unit Rate	Charge	Notes
Field Supplies	07/27/2020	1.00	\$78.42	\$78.42	BLM paint for Chimney Peak station requirement
Field Supplies	07/28/2020	1.00	\$21.63	\$21.63	mounting hardware to attach rain gage to structure

POAM No. 69 Weather Stations - Implementation Sub-Total: \$100.05

### 18 - WellIntel Coordination

#### Reimbursables

Description	Date	Units	Unit Rate	Charge	Notes
Lodging	07/01/2020	1.00	\$512.94	\$512.94	

WellIntel Coordination Sub-Total: \$512.94

1617 N CHINA LAKE  
BLVD RIDGECREST CA  
93555

THE BARN, 00359234  
1617 CHINA LAKE BLVD  
RIDGECREST, CA

07/01/2020 755333335  
07:02:51 AM

XXXXXXXXXXXX2987  
VISA  
INVOICE E/3488440  
AUTH 03286C

REPRINT \*\*\* REPRINT  
PUMP# 8  
UNLEAD REG CR13.601G  
PRICE/GAL \$3.299  
FUEL TOTAL \$ 44.87

Total = \$ 44.87  
REPRINT \*\*\* REPRINT  
CREDIT \$ 44.87  
Swiped

Get rewarded on  
every fill-up at  
Chevron with a  
Techron Advantage  
card. See app  
for details.

4908 E BRUNDAGE LN  
BAKERSFIELD CA 93307

BENZ CHEVRON  
00209600  
4908 E BRUNDAGE  
BAKERSFIELD, CA  
06/29/2020 871127412  
05:56:18 PM

XXXXXXXXXXXX2987  
VISA  
INVOICE E/0067014  
AUTH 02462C

\*\*\* REPRINT \*\*\* REPRINT \*\*\* REPRINT \*\*\*  
PUMP# 8  
UNLEAD REG CR17.336G  
PRICE/GAL \$3.099

FUEL TOTAL \$ 53.72  
\*\*\* REPRINT \*\*\* REPRINT \*\*\* REPRINT \*\*\*  
CREDIT \$ 53.72

Swiped

Get rewarded on  
every fill-up at  
Chevron with a  
Techron Advantage  
card. See app  
for details.

4908 E BRUNDAGE LN  
BAKERSFIELD CA 93307

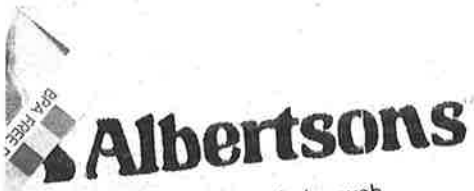
BENZ CHEVRON  
00209600  
4908 E BRUNDAGE  
BAKERSFIELD, CA  
07/02/2020 871128330  
11:31:28 AM

XXXXXXXXXXXX2987  
VISA  
INVOICE E/0067822  
AUTH 01219C

PUMP# 3  
UNLEAD REG CR13.385G  
PRICE/GAL \$3.099  
FUEL TOTAL \$ 41.48  
CREDIT \$ 41.48

Swiped

Get rewarded on  
every fill-up at  
Chevron with a  
Techron Advantage  
card. See app  
for details.



Store 331 Dir John McDonough  
 Main:(760) 384-4015 Rx:(760) 384-4020  
 927 South China Lake Boulevard  
 RIDGECREST CA 93555

**GROCERY**

QUAKER RICE SNK 3.79 S  
 Regular Price 4.49  
 Sale Savings 0.70-  
 O ORG CRACKERS PB 2.99 S  
 Regular Price 3.49  
 Sale Savings 0.50-  
 O ORG CRACKER CHES 2.99 S  
 Regular Price 3.49  
 Sale Savings 0.50-

**REFRIG/FROZEN**

REFRESHE ICE PREM 4.29 B  
 P.F. CHANGS HOME 4.79 S  
 Regular Price 5.99  
 Sale Savings 1.20-  
 2 QTY SUPER COFF 5.00 S  
 CRV REFRG SNGL NTX 0.10 S  
 Regular Price 5.98  
 Sale Savings 0.98-

**PRODUCE**

DNR SOL CAESAR 5.00 S

**MISCELLANEOUS**

DONATION 1.00  
 GTS KOMBUCHA 3.00 T  
 CRV PRODUCE SINGL 0.05 T  
 Regular Price 3.59  
 Sale Savings 0.59-

TAX 0.61  
 \*\*\*\* BALANCE 33.61

Credit Purchase 07/01/20 17:58  
 CARD # \*\*\*\*\*2987  
 REF: 10001669262 AUTH: 0005399C

PAYMENT AMOUNT 33.61

AL CAPITAL ONE VISA  
 AID A0000000031010  
 TVR 0000000000



Store 331 Dir John McDonough  
 Main:(760) 384-4015 Rx:(760) 384-4020  
 927 South China Lake Boulevard  
 RIDGECREST CA 93555

**GROCERY**

HW PROTEIN PB DARK 8.49 S  
 NED RITZ BITS CHSE 3.33 S  
 Regular Price 3.99  
 Sale Savings 0.66-  
 SNYDERS PRETZELS 2.00 S  
 Regular Price 3.69  
 Sale Savings 1.69-

**REFRIG/FROZEN**

AMYS BOWLS 3 4.99 S  
 Regular Price 5.49  
 Sale Savings 0.50-  
 HE SIMPLY STEAMER 3.99 S  
 Regular Price 4.99  
 Sale Savings 1.00-  
 20# PARTY ICE 5.99 B

**BAKED GOODS**

SOUROUGH BREAD 3.99 S  
 Regular Price 4.69  
 Sale Savings 0.70-

**PRODUCE**

DNR SOL CAESAR 5.00 S  
 DINNER SOLUTIONS C 5.00 S  
 2.20 lb @ \$0.97 /lb  
 WT BLACK SOLS GRAPES 2.13 S  
 Regular Price 6.58  
 Sale Savings 4.45-  
 2.88 lb @ \$1.99 /lb  
 WT CRIPPS PINK APPLES 5.73 S

**DELI**

PT HAM OFF THE BON 5.99 S  
 Regular Price 7.99  
 Sale Savings 2.00-  
 D3J CHEDDAR HRSRDH 6.99 S

**MISCELLANEOUS**

MR DONATION 1.00  
 TAX 0.49  
 \*\*\*\* BALANCE 65.11

Credit Purchase 05/29/20 20:30  
 CARD # \*\*\*\*\*2987  
 REF: 45001555321 AUTH: 0000924C

PAYMENT AMOUNT 65.11

AL CAPITAL ONE VISA  
 AID A0000000031010  
 TVR 0020008300  
 TSI E800

Visa 65.11

C-ANGE 0.00  
 TOTAL NUMBER OF ITEMS SOLD = 13  
 06/29/20 20:30 331 7 425 2532

YOUR CASHIER TODAY WAS WILL

HOW WAS YOUR SHOPPING EXPERIENCE?



More saving.  
More doing.<sup>SM</sup>

Evron Express  
093467  
0 Merrydale Rd.  
in Rafael, CA

03/2020 623474429  
12:42:40 AM

XXXXXXXXXX2987  
SA  
VOICE E/6779840  
ITH 00871C

IMP# 7  
LEAD REG 16.2916  
ICE/GAL \$3.399

DEL TOTAL \$ 55.37

Total = \$ 55.37

EDIT \$ 55.37  
ipped

It rewarded on  
every fill-up at  
Evron with a  
Chron Advantage  
card. See app  
for details.

TRAVIS\_K\_ULBERG@HOMEDEPOT.COM  
575 N CHINALAKE, RIDGECREST, CA 93555

1089 00052 97932 06/30/20 06:45 AM  
SALE SELF CHECKOUT

887480071863 EYE BOLT <A>  
5/16" X 4" EYE BOLT W/NUT ZP  
200.78 1.56  
887480024913 WASHER <A> 1.18  
WASHER SAE ZINC 5/16"  
887480115413 JAM NUT <A> 1.18  
JAM NUT ZINC 5/16"-18  
887480005219 FNDR WSHR <A> 1.18  
FENDER WASHER 5/16"  
030699433940 1/4" SS Q LK <A>  
QUICK LINK 1/4 SS  
206.28 12.56  
045242188321 5/16COBALT <A>  
MKE COBALT 5/16" BIT 1PC  
309.98 29.94

SUBTOTAL 47.60  
SALES TAX 3.92  
TOTAL \$51.52

XXXXXXXXXX2987 VISA

USD\$ 51.52

AUTH CODE 08995C/6521279

TA

Chip Read

AID A0000000031010

CAPITAL ONE VISA

TRAVIS\_K\_ULBERG@HOMEDEPOT.COM  
575 N CHINALAKE, RIDGECREST, CA 93555

1089 00051 41940 07/01/20 05:35 PM  
SALE SELF CHECKOUT

045242198665 HOLES AW <A> 14.97  
MILWAUKEE 1-1/2" BI-METAL HOLE SAW  
032888209978 1IN GALPLUG <A> 2.67  
1" GAL PLUG  
049081143183 PVC PLUG <A> 1.60  
1" PVC PLUG MPT  
049081143206 PVC PLUG <A> 1.91  
1-1/4" PVC PLUG MPT  
032888405769 11/4 GALPLUG <A> 3.98  
1-1/4" GAL PLUG  
038753334004 11/2 TST PLG <A> 3.53  
1-1/2" PLASTIC WING NUT TEST PLUG

SUBTOTAL 28.66  
SALES TAX 2.36  
TOTAL \$31.02

XXXXXXXXXX2987 VISA

USD\$ 31.02

AUTH CODE 06131C/5512099

TA

Chip Read

AID A0000000031010

CAPITAL ONE VISA



1089 51 41940 07/01/2020 7555

RETURN POLICY DEFINITIONS  
POLICY ID DAYS POLICY EXPIRES ON  
A 1 180 12/28/2020

Due to COVID-19, we have extended our  
returns policy for most items.  
Please see homedepot.com for details.

\*\*\*\*\*  
**DID WE NAIL IT?**

Take a short survey for a chance TO WIN  
A \$5,000 HOME DEPOT GIFT CARD

Opine en español

www.homedepot.com/survey

User ID: H89 85258 84220  
PASSWORD: 20351 84169

Entries must be completed within 14 days  
of purchase. Entrants must be 18 or  
older to enter. See complete rules on  
website. No purchase necessary.



1089 52 97932 06/30/2020 3963

RETURN POLICY DEFINITIONS  
POLICY ID DAYS POLICY EXPIRES ON  
A 1 180 12/27/2020

Due to COVID-19, we have extended our  
returns policy for most items.  
Please see homedepot.com for details.

\*\*\*\*\*  
**DID WE NAIL IT?**

Take a short survey for a chance TO WIN  
A \$5,000 HOME DEPOT GIFT CARD

Opine en español

www.homedepot.com/survey

User ID: H89 197242 196205  
PASSWORD: 20330 196153

Entries must be completed within 14 days  
of purchase. Entrants must be 18 or  
older to enter. See complete rules on  
website. No purchase necessary.



HAMPTON INN & SUITES - RIDGECREST  
 104 EAST SYDNOR AVE.  
 RIDGECREST, CA 93555  
 United States of America  
 TELEPHONE 760-446-1968 • FAX 760-446-1541  
 Reservations  
 www.hilton.com or 1 800 HILTONS

BARNARD, JOEL  
  
 27 ROOSEVELT AVENUE  
  
 SAN RAFAEL CA 94903  
 UNITED STATES OF AMERICA

Room No: 339/KXTO  
 Arrival Date: 6/29/2020 7:38:00 PM  
 Departure Date: 7/2/2020 2:14:00 PM  
 Adult/Child: 1/0  
 Cashier ID: DMR  
 Room Rate: 169.00  
 AL:  
 HH # 1273090694 BLUE  
 VAT #  
 Folio No/Che 190925 A

Confirmation Number: 84860224

HAMPTON INN & SUITES - RIDGECREST 7/2/2020 2:14:00 PM

DATE	REF NO	DESCRIPTION	CHARGES
6/29/2020	635382	GUEST ROOM	\$169.00
6/29/2020	635382	ROOM OCCUPANCY - TAX	\$16.90
6/29/2020	635382	RIDGECREST TOURISM IMPROVMENT	\$5.07
6/29/2020	635382	CA TOURISM ASSESSMENT	\$0.33
6/30/2020	635496	GUEST ROOM	\$169.00
6/30/2020	635496	ROOM OCCUPANCY - TAX	\$16.90
6/30/2020	635496	RIDGECREST TOURISM IMPROVMENT	\$5.07
6/30/2020	635496	CA TOURISM ASSESSMENT	\$0.33
7/1/2020	635581	GUEST ROOM	\$169.00
7/1/2020	635581	ROOM OCCUPANCY - TAX	\$16.90
7/1/2020	635581	RIDGECREST TOURISM IMPROVMENT	\$5.07
7/1/2020	635581	CA TOURISM ASSESSMENT	\$0.33
7/2/2020	635622	VS *2987	(\$573.90)
REF=0000190925-00194538 CHIP			
05			
Application Label: CAPITAL ONE VISA			
TC: B2561EF2700E43B9			
TVR: 00A0008000			
AID: 00A0008000			
<b>**BALANCE**</b>			<b>\$0.00</b>

Hilton Honors(R) stays are posted within 72 hours of checkout. To check your earnings or book your next stay at more than 5,700 hotels and resorts in 113 countries, please visit Honors.com

CREDIT CARD DETAIL

APPR CODE	04355C	MERCHANT ID	0194597900
CARD NUMBER	VS *2987	EXP DATE	03/25
TRANSACTION ID	635622	TRANS TYPE	Sale

# Joel Barnard

---

**From:** DoNotReply@erac.com  
**Sent:** Friday, July 3, 2020 9:53 AM  
**To:** Joel Barnard  
**Subject:** ENTERPRISE Rental Agreement 9HXWZ1



RA #: 9HXWZ1  
Renter: BARNARD,JOEL

Dates & Times	Location
<b>Pickup</b> Jun 29, 2020 8:41 AM	65 MEDWAY RD SAN RAFAEL, CA 94901-4027 4154567999
<b>Return</b> Jul 03, 2020 9:10 AM	65 MEDWAY RD SAN RAFAEL, CA 94901-4027 4154567999

Vehicle	
Make/Model: NISN/FROC	
Color: WHITE	
Mileage: 1109	
Fuel Out: Full	Fuel In: Full
License: BIS313	
Unit #: 7S9SLD	Vehicle #: KN767964

Charges	Price/Unit	Total
TIME & DISTANCE 06/29 - 07/03	4.0 @ \$48.44/DAY	\$193.76
VEHICLE LICENSE RECOVERY FEE	4.0 @ \$1.82/DAY	\$7.28
SALES TAX	9.0000%	\$17.44

Optional Products And Protections Accepted		
DW TIER 1	4.0 @ \$26.99/DAY	\$107.96
<b>Total Charges:</b>		<b>\$326.44</b>
Charge To:		VISA xxxx2987

2020-07-03 09:52:40



CA SURVEYING & DRAFTING SUPPLY DUBLIN

CALIFORNIA SURVEYING & DRAFTING SUPPLY

6701 SIERRA CT STE E
DUBLIN, CA 94568
PHONE: (925) 960-0323



a division of California Surveying & Drafting Supply

Table with 7 columns: CUST NO, JOB NO, PURCHASE ORDER, REFERENCE, TERMS, CLERK, DATE / TIME. Values include 491, 000, 415.457.0701, CNO: 4287 INVNO: 6372, CASH/CHECK/BANKCARD, TINA, 7/2/20 3:53

SOLD TO: STETSON ENGINEERS INC
2171 E FRANCISCO BLVS STE K
SAN RAFAEL CA 94901
415-457-0701

SHIP TO:

DUE DATE: 7/3/20 TERMINAL: 564
ORDER: 241512
DEL DATE: 7/2/20

TONYR
TAX: AL ALAMEDA 9.25%
SHIP VIA: Will Call

INVOICE: C41512/2

Main invoice table with columns: LINE, SHIPPED, ORDERED, UM, SKU, DESCRIPTION, SUGG, UNITS, PRICE/ PER, EXTENSION. Includes rental charges for SDGGE07X206B.

TAXABLE 540.00 SUBTOTAL 540.00
NON-TAXABLE 0.00

\*\* PAID IN FULL \*\* 589.95
(JOEL BARNARD) SUBTOTAL 540.00

TAX AMOUNT 49.95
TOTAL 589.95



BANKCARD PAYMENT
BKCRD# XXXXXXXXXXXXX2987

TOT WT: 0.00
MID: \*\*\*7472

APP: 09698C XR: 241512

X
Received By

All Accounts due and payable on receipt of this invoice. Delinquent in 30 days.
Accounts not paid in 30 days are subject to interest of 12% per annum, from date of invoice. Any discrepancies in price, item receipts or damages must be reported in writing and addressed to Julie Timpone within 30 days of invoice date.
Returned goods Authorization (RGA) must accompany all returns and exchanges. All returns and exchanges must be made within 30 days of this invoice. All returns subject to a 25% restocking fee. No cancellations, refunds, or exchanges on special order items, software and extended warranties.

REMIT TO: 4733 AUBURN BLVD. SACRAMENTO, CA 95841





2652-1108

**Final Details for Order #114-9435999-5721027**

Print this page for your records.

**Order Placed:** July 27, 2020  
**Amazon.com order number:** 114-9435999-5721027  
**Order Total:** \$21.63

**Shipped on July 27, 2020**

**Items Ordered**

1 of: *The Light Source Mega-Gridlock Clamp, Silver*  
Sold by: Lightsbot ([seller profile](#))

**Price**  
\$11.99

Condition: New  
\*Brand New \*Manufacturer's Warranty Included \*Please Let Us Know If You Have Any Questions! \*In-Stock & Ready to Ship Immediately!

**Shipping Address:**

Joel Barnard  
27 ROOSEVELT AVE  
SAN RAFAEL, CA 94903-4109  
United States

**Shipping Speed:**

Standard Shipping

**Payment information**

**Payment Method:**

Visa | Last digits: 2987

Item(s) Subtotal: \$11.99  
Shipping & Handling: \$7.99

**Billing address**

Joel Barnard  
27 ROOSEVELT AVE  
SAN RAFAEL, CA 94903-4109  
United States

Total before tax: \$19.98  
Estimated tax to be collected: \$1.65

**Grand Total: \$21.63**

**Credit Card transactions**

Visa ending in 2987: July 27, 2020: \$21.63

To view the status of your order, return to [Order Summary](#).

[Conditions of Use](#) | [Privacy Notice](#) © 1996-2020, Amazon.com, Inc. or its affiliates



BLM-05-QT BLM-05 Shale Green - Bureau of Land Management - Quart Can \$60.00 x 1

\$60.00

**Shipping To**

Joel Barnard  
27 ROOSEVELT AVE SAN RAFAEL,  
CA 94903 United States

**Shipping Method**

UPS

**Tracking Number**

1Z59465R0308748085

**Shipped Date**

07/16/2020

**Subtotal: \$60.00**

**Discount: \$0.00**

**Shipping: \$18.42**

**Sales Tax: \$0.00**

**Total: \$78.42**

Specialty Paint Place  
2972 Almeta LN  
McKinney, TX 75069  
Phone: 972-972-4612  
[linda@specialtypaintplace.com](mailto:linda@specialtypaintplace.com)

## Joel Barnard

---

**From:** Joel Barnard <joelbarnard@gmail.com>  
**Sent:** Thursday, July 16, 2020 1:57 PM  
**To:** Joel Barnard  
**Subject:** Fwd: Order Shipped # 2944

----- Forwarded message -----  
**From:** <linda@specialtypaintplace.com>  
**Date:** Thu, Jul 16, 2020 at 12:03 PM  
**Subject:** Order Shipped # 2944  
**To:** <joelbarnard@gmail.com>



Shipping Confirmation

## Joel Barnard,

This email confirms that your order was Shipped. Contact us if you have any questions about your order.  
Click here to track your order. 1Z59465R0308748085

Thanks for using Specialty Paint Place.

### Order Information

**Order number:** 2944  
**Order Date:** 7/14/2020

### Billing Address

Joel Barnard  
[joelbarnard@gmail.com](mailto:joelbarnard@gmail.com)  
8052522550  
27 ROOSEVELT AVENUE  
SAN RAFAEL, CA 94903 US

### Order Summary

### Additional Information

**Comments**  
Reference: IWVGA - BLM Wx Station  
**Account Info**  
Login: [joelbarnard@gmail.com](mailto:joelbarnard@gmail.com)  
Pass: \*\*\*\*\*

### Payment Information

**Payment Method**  
Credit Card

2652-04-02



CONTINENTAL SUPPLY COMPANY  
 460-A HARTER AVENUE  
 WOODLAND, CA 95776  
 (530) 669-7958

# Invoice

Date	Invoice #
7/31/20	132674

**PAID**  
 07/31/20

**Sold To**  
 CASH CUSTOMER  
 Stetson Engineers Inc.  
 Joel Barnard (415) 457-0701  
 Joelb@stetsonengineers.com

**Ship To**  
 Stetson Engineers Inc.  
 Joel Barnard (415) 457-0701  
 2171 E. Francisco Blvd. Suite K  
 San Rafael, CA 94901

S.O. No.	P.O. Number	Ship Via	Due Date	Terms	Rep	Ordered By
132518		UPS NDA	7/31/20	COB	EM	Joel Barnard

Item	Qty	B / O	Shipped	Description	U/M	Price	Total
WS	1	0	1	2-3/8" LKWC Royer Cap	ea	15.93	15.93T
WS	1	0	1	4-1/2" LKWC Royer Cap	ea	21.55	21.55T
WS	6	0	6	6-5/8" LKWC Royer Cap	ea	33.85	203.10T
WS	1	0	1	7" LKWC Royer Cap	ea	40.37	40.37T
Freight In	1		1	Freight In, UPS NDA Tracking# 1Z1656640160837392		285.00	285.00
				CA Sales Tax		25.28	25.28

SALES SLIP CS100L

DO NOT WRITE ABOVE THIS LINE

Stetson Engineering

EXPIRATION DATE CHECKED

Exp. 03/25 2987  
 Zip 94903

SIGN HERE  
 X Phone Order

The issuer of the card identified on this item is authorized to pay the amount shown as TOTAL upon proper presentation. I promise to pay such TOTAL (together with any other charges due thereon) subject to and in accordance with the agreement governing the use of such card.

PLEASE DO NOT WRITE ABOVE THIS LINE

QTY.	CLASS	DESCRIPTION	PRICE	AMOUNT
		Inv. #		
		132674		
DATE		AUTHORIZATION	SUB TOTAL	
7/31/20		022020		
REFERENCE NO.		SERVER	TAX	
ID-FOLIO/CHECK NO./LIC. NO./STATE	REG./DEPT.	CLERK	TIP	MISC.
2201255			TOTAL	591.23

SALES SLIP ORIGINAL

Invoice Total	\$591.23
Payments	-\$591.23
Net Due	\$0.00



PAID

Hostwinds  
12101 Tukwila International Blvd  
Suite #320  
Seattle, Washington 98168

## Invoice #2136282

Invoice Date: 08/02/2020

Due Date: 08/16/2020

### Invoiced To

Oliver Page  
2171 E Francisco Blvd Ste K  
San Rafael, California, 94901  
United States

Description	Total
Addon (hwsrv-567174.hostwindsdns.com) - Cloud Backups (08/16/2020 - 08/15/2021)	\$12.00 USD
Addon (hwsrv-567175.hostwindsdns.com) - Cloud Backups (08/16/2020 - 08/15/2021)	\$12.00 USD
<b>Sub Total</b>	<b>\$24.00 USD</b>
<b>Credit</b>	<b>\$24.00 USD</b>
<b>Total</b>	<b>\$0.00 USD</b>

### Transactions

Transaction Date	Gateway	Transaction ID	Amount
No Related Transactions Found			
<b>Balance</b>			<b>\$0.00 USD</b>



PAID

Hostwinds  
12101 Tukwila International Blvd  
Suite #320  
Seattle, Washington 98168

## Invoice #2130010

Invoice Date: 07/31/2020

Due Date: 08/14/2020

### Invoiced To

Oliver Page  
2171 E Francisco Blvd Ste K  
San Rafael, California, 94901  
United States

Description	Total
Unmanaged SSD Cloud 6 - hwsrv-567174.hostwindsdns.com (08/14/2020 - 08/13/2021) Location: Seattle Operating System: Fedora 29 IP Addresses: 1 IP Address DDOS Protected IP Addresses: 0 DDOS Protected IPs C-Class IP Addresses: 0 C-Class IP Addresses	\$599.88 USD
Unmanaged SSD Cloud 6 - hwsrv-567175.hostwindsdns.com (08/14/2020 - 08/13/2021) Location: Seattle Operating System: Fedora 29 IP Addresses: 1 IP Address DDOS Protected IP Addresses: 0 DDOS Protected IPs C-Class IP Addresses: 0 C-Class IP Addresses	\$599.88 USD
Unmanaged SSD Cloud 1 - hwsrv-573038.hostwindsdns.com (08/14/2020 - 02/13/2021) Location: Seattle Operating System: Fedora 29 IP Addresses: 1 IP Address DDOS Protected IP Addresses: 0 DDOS Protected IPs C-Class IP Addresses: 0 C-Class IP Addresses	\$29.94 USD
<b>Sub Total</b>	<b>\$1229.70 USD</b>
<b>Credit</b>	<b>\$1229.70 USD</b>
<b>Total</b>	<b>\$0.00 USD</b>

### Transactions

Transaction Date	Gateway	Transaction ID	Amount
No Related Transactions Found			

<b>Balance</b>	<b>\$0.00 USD</b>
----------------	-------------------

PDF Generated on 08/10/2020



Invoice for Stetson Engineers Inc. Isotopic Support

INVOICE TO

**Stetson Engineers Inc**  
**Attn: Accounts Payable**  
**2171 East Francisco Blvd. Suite K**  
**San Rafael, CA 94901**

INVOICE NUMBER: CI-06-3888 / 10

DATE: 07/29/20

AMOUNT: \$10,640.93

TERMS: Due Upon Receipt

Contract/Grant/Agreement/Purchase Order <b>Stetson Engineers Inc. Contract # 2652 - 001</b> <b>Contract Dated 5/24/19</b>	Period Billed	
	From 6/1/2020	To 6/30/2020
Title: Stetson Engineers Inc. / Isotopic Support - Indian Wells Valley Groundwater Authority		
P.I.: Chapman, Jenny		
DRI Acct: AWD-06-00000523 / GR09067 RC0068 TAX ID #: 886000024		
Cost Elements/Services	Current	Cumulative

Stetson Engineers, Inc. - Isotopic Support - Indian Wells Valley Groundwater Authority

Salaries	10,640.93	38,230.92
Travel	0.00	0.00
Operating	0.00	0.00
<b>Totals</b>	<u>10,640.93</u>	<u>38,230.92</u>

**Total Amount Due This Invoice** 10,640.93

Budget Amount 117,956.00  
 Invoiced to Date 38,230.92  
 Budget Balance **79,725.08**

"I certify to the best of my ability that all expenditures reported are for appropriate purposes and in accordance with the provisions of the award documentation."

*Sherril Schmidt* 07/29/20

Sherril Schmidt, Sponsored Research Specialist Date

(775) 673-7404

Make Check Payable To: **Board of Regents**      Mail Check To: Desert Research Institute  
 Financial Services Office  
 2215 Raggio Parkway  
 Reno, Nevada 89512-1095

\* Please return Invoice Copy with Check \*





Jun-20

Stetson Engineers - Isotopic Support - IWVGA

Awd-06-523 / GR09067

2652 - 001

Position	Worker	Rate	Hours	Cost
Groundwater Modeler-SME	Karl Pohlmann	230.78	3.785319	873.58
Hydrogeologist-SME	Jenny Chapman	258.45	0.000000	0.00
Hourly Data Analyst	Austin Chapman	29.46	0.000000	0.00
Geochemist-SME	Jim Thomas	193.52	0.000000	0.00
Hydrologist	Chris Garner	117.95	27.541012	3,248.40
Hydrogeologist	Kevin Heintz	75.95	33.040410	2,509.32
Geologist	Steve Bacon	99.64	40.242804	4,009.63
Geochemist	Ron Hershey	184.51	0.000000	0.00
GIS Professional	Cheryl Collins	98.95	0.000000	0.00

**Total Salaries & Fringe**

**10,640.93**

# Project Accounting Summary

Account #: 1757778 Invoice #: 1744742949 Date: 07/31/2020

<b>PAC:</b>				
Owner Name	Conference	Date	Minutes	Conf Charge
Castaneda, Fatima	359166065	07/07/20	3	\$26.74
<b>Total Conferences:</b>	<b>1</b>		<b>3</b>	<b>\$26.74</b>

<b>PAC: 1126</b>				
Owner Name	Conference	Date	Minutes	Conf Charge
Sharoody, Ali	360095913	07/14/20	471	\$74.94
<b>Total Conferences:</b>	<b>1</b>		<b>471</b>	<b>\$74.94</b>

<b>PAC: 116801</b>				
Owner Name	Conference	Date	Minutes	Conf Charge
Castaneda, Fatima	360463360	07/16/20	162	\$27.29
<b>Total Conferences:</b>	<b>1</b>		<b>162</b>	<b>\$27.29</b>

<b>PAC: 1336</b>				
Owner Name	Conference	Date	Minutes	Conf Charge
Sharoody, Ali	359213868	07/07/20	355	\$56.51
<b>Total Conferences:</b>	<b>1</b>		<b>355</b>	<b>\$56.51</b>

<b>PAC: 2433</b>				
Owner Name	Conference	Date	Minutes	Conf Charge
Reich, Steve	360782262	07/20/20	238	\$37.90
<b>Total Conferences:</b>	<b>1</b>		<b>238</b>	<b>\$37.90</b>

<b>PAC: 253301</b>				
Owner Name	Conference	Date	Minutes	Conf Charge
Castaneda, Fatima	360775293	07/20/20	62	\$26.94
<b>Total Conferences:</b>	<b>1</b>		<b>62</b>	<b>\$26.94</b>

<b>PAC: 2628</b>				
Owner Name	Conference	Date	Minutes	Conf Charge
Reich, Steve	361125943	07/22/20	561	\$89.26
Krueger, Robyn	359172973	07/07/20	146	\$27.22
<b>Total Conferences:</b>	<b>2</b>		<b>707</b>	<b>\$116.48</b>

<b>PAC: 2652</b>				
Owner Name	Conference	Date	Minutes	Conf Charge
Castaneda, Fatima	359168797	07/07/20	161	\$27.31
Castaneda, Fatima	359149464	07/07/20	249	\$39.63
<b>Total Conferences:</b>	<b>2</b>		<b>410</b>	<b>\$66.94</b>

WestMart  
4990 Avenida Encinas  
Carlsbad, CA 92008

WESTMART  
L306904061001  
4990 AVENIDA ENCINAS  
CARLSBAD , CA  
92008  
07/28/2020 229833394  
12:27:52 PM

XXXX XXXX XXXX 4005  
Visa  
INVOICE 073995  
AUTH 584550

PUMP# 7  
Regular 15.716G  
PRICE/GAL \$3.259

FUEL TOTAL \$ 51.22

CREDIT \$ 51.22

=====  
Customer-activated Purchase/Capture  
Sequence Number 23085  
Swiped  
APPROVED 584550  
=====

Thank You!!!  
Please Come Again!!!

STARBUCKS Store #10429  
14136 US Hwy 395  
Adelanto, CA (760) 530-9252

-----  
CHK 779433  
07/28/2020 02:47 PM  
2902394 Drawer: 1 Reg: 3  
-----

**Drive Thru**

Order

Vt Vancrm Cold Brw 4.25

-----  
Subtotal \$4.25  
Total \$4.25  
**Change Due \$0.00**  
-----

Payments

Sbux Card 4.25  
XXXXXXXXXXXX0847

----- Check Closed -----  
07/28/2020 02:47 PM

SBUX Card x0847 New Balance: 13.29  
Card is registered.

Join our loyalty program  
Starbucks Rewards®  
Sign up for promotional emails  
Visit [Starbucks.com/rewards](https://www.starbucks.com/rewards)  
Or download our app  
At participating stores  
Some restrictions apply

8:15



Costco Anywhere Visa...4005

STATERBROS109  
RIDGECREST CA

\$ 6.60

Merchandise

Purchased On

Jul 28, 2020

Posted On

Jul 28, 2020

Cardmember Name

Nichole Weedman

Dispute Charge



**PAPA JOHN'S #4526**  
**RIDGECREST CA**

**\$ 11.28**

Restaurants

Purchased On

Jul 28, 2020

Posted On

Jul 28, 2020

Cardmember Name

Nichole Weedman

[Dispute Charge](#)

Give us feedback @ survey.walmart.com  
Thank you! ID #:7P9707KB47J

# Walmart

760-371-4974 Mgr: RYAN  
201 EAST BOWMAN ROAD  
RIDGECREST, CA 93555

ST# 01600	OP# 009051	TE# 51	TR# 01844	
078742096674	007874209667		2.88	X
CARRYBAG FEE	000000001101K		0.10	0
	SUBTOTAL		2.98	
TAX 1	8.250 %		0.24	
	TOTAL		3.22	
	VISA TEND		3.22	

VISA CREDIT \*\*\*\* \* 4005 I 1

APPROVAL # 29236D

REF # 1042000314

TRANS ID - 460211046983065

VALIDATION - 964B

PAYMENT SERVICE - E

AID A0000000031010

AAC 1B9362AB64CB76B6

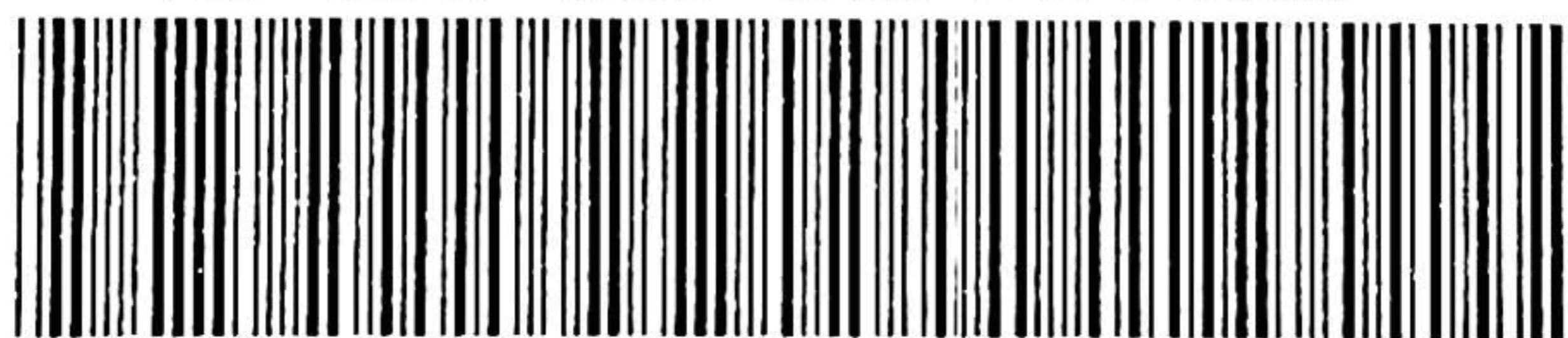
TERMINAL # SC010567

07/28/20 18:18:23

CHANGE DUE 0.00

# ITEMS SOLD 2

TC# 0880 4069 4618 8484 6623



Low Prices You Can Trust. Every Day.

07/28/20 18:18:23

\*\*\*CUSTOMER COPY\*\*\*

China Lake Inn

400 S. China Lake Blvd.  
Ridgecrest, CA 93555



(760) 371-2300

bwridgecrestreservations@gmail.com

ASNN99-BAFNF-37L-N97PLN9-99LSF

07/29/2020 03:23 AM

**Loyalty Club:** 600663-75913-81488 PLATINUM

**Room #** 228-A

**Conf #** 938940182-01

**Registered To:**

**Arrival** 07/28/20

**Departure** 07/29/20

WEEDMAN, NICHOLE  
4982 WILDWOOD DRIVE  
OCEANSIDE, CA 92057

**Room Type** QQ -2 QUEENS N/S

**Guests** 1 / 0

**Payment** Visa/Master

(217) 853-5318

**Acct** XXXX-XXXX-XXXX-4005

Posting Date	Oper	AcctCode	Description	From	Reference	Amount
07/28/20	CF	RC	ROOM CHARGE			\$130.49
07/28/20	CF	9	ROOM TAX			\$13.05
07/28/20	CF	97	Tourism Improv. Assessment Tax			\$3.91
07/28/20	CF	98	California Tourism Fee			\$0.25
07/29/20	CF	VS	PAYMENT VISA/MC		4005 - 86725D	\$147.70-
		TC: 3BAD0AB691A9E5AD		TVR: 8080008000	AID: A0000000031010	
<b>Balance Due</b>						<b>\$0.00</b>

THE UNDERSIGNED GUEST AGREES TO PAY THE AMOUNT INDICATED ON THE BALANCE DUE PORTION OF THIS INVOICE. IF THE CHARGES ARE TO BE BILLED TO A THIRD PARTY, THE UNDERSIGNED AGREES TO BE PERSONALLY LIABLE FOR PAYMENT OF THE CHARGES IN THE EVENT THAT THE INDICATED THIRD PARTY, PERSON, COMPANY OR ASSOCIATION FAILS TO PAY FOR ANY PART OR THE FULL AMOUNT OF SUCH CHARGES.

IF YOU SMOKE IN OUR SMOKE FREE ROOMS, YOU WILL BE CHARGED A \$150.00 CLEANING FEE.

\_\_\_\_\_  
Signature



**FASTRIP FOOD STORE  
345 SO. CHINA LAKE  
RIDGECREST, CA**

760-375-9401

894 FASTRIP FOOD 54292980037943-228534-2  
345 S CHINA RIDGECREST CA  
760-375-9401 93555

Descr.	qty	amount
<CUSTOMER COPY>		
SMART WATER - GL	1	1.89
CRV5		0.05
SMART WATER - GL	1	1.89
CRV5		0.05
Sub Total		3.88
Tax		0.00
<b>TOTAL</b>		<b>3.88</b>
CREDIT \$		3.88

\*\*\*\*\*

CARD TYPE: VISA  
ACCT NUMBER: \*\*\*\*\*4005  
EXP. DATE:           TRANS TYPE: SALE  
SEQ# 6438 REFERENCE# 021151022900380  
AUTH# 37500D APPROVED           0000  
BATCH# 20200729068

	Tran Amt	Rem. Balance
Amount	\$ 3.88	\$ 0.00

\*\*\*\*\*

**THANKS, COME AGAIN**  
REG# 0002 CSH# 004 DR# 01 TRAN# 24243  
07/29/20 07:26:01           ST# AB123



**How doers  
get more done.™**

TRAVIS\_K\_ULBERG@HOMEDEPOT.COM  
575 N CHINALAKE, RIDGECREST, CA 93555

1089 00062 42416 07/29/20 10:24 AM  
SALE SELF CHECKOUT

076174665673 SCREWDRIVER <A> 15.97  
DEWALT MAX FIT MULTI-BIT RATCHET SD  
648738210188 2PCMICROSDST <A> 2.97  
HUSKY 2PC MICRO SCREWDRIVER SET

SUBTOTAL 18.94  
SALES TAX 1.56  
TOTAL \$20.50

XXXXXXXXXXXX4005 VISA USD\$ 20.50  
AUTH CODE 94112D/7624265 TA  
Chip Read  
AID A0000000031010 VISA CREDIT

PRO XTRA MEMBER STATEMENT

PRO XTRA ###-###-0701 SUMMARY  
THIS RECEIPT PO/JOB NAME: GEOLOGIST

PRO XTRA SPEND THIS VISIT: \$18.94

2020 PRO XTRA SPEND 07/28:

As of 07/29/2020 your Paint Rewards level is Member; Spend 2000.00 more in qualifying paint purchases to earn Bronze (10.0% off) on select paint items.

This purchase qualifies for FUEL DISCOUNTS and 60 DAYS TO PAY on The Home Depot Commercial Credit Card. Ask an Associate to learn more or go to [homedepot.com/financeoptions](http://homedepot.com/financeoptions).



RETURN POLICY DEFINITIONS  
POLICY ID DAYS POLICY EXPIRES ON  
A 1 180 01/25/2021

Due to COVID-19, we have extended our returns policy for most items. Please see [homedepot.com](http://homedepot.com) for details.

1617 N CHINA LAKE  
BLVD RIDGECREST CA  
93555

THE BARN, 00359234  
1617 CHINA LAKE BLVD  
RIDGECREST, CA

07/29/2020 755340022  
01:57:13 PM

XXXXXXXXXXXX4005  
VISA  
INVOICE E/3496671  
AUTH 95839D

REPRINT \*\*\* REPRINT  
PUMP# 2  
UNLEAD REG CR13.259G  
PRICE/GAL \$3.499

FUEL TOTAL \$ 46.39

-----  
Total = \$ 46.39  
REPRINT \*\*\* REPRINT

CREDIT \$ 46.39  
Swiped

Get rewarded on  
every fill-up at  
Chevron with a  
Techron Advantage  
card. See app  
for details.

THE BARN  
1617 CHINA LAKE BLVD  
RIDGECREST CA  
00359234

07/29/2020 1:59:25 PM  
Register: 2 Trans #: 5336 Op ID: 1  
Your cashier: camille

Gatorade Code Blue	\$2.39	99
Crv 10 Cent Tax	\$0.10	101
Glaceau Smart Water 1 L	\$2.59	99
Crv 10 Cent No Tax	\$0.10	99

-----  
Subtotal = \$5.18

Tax = \$0.01

-----  
Total = \$5.19

Change Due = \$0.00

Credit \$5.19

-----  
XXXXXXXXXXXX4005 VISA  
INVOICE: E/3496673  
AUTH 93779D  
Chip Read  
VISA CREDIT  
Mode: Issuer  
AID: A0000000031010  
TVR: 8000008000  
IAD: 06010A03A00000  
TSI: 6800  
ARC: 00

Get rewarded on  
every fill-up at  
Chevron with a  
Techron Advantage  
card. See app  
for details.

I agree to pay the above total amount  
according to card issuer agreement.

Merchant Copy



# 12943 - Temecula

30679 Temecula Pkwy  
Temecula, CA 92592  
Phone 951-587-0461

7/29/2020

7:00:10 PM

Order Id: AABQFJJG AJKD

297 - Drive Thru

Employee: OT

-----  
297  
-----

1 CHICKEN SANDWICH COMBO.

1 Classic Chicken Sandwich CM \$6.99

1 RG FRIES

1 SM BEV

SM DR PEPPER \$0.00

Sub Total \$6.99

Sales Tax \$0.61

Order Total \$7.60

Visa \$7.60

Card#: \*\*\*\*\*4005

Authorization: 22724D

--> Order Closed <--

Thank You!

Now Hiring. Visit [www.amiriancareers.com](http://www.amiriancareers.com)  
to apply today.



Nichole Weedman <nrweedman1992@gmail.com>

# ENTERPRISE Rental Agreement 9STMTJ

1 message

DoNotReply@erac.com <DoNotReply@erac.com>  
To: NRWEEDMAN1992@gmail.com

Thu, Jul 30, 2020 at 9:14 AM



RA #: 9STMTJ

Renter: WEEDMAN,NICHOLE

Dates & Times	Location
<b>Pickup</b> Jul 28, 2020 12:10 PM	1060 AUTO CENTER CT STE M CARLSBAD, CA 92008-4321 7609311111
<b>Return</b> Jul 30, 2020 9:13 AM	1060 AUTO CENTER CT STE M CARLSBAD, CA 92008-4321 7609311111

### Vehicle

Make/Model: NISN/FROC  
Color: GRAY DK  
Mileage: 493  
Fuel Out: Empty  
License: 17472U2  
Unit #: 7T11FT

Fuel In: 3/8  
Vehicle #: KN793810

Charges	Price/Unit	Total
TIME & DISTANCE 07/28 - 07/30	2.0 @ \$31.78/DAY	\$63.56
VEHICLE LICENSE RECOVERY FEE	2.0 @ \$1.82/DAY	\$3.64
SALES TAX	7.7500%	\$4.92

### Optional Products And Protections Accepted

DAMAGE WAIVER	2.0 @ \$26.99/DAY	\$53.98
---------------	-------------------	---------

**Total Charges: \$126.10**

Charge To: VISA xxxx4005

2020-07-30 09:14:02

1617 N CHINA LAKE  
BLVD RIDGECREST CA  
93555

THE BARN, 00359234  
1617 CHINA LAKE BLVD  
RIDGECREST, CA

07/01/2020 755333336  
07:03:10 AM

XXXXXXXXXXXX2171  
DISCOVER  
INVOICE E/3488439  
AUTH 00137R

PUMP# 6  
UNLEAD REG CR19.458G  
PRICE/GAL \$3.299

FUEL TOTAL \$ 64.19

-----  
Total = \$ 64.19

CREDIT \$ 64.19  
Swiped

Get rewarded on  
every fill-up at  
Chevron with a  
Techron Advantage  
card. See app  
for details.





HAMPTON INN & SUITES - RIDGECREST  
 104 EAST SYDNOR AVE.  
 RIDGECREST, CA 93555  
 United States of America  
 TELEPHONE 760-446-1968 • FAX 760-446-1541  
 Reservations  
 www.hilton.com or 1 800 HILTONS

WEEDMAN, NICHOLE  
  
 2319 PASEO DE LAURA  
 APT 18  
 OCEANSIDE CA 92056  
 UNITED STATES OF AMERICA

Room No: 236/KXTD  
 Arrival Date: 6/29/2020 2:22:00 PM  
 Departure Date: 7/2/2020 6:29:00 AM  
 Adult/Child: 1/0  
 Cashier ID: ANTBEN  
 Room Rate: 151.05  
 AL:  
 HH # 648439392 BLUE  
 VAT #  
 Folio No/Che 190927 A

Confirmation Number: 81455456

HAMPTON INN & SUITES - RIDGECREST 7/2/2020 6:28:00 AM

DATE	REF NO	DESCRIPTION	CHARGES
6/29/2020	635365	GUEST ROOM	\$151.05
6/29/2020	635365	ROOM OCCUPANCY - TAX	\$15.11
6/29/2020	635365	RIDGECREST TOURISM IMPROVMENT	\$4.53
6/29/2020	635365	CA TOURISM ASSESSMENT	\$0.29
6/30/2020	635476	GUEST ROOM	\$151.05
6/30/2020	635476	ROOM OCCUPANCY - TAX	\$15.11
6/30/2020	635476	RIDGECREST TOURISM IMPROVMENT	\$4.53
6/30/2020	635476	CA TOURISM ASSESSMENT	\$0.29
7/1/2020	635570	GUEST ROOM	\$151.05
7/1/2020	635570	ROOM OCCUPANCY - TAX	\$15.11
7/1/2020	635570	RIDGECREST TOURISM IMPROVMENT	\$4.53
7/1/2020	635570	CA TOURISM ASSESSMENT	\$0.29
7/2/2020	635610	DS *2171	(\$512.94)
**BALANCE**			\$0.00

Hilton Honors(R) stays are posted within 72 hours of checkout. To check your earnings or book your next stay at more than 5,700 hotels and resorts in 113 countries, please visit [Honors.com](https://www.hilton.com/honors)

CREDIT CARD DETAIL

APPR CODE	02923R	MERCHANT ID	00106970999
CARD NUMBER	DS *2171	EXP DATE	09/21
TRANSACTION ID	635610	TRANS TYPE	Sale

Ticket # 1203714

7/2/20 10:41 am

Reg: 2 Store: 1000 Clerk: HNV

Beanster's Espresso  
1601 Triangle Drive  
Ridgecrest, CA 93555  
760-446-2320

<u>Quantity</u>	<u>Price</u>	<u>Extended Price</u>
-----------------	--------------	-----------------------

<b>Mocha Large</b>		
--------------------	--	--

1	\$5.45	\$5.45
---	--------	--------

Taxable Total:		\$0.00
----------------	--	--------

Non-Taxable Total:		\$5.45
--------------------	--	--------

Tax Amount:		\$0.00
-------------	--	--------

<b>Order Grand Total:</b>		<b>\$5.45</b>
---------------------------	--	---------------

Cash Tendered:		\$20.00
----------------	--	---------

<b>Change Due:</b>		<b>\$14.55</b>
--------------------	--	----------------

Thank You, Have a great day!!

ARCO AMPM  
12078 THREE FLAGS COURT  
OAK HILLS, CA 92344

07/02/2020

12:32:08

CREDIT CARD  
DISCVR SALE

Card #	XXXXXXXXXXXX2171
Chip Card:	Discover Credit
AID:	A0000001523010
SEQ #:	8
Batch #:	162
INVOICE	9
Approval Code:	00239R
Entry Method:	Chip Read
Mode:	Issuer

SALE AMOUNT	\$8.53
-------------	--------

CUSTOMER COPY

WELCOME  
ARCO AMPM #42537  
12078 THREE FLAGS C  
HESPERIA CA

ARCO42537001  
ARCO 42537  
12078 THREE FLAGS  
HESPERIA CA

DATE 07/02/20 12:33  
TRAN# 9103411  
PUMP# 10  
SERVICE LEVEL: SELF  
PRODUCT: REGUALR  
GALLONS: 13.543  
PRICE/G: \$ 2.799  
FUEL SALE \$ 37.91  
debitfee \$0.35  
DEBIT \$38.26

DEBIT  
Payment from  
Primary Account  
XXXXXXXXXXXX3416  
Auth #: 053415  
Resp Code: 000  
Stan: 05733512614  
Reference: 50560

SITE ID: ARCO4253700  
1

THANK YOU  
FOR CHOOSING ARCO  
COMMENTS?  
CALL 1-800-322-2726

WestMart  
4990 Avenida Encinas  
Carlsbad, CA 92008

WESTMART  
L306904061001  
4990 AVENIDA ENCINAS  
CARLSBAD , CA  
92008  
07/02/2020 229816177  
03:12:33 PM

XXXX XXXX XXXX 2171  
Discover  
INVOICE 058977  
AUTH 00207R

PUMP# 13  
Regular 6.531G  
PRICE/GAL \$3.139

FUEL TOTAL \$ 20.50

CREDIT \$ 20.50

=====  
Customer-activated Purchase/Capture  
Sequence Number 07972  
Swiped  
APPROVED 00207R  
=====

Thank You!!!  
Please Come Again!!!



Nichole Weedman &lt;nrweedman1992@gmail.com&gt;

---

**ENTERPRISE Rental Agreement 9J7KZ3**


---

**DoNotReply@erac.com** <DoNotReply@erac.com>  
 To: NRWEEDMAN1992@gmail.com

Thu, Jul 2, 2020 at 3:28 PM



RA #: 9J7KZ3

Renter: WEEDMAN,NICHOLE

Dates & Times	Location
<b>Pickup</b> Jun 29, 2020 8:30 AM	1060 AUTO CENTER CT STE M CARLSBAD, CA 92008-4321 7609311111
<b>Return</b> Jul 02, 2020 3:28 PM	1060 AUTO CENTER CT STE M CARLSBAD, CA 92008-4321 7609311111

**Vehicle**

Make/Model: RAM/C15C

Color: SILVER

Mileage: 731

Fuel Out: Full

Fuel In: Full

License: 29819V2

Unit #: 7SNB62

Vehicle #: KS662899

Charges	Price/Unit	Total
TIME & DISTANCE 06/29 - 07/02	4.0 @ \$34.43/DAY	\$137.71
VEHICLE LICENSE RECOVERY FEE	4.0 @ \$2.71/DAY	\$10.84
SALES TAX	7.7500%	\$10.67

**Optional Products And Protections Accepted**

DAMAGE WAIVER	4.0 @ \$26.99/DAY	\$107.96
<b>Total Charges:</b>		<b>\$267.18</b>

Charge To: DISCOVER xxxx2171

2020-07-02 15:28:51

H&S 08, 00205615  
2191 E Vista Way  
Oceanside, ca

07/06/2020 548521320  
08:13:59 AM

XXXXXXXXXXXX4005  
VISA  
INVOICE E/1507671  
AUTH 45369D

PUMP# 1  
UNLEAD REG 14.760G  
PRICE/GAL \$3.199

FUEL TOTAL \$ 47.22

-----  
Total = \$ 47.22

CREDIT \$ 47.22

Chip Read  
VISA CREDIT  
Mode: Issuer  
AID: A0000000031010

Get rewarded on  
every fill-up at  
Chevron with a  
Techron Advantage  
card. See app  
for details.

I agree to pay the  
above total amount  
according to card  
issuer agreement.

Customer Copy

Chevron Stations Inc  
14217 Highway 395  
Victorville CA  
00373173

07/06/2020 10:12:33 AM  
Register: 1 Trans #: 3281 Op ID: 92389  
Your cashier: CHRISTINA

COKE ZERO 20PL, Each \$2.29 1  
(049000040869)  
JUL-AUG20 ALL200Z 2/\$3.49 \$-0.55

\$0.35 DEP T 01 (23) \$0.05 1  
DR PPR 20 PL, Each \$2.29 1  
(078000082401)  
JUL-AUG20 ALL200Z 2/\$3.49 \$-0.54

\$0.35 DEP T 01 (23) \$0.05 1

Subtotal = \$3.59  
SALES TA = \$0.28

Total = \$3.87

Change Due = \$0.00

Credit \$3.87

XXXXXXXXXXXX4005 VISA  
INVOICE: E/7337500  
AUTH 453790

SALE TRANSACTION

Chip Read  
VISA CREDIT  
Mode: Issuer  
AID: A0000000031010



\*\* PURCHASE \*\*

Panda Express #1622  
Victorville, CA  
(760)843-5845

7/6/2020 10:17:55 AM -Drive Thru-  
Order: 456981 Server: Stephanie B

1 PANDA BOWL 6.80  
CHOW MEIN-1/2  
CHOW MEIN-1/2  
ORANGE CKN

SubTotal 6.80  
TAX 0.53  
Total 7.33

Visa 7.33

Acct:XXXXXXXX4005  
AuthCode:12477D  
\*Card details below

-----  
EMV: Chip Read  
APL: VISA CREDIT  
AID: A0000000031010  
-----

\*\*\*\*\*

\* FREE ENTREE ITEM! \*

\* Tell us about your visit and \*  
\* receive a free entree item on us. \*  
\* See back for details. \*

\* Survey Code: \*  
\* 2600-5698-4221-0167-0013-05 \*  
\*\*\*\*\*

Questions or Comments?  
[pandaexpress.com/connect](http://pandaexpress.com/connect)

See back of receipt for your chance  
to win \$1000 ID #:7P94Q61JKC1D

# Walmart

760-493-3047 Mgr:JOSE  
12234 PALMDALE ROAD  
VICTORVILLE CA 92392

ST# 04392	OP# 009049	TE# 49	TR# 02548
EQUATE IBU	068113169937H		1.98 X
CT SPORT SP	004110000672H		7.97 X
CI XTRA TSTY	002410010443 F		2.88 N
CI XTRA TSTY	002410010443 F		2.88 N
078742096667	007874209666		2.88 X
GATORADE	005200004325 F		0.88 N
CRV FEE	068113176539 F		0.10 N
GATORADE	005200004325 F		0.88 N
CRV FEE	068113176539 F		0.10 N
GATORADE	005200004325 F		0.88 N
CRV FEE	068113176539 F		0.10 N
GLACEAU	078616200281 F		7.97 N
CRV FEE	068113173983 F		0.60 N
CARRYBAG FEE	000000001101K		0.10 0
	SUBTOTAL		30.20
TAX 1	7.750 %		0.99
	TOTAL		31.19
	VISA TEND		31.19

VISA CREDIT \*\*\*\* \* 4005 I 1  
APPROVAL # 60476D  
REF # 018800189010  
TRANS ID - 300188640150529  
VALIDATION - 6M73  
PAYMENT SERVICE - E  
AID A0000000031010  
AAC BC4B548BE5E0D340  
TERMINAL # SC010185

07/06/20 10:47:00

CHANGE DUE 0.00

# ITEMS SOLD 14

TC# 5549 6250 8626 7998 9284



Low Prices You Can Trust. Every Day.

07/06/20 10:47:00

\*\*\*CUSTOMER COPY\*\*\*

Ticket # 1204343

7/6/20 3:08 pm

Reg: 2 Store: 1000 Clerk: SLP

Beanster's Espresso  
1601 Triangle Drive  
Ridgecrest, CA 93555  
760-446-2320

**Quantity      Price      Extended Price**

**Mocha Large**

1                      \$5.45                      \$5.45

Taxable Total:                      \$0.00

Non-Taxable Total:                      \$5.45

Tax Amount:                      \$0.00

**Order Grand Total:                      \$5.45**

Credit Card Tendered:                      \$5.45

**Change Due:                      \$0.00**

.MERCHANT ID: \*\*\*\*\*7751

.CLERK ID: SLP

.                      SALE

.VISA                      \*\*\*\*\*4005

.ENTRY METHOD: CHIP FALLBACK/SWIPED

.DATE: 07/06/2020 TIME: 15:08:20

.INVOICE: 431396

.REFERENCE: 0053

.AUTH CODE: 68590D

.AMOUNT                      USD\$ 5.45

.TOTAL                      USD\$ 5.45

.                      APPROVED - THANK YOU

.I AGREE TO PAY THE ABOVE TOTAL AMOUNT  
.ACCORDING TO CARD ISSUER AGREEMENT  
(MERCHANT AGREEMENT IF CREDIT VOUCHER)

Tip 15% 0.82 18% 0.98 20% 1.09

Tip \_\_\_\_\_

Total \_\_\_\_\_

X \_\_\_\_\_  
Cardholder Signature



More saving.  
More doing.<sup>SM</sup>

TRAVIS\_K\_ULBERG@HOMEDEPOT.COM  
575 N CHINALAKE, RIDGECREST, CA 93555

1089 00051 51261 07/06/20 03:22 PM  
SALE SELF CHECKOUT

030699443840 QUICK LINK <A> 4.98  
QUICK LINK 1/8", STNLS STEEL, 3 PK

SUBTOTAL 4.98  
SALES TAX 0.41  
TOTAL \$5.39

XXXXXXXXXXXX4005 VISA

USD\$ 5.39

AUTH CODE 48227D/0512330

TA

Chip Read

AID A0000000031010

VISA CREDIT



1089 51 51261 07/06/2020 2430

RETURN POLICY DEFINITIONS

POLICY ID	DAYS	POLICY EXPIRES ON
A 1	180	01/02/2021

Due to COVID-19, we have extended our returns policy for most items. Please see homedepot.com for details.

\*\*\*\*\*

**DID WE NAIL IT?**

Take a short survey for a chance TO WIN A \$5,000 HOME DEPOT GIFT CARD

Opine en español

[www.homedepot.com/survey](http://www.homedepot.com/survey)

User ID: H89 103900 102862  
PASSWORD: 20356 102811

Entries must be completed within 14 days of purchase. Entrants must be 18 or older to enter. See complete rules on website. No purchase necessary.



Store 331 Dir John McDonough  
 Main:(760) 384-4015 Rx:(760) 384-4020  
 927 South China Lake Boulevard  
 RIDGECREST CA 93555

**DELI**

D&W SANDWICH SAN	4.99 S
GREEK PASTA SALAD	3.99 S
TAX	0.00
**** BALANCE	8.98

-----  
 Credit Purchase 07/06/20 17:46  
 CARD # \*\*\*\*\*4005  
 REF: 56001674222 AUTH: 0020842D

PAYMENT AMOUNT 8.98

-----  
 AL VISA CREDIT  
 AID A0000000031010  
 TVR 0000000000  
 TSI 0000

Visa 8.98

CHANGE 0.00  
 TOTAL NUMBER OF ITEMS SOLD = 2  
 07/06/20 17:46 331 5 303 8611

-----  
 YOUR CASHIER TODAY WAS Juan

-----  
 HOW WAS YOUR SHOPPING EXPERIENCE?  
 WE VALUE YOUR FEEDBACK!  
 ENTER TO WIN A \$100.00 GIFT CARD  
 GO TO: [www.albertsons.com/survey](http://www.albertsons.com/survey)  
 ENTER THE SURVEY CODE BELOW:  
 33107/0617:466/303



00033100503032007061746

Thank you for shopping Albertsons  
 For just for U or Rewards questions  
 call 877-276-9637 or [Albertsons.com](http://Albertsons.com)

1617 N CHINA LAKE  
BLVD RIDGECREST CA  
93555

THE BARN, 00359234  
1617 CHINA LAKE BLVD  
RIDGECREST, CA

07/07/2020 755334705  
09:03:03 AM

XXXXXXXXXXXX4005  
VISA  
INVOICE E/3490075  
AUTH 82504D

PUMP# 6  
UNLEAD REG CR11.355G  
PRICE/GAL \$3.299

FUEL TOTAL \$ 37.46

-----  
Total = \$ 37.46

CREDIT \$ 37.46  
Swiped

Get rewarded on  
every fill-up at  
Chevron with a  
Techron Advantage  
card. See app  
for details.

STARBUCKS Store #6959  
1245 N. China Lake Blvd.  
Ridgecrest, CA (760) 375-9202

CHK 690287  
07/07/2020 09:12 AM  
2585509 Drawer: 2 Reg: 3

**Drive Thru**

Order

Vt Vancrm Cold Brw 4.25

Subtotal \$4.25

Total \$4.25

**Change Due \$0.00**

Payments

Sbux Card 4.25  
XXXXXXXXXXXX0847

----- Check Closed -----

07/07/2020 09:12 AM

SBUX Card x0847 New Balance: 12.24  
Card is registered.

Join our loyalty program  
Starbucks Rewards®  
Sign up for promotional emails  
Visit Starbucks.com/rewards  
Or download our app  
At participating stores  
Some restrictions apply



HAMPTON INN & SUITES - RIDGECREST  
 104 EAST SYDNOR AVE.  
 RIDGECREST, CA 93555  
 United States of America  
 TELEPHONE 760-446-1968 • FAX 760-446-1541  
 Reservations  
 www.hilton.com or 1 800 HILTONS

WEEDMAN, NICHOLE  
  
 2319 PASEO DE LAURA  
 APT 18  
 OCEANSIDE CA 92056  
 UNITED STATES OF AMERICA

Room No: 341/KXTO  
 Arrival Date: 7/6/2020 3:34:00 PM  
 Departure Date: 7/7/2020  
 Adult/Child: 1/0  
 Cashier ID: ANTBEN  
 Room Rate: 151.05  
 AL:  
 HH # 648439392 BLUE  
 VAT #  
 Folio No/Che 191251 A

Confirmation Number: 81010470

HAMPTON INN & SUITES - RIDGECREST 7/6/2020 3:08:00 AM

DATE	REF NO	DESCRIPTION	CHARGES
7/6/2020	636072	GUEST ROOM	\$151.05
7/6/2020	636072	ROOM OCCUPANCY - TAX	\$15.11
7/6/2020	636072	RIDGECREST TOURISM IMPROVMENT	\$4.53
7/6/2020	636072	CA TOURISM ASSESSMENT	\$0.29
WILL BE SETTLED TO VS*4005			\$170.98
EFFECTIVE BALANCE OF			\$0.00

Hilton Honors(R) stays are posted within 72 hours of checkout. To check your earnings or book your next stay at more than 5,700 hotels and resorts in 113 countries, please visit Honors.com





Nichole Weedman &lt;nrweedman1992@gmail.com&gt;

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**ENTERPRISE Rental Agreement 9L33DT**


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DoNotReply@erac.com <DoNotReply@erac.com>  
 To: NRWEEDMAN1992@gmail.com

Tue, Jul 7, 2020 at 2:58 PM



RA #: 9L33DT

Renter: WEEDMAN,NICHOLE

Dates & Times	Location
<b>Pickup</b> Jul 06, 2020 7:28 AM	1060 AUTO CENTER CT STE M CARLSBAD, CA 92008-4321 7609311111
<b>Return</b> Jul 07, 2020 2:56 PM	1060 AUTO CENTER CT STE M CARLSBAD, CA 92008-4321 7609311111

**Vehicle**

Make/Model: TOYO/TACC  
 Color: GRAY LT  
 Mileage: 488  
 Fuel Out: 1/4  
 License: 28571S2  
 Unit #: 7SDYXT

Fuel In: 7/16

Vehicle #: KM102288

Charges	Price/Unit	Total
TIME & DISTANCE 07/06 - 07/07	2.0 @ \$31.78/DAY	\$63.56
VEHICLE LICENSE RECOVERY FEE	2.0 @ \$1.82/DAY	\$3.64
SALES TAX	7.7500%	\$4.92

**Optional Products And Protections Accepted**

DAMAGE WAIVER	2.0 @ \$26.99/DAY	\$53.98
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**Total Charges: \$126.10**

Charge To: VISA xxxx4005

2020-07-07 14:58:09

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CAPITOL  
CORE  
GROUP

**Capitol Core Group, Inc.**  
205 Cartwheel Bend (Operations Dept.)  
Austin, TX 78738 US  
949.274.9605  
operations@capitolcore.com  
www.capitolcore.com

**BILL TO**

Indian Wells Valley Groundwater  
Authority  
500 West Ridgecrest Blvd.  
Ridgecrest, California 93555  
USA

**INVOICE 2020-043**

**DATE** 08/03/2020 **TERMS** Net 45

**DUE DATE** 09/17/2020

DATE	ACCOUNT SUMMARY	AMOUNT
07/01/2020	Balance Forward	8,912.50
	Other payments and credits after 07/01/2020 through 08/02/2020	0.00
08/03/2020	Other invoices from this date	0.00
	New charges (details below)	9,631.25
	<b>Total Amount Due</b>	<b>18,543.75</b>

ACTIVITY	HOURS	RATE	AMOUNT
<b>Charges</b>			
Task 2 -- Transfer Partners			
Total Task 2 = \$0.00			
Task 3 -- Find and Secure Funding Sources			
<b>Government Relations:Federal Legislative Affairs</b>	1	150.00	150.00
Direct Advocacy: Follow-up with Rep. Crow (D-CO) on DOD Waters to NDAA Amendments (Newman)			
<b>Government Relations:Federal Legislative Affairs</b>	1.75	150.00	262.50
Direct Advocacy: Analysis of FY 2021 Energy and Water Development Act/Interior and Related Agencies Act Water Provisions (Newman)			
<b>Government Relations:Federal Legislative Affairs</b>	5.50	150.00	825.00
Direct Advocacy: FY2021 National Defense Authorization Act -- Rep. Crow, Rep. Garamendi, House Armed Services Committee Staff and Chairman Smith (Newman)			
<b>Government Relations:Federal Legislative Affairs</b>	3	150.00	450.00
Direct Advocacy: FY2021 National Defense Authorization Act (Senate) -- Senate Armed Services Committee staff, Chairman Inhofe (Newman)			
<b>Government Relations:Federal Legislative Affairs</b>	3	150.00	450.00
Direct Advocacy: Follow-up w/ Senator Harris' office, update water matrix (side-by-side for client), and follow-up w/ Rep. Crow (Newman)			
<b>Government Relations:Federal Legislative Affairs</b>	2	225.00	450.00
Direct Advocacy: DOD WATERS Act, calls with Rep. Crow (D-CO) and NDAA amendment analysis (Simonetti)			

ACTIVITY	HOURS	RATE	AMOUNT
<b>Government Relations:Federal Legislative Affairs</b> Direct Advocacy: NDAA Amendment Preparation and background information development (Simonetti)	2.50	225.00	562.50
<b>Government Relations:Federal Legislative Affairs</b> Direct Advocacy: NDAA Meetings with Representative Garamendi (D-CA) and House Armed Services: Subcommittee on Readiness staff (Simonetti)	0.75	225.00	168.75
<b>Government Relations:Federal Legislative Affairs</b> Direct Advocacy: Conf. Call Senator Feinstein (D-CA), follow-up and emailed questions (Simonetti)	1.50	225.00	337.50
<b>Government Relations:Federal Legislative Affairs</b> Direct Advocacy: NDAA Briefing and S. 4188 analysis, conf. call/discussion with Senator Harris (D-CA) (Simonetti)	2	225.00	450.00
<b>Government Relations:Federal Legislative Affairs</b> Direct Advocacy: NDAA Conforming Amendments and re-draft of advocacy materials (Simonetti)	2.50	225.00	562.50
<b>Government Relations:Federal Legislative Affairs</b> Direct Advocacy: NDAA Amendment Rep. Cook (R-CA) meetings, follow-up and briefings (Simonetti)	1	225.00	225.00
<b>Government Relations:Federal Legislative Affairs</b> Direct Advocacy: NDAA Amendments meetings/calls with Rep. McCarthy's staff, follow-up w/ House Armed Services (Simonetti)	2.25	200.00	450.00
<b>Government Relations:Federal Legislative Affairs</b> Direct Advocacy: Briefing Documents development, bill analysis and update matrix (Simonetti)	2	225.00	450.00
<b>Government Relations:Federal Legislative Affairs</b> Direct Advocacy: Client call, NDAA strategy preparation and amendment preparation, call w/ Rep. Crow's office and white paper preparation (McKinney)	3.50	250.00	875.00
<b>Government Relations:Federal Legislative Affairs</b> Direct Advocacy: House Armed Service Call, Document Preparation and strategic counsel, and House NDAA lobbying w/ Rep. Garamendi's office (McKinney)	3	250.00	750.00
<b>Government Relations:Federal Legislative Affairs</b> Direct Advocacy: Senator Harris' Office, Senator Feinstein's office, Senate Armed Service Committee staff, House Armed Services Chairman Smith follow-up, Rep. Garamendi's office follow-up and Redraft of White Paper, Redraft of Amendment, and preparation of talking points for Chairman Gleason -- FY2021 National Defense Authorization Act (for Conference Committee) (McKinney)	5	250.00	1,250.00
Total Task 3 = \$8,668.75			
Task 4 -- Client Reporting and Board Meetings			
<b>Government Relations:Public Affairs</b> Reporting and Client Calls (McKinney)	2.50	250.00	625.00
<b>Government Relations:Public Affairs</b> Reporting: Internal memorandum to IWVGA and board preparation (Simonetti)	1.50	225.00	337.50
Total Task 4 = \$962.50			
Thank you for your business. Please make checks payable to Capitol Core Group, Inc.	TOTAL OF NEW CHARGES		9,631.25

TOTAL DUE

**\$18,543.75**

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**ACWA**

980 9th Street, Suite 1000  
 Sacramento, CA 95814  
 Ph: 916-441-4545

## Sales Invoice

Invoice # : INV008868  
 Invoice Date : 07/21/2020  
 Due Date : 08/20/2020

**Bill to :**  
**Indian Wells Valley Groundwater Authority**  
 500 W. Ridgecrest Blvd  
 Ridgecrest, CA 93555  
 United States

**Ship to :**  
**Indian Wells Valley Groundwater Authority**  
 500 W. Ridgecrest Blvd  
 Ridgecrest, CA 93555  
 United States

Reference # : Don Zdeba

Terms : Net 30

Item	Description	Unit	Quantity	Unit Price	Amount
2000	Advertisement General Manager	Each	1	\$475.00	\$475.00
SUBTOTAL					\$475.00
<b>TOTAL</b>					<b>\$475.00</b>

Job Posting

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## IWVGA ADMINISTRATIVE OFFICE

*STAFF REPORT*

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**TO:** IWVGA Board Members **DATE:** August 20, 2020

**FROM:** IWVGA Staff

**SUBJECT:** **Agenda Item No. 7 – Amendment to the Agreement Between the IWV Groundwater Authority and IWV Water District**

### **DISCUSSION**

At the March 21, 2019 Groundwater Authority (“GA”) Board meeting, the Board approved an agreement with Capitol Core Group (“Capitol Core”) for services related to identifying potential sources for an imported water supply as well as identify potential funding sources for the infrastructure required to bring imported water to the IWV basin. Identifying possible sources for an imported water supply was required for Groundwater Sustainability Plan (“GSP”) development. As such, the costs Capitol Core incurred for identifying potential water supplies were paid with monies collected from the Groundwater Extraction Fee adopted by way of Ordinance No. 02-18.

Due to GA finances, the Board considered slowing down or stopping Capitol Core’s work identifying potential funding sources for the infrastructure at the October 17, 2019 meeting. However, Capitol Core was actively engaged in advocating for funding through the Defense Communities Infrastructure Program (“DCIP”) and the Board agreed this effort was important to pursue and, based on projected costs of \$6,750, the Board approved Capitol Core continuing. As these costs were not related to GSP development, they were not be paid using funds from the Groundwater Extraction Fee. To keep things moving, the Indian Wells Valley Water District (“District”) paid Capitol’s Core’s invoices related to finding infrastructure funding for January 2019 through February 2020 at a cost of \$10,575

The activities associated with the \$10,575 paid by the District are related to the proposed Replenishment Fee. As such, this amount would appropriately be added to the \$500,000 advance made by the District pursuant to the Advanced Funds Agreement entered into with the GA on December 13, 2017.

At the February 20, 2020 meeting, seeing value in the work Capitol Core was doing in seeking funding for infrastructure, the GA agreed to extend Capitol Core’s agreement, set to expire March 31, 2020, to December 31, 2020 and allow them to shift money within the agreement from Task 2 (Negotiation and Agreements for Water Transfers) to Task 3 (Identify and Secure Potential Funding Sources).

To date, Capitol Core has incurred an additional \$27,835 in fees in seeking funding for

infrastructure. In addition to this amount, the costs incurred by Stetson to draft the Engineering Report in support of the Replenishment fee (estimated at \$40,000) as well as the costs associated with mailing of the Prop. 218 notice (roughly \$10,000) should also be paid with funds from the proposed Replenishment fee. As Capitol Core will continue their infrastructure work, the District would also pay those invoices until the Replenishment Fee takes effect. This is estimated at another \$30,000 over the next four months. In rough numbers, the total would amount to around \$120,000 (\$10,575 + \$27,935 + \$40,000 + \$10,000 + \$30,000). Since these costs are associated with the Replenishment Fee, this would add another \$120,000 credit for the District in addition to the \$500,000.

### **RECOMMENDED BOARD ACTION(S)**

Staff recommends the Board approve the Second Amendment to the Advance Funds Agreement authorizing the District to pay those estimated costs identified above related to identifying funding infrastructure estimated at \$120,000. All monies paid by the District will be added to the \$500,000 advance and the “District will seek reimbursement and/or credit form future assessments, charges and/or fees imposed by the Authority”.

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## **SECOND AMENDMENT TO THE ADVANCED FUNDS AGREEMENT**

Whereas, the **INDIAN WELLS VALLEY WATER DISTRICT** (District) and the **INDIAN WELLS VALLEY GROUNDWATER AUTHORITY** (Authority) entered into an Advanced Funds Agreement on December 13, 2017 (“Agreement”), and an Amendment on June 29, 2018 (“Amendment”) regarding the District’s advancement of funds to the Authority to allow work to continue on the Groundwater Sustainability Plan (Agreement).

Whereas, Section 3 of the Agreement specifies the terms for reimbursement of said funds to the District.

Whereas, Section 3(c) of the Agreement states that “[T]he Parties reserve the right to mutually agree upon different terms subject to the written approval of the Parties.”

Whereas, pursuant to the Amendment, the Parties clarified that the \$500,000 advance would be “deferred and the District will seek reimbursement and/or credit from future assessments, charges and/or fees imposed by the Authority”.

Whereas, the District now agrees to advance additional funds, estimated at \$120,000, to cover costs associated with the GA’s work related to identifying potential funding sources for the infrastructure required to bring imported water to the IWV basin.

Whereas, the Parties agree that all monies paid by the District pursuant to this Second Amendment will be subject to the same terms and conditions as the original \$500,000 advance, as evidenced by the Agreement and the Amendment.

The Parties, based upon mutual consideration, hereby agree as follows:

1. All monies paid by the District pursuant to this Second Amendment will be subject to the same terms and conditions as the original \$500,000 advance, as evidenced by the Agreement and the Amendment.
2. All other provisions of the Agreement shall remain in full force and effect.
3. This modification shall be effective immediately upon execution by the Parties.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 2020.

**INDIAN WELLS VALLEY  
WATER DISTRICT**

By: \_\_\_\_\_  
Chuck Cordell, President  
Board of Directors

**INDIAN WELLS VALLEY  
GROUNDWATER AUTHORITY**

By: \_\_\_\_\_  
Mick Gleason, Chairperson  
Board of Directors

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**STAFF REPORT**

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**TO:** IWVGA Board Members **DATE:** August 20, 2020

**FROM:** Steve Johnson

**SUBJECT:** Agenda Item No. 8 – Board Consideration and Adoption of Pumping Verification Reports

---

A pumping verification process was initiated in January 2020 to provide the Authority with needed pumping data for Authority management actions. Accordingly, a “Notice of Groundwater Extraction Reporting for Pumping Verification: Questionnaire 1” (Questionnaire) was released via mail (and posted on the IWVGA’s website) on January 30, 2020. Responses to the Questionnaire were due by March 1, 2020. Pumpers that did not submit a timely response to the Questionnaire are not eligible for the Transient Pool and Fallowing Program due to the lack of needed and timely data.

Staff reviewed the responses to the Questionnaire and subsequently prepared a draft Pumping Verification Report to (1) summarize the data provided in the responses to the Questionnaire, (2) attempt to verify the groundwater production provided in the responses to the Questionnaire, and (3) provide preliminary findings on each responding pumper’s extractions during the Base Period between 2010 and 2014. The Base Period consists of the five-year period before SGMA enactment.

A draft Pumping Verification Report was provided to all pumpers that responded to the Questionnaire on June 3, 2020, and comments were requested by June 16, 2020. Comments received on the draft Pumping Verification Report by June 16, 2020 were reviewed and incorporated as appropriate.

A revised Pumping Verification Report was then provided to all pumpers that responded to the Questionnaire on July 27, 2020 and comments were requested by August 5, 2020. Comments received on the final revised Pumping Verification Report by August 5, 2020 were reviewed and incorporated as appropriate, and the attached Final Pumping Verification Report was prepared.

**ACTION(S) REQUIRED BY THE BOARD**

Staff recommends that your Board receive, adopt, and file the attached Final Pumping Verification Report dated August 2020.

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**FINAL**

**INDIAN WELLS VALLEY  
GROUNDWATER AUTHORITY**

A large, faint, light blue graphic of water ripples is centered on the page, serving as a background for the main title.

**GROUNDWATER PUMPING  
VERIFICATION REPORT**

**AUGUST 2020**

**PREPARED BY:  
STETSON ENGINEERS INC.**



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**FINAL**

**INDIAN WELLS VALLEY GROUNDWATER AUTHORITY  
PUMPING VERIFICATION REPORT**

AUGUST 17, 2020

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**Introduction**

The purpose of this Pumping Verification Report (Report) is to verify and certify, to the extent possible, groundwater production from all groundwater pumpers that do not claim to be a “De minimis extractor” per California Water Code § 10721(e). The results of this Report will be used in making determinations related to groundwater extractions and access rights to the Transient Pool.

To be eligible for the Transient Pool, a groundwater pumper must have completed and submitted a complete and timely response to the Authority’s *Notice of Groundwater Extraction Reporting for Pumping Verification: Questionnaire 1* (Questionnaire). As such, this Report does not discuss those pumpers that failed to provide timely responses to the Questionnaire. Additionally, in accordance with California water law and the Sustainable Groundwater Management Act (SGMA), the period between January 2010 and December 2014 has been considered by the Indian Wells Valley Groundwater Authority (Authority) to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment. A pumper must have **continuously** pumped each year during the Base Period of January 2010 and December 2014 to be eligible for the Transient Pool.

A general discussion of the pumping verification processes, analysis of the production data **as provided in the responses to the Questionnaire**, methods of verification, and findings on each pumper’s pumping is presented herein.

The appendices to this Report provide detailed verification discussions for each pumper who provided sufficient information for the verification processes. Table 1 presents the groundwater pumpers who provided responses to the Questionnaire and the corresponding appendix in which a discussion of that pumper's provided information is discussed and analyzed in detail. Several pumpers responded to the Questionnaire but provided limited or no information on annual groundwater production, and therefore did not provide sufficient information for pumping to be verified. Information from these pumpers as provided in response to the Questionnaire is discussed in Appendix O.

## **Facility History**

Facility history refers to the land size or service area of the pumpers, the purposes of groundwater use, the starting date of groundwater extraction, and the number and construction of wells owned by the pumper. The facility history information for each pumper that provided such data, including current irrigated acreage/service area size, is provided in Table 2. In addition, general information on well construction, water levels, well pumps, and service status for each pumper is provided in Table 3.

## **Groundwater Production**

In general, groundwater extractions based on metered records are considered as the most accurate type of groundwater production data. However, groundwater production based on metered records are not always available. As such, the pumpers may have adopted several alternative methodologies to provide their historical groundwater production. Table 4 summarizes the annual groundwater production and the corresponding production estimation methodology reported in the responses to the Questionnaire during the Base Period (between January 2010 and December 2014) for each pumper.

## **Data for Pumping Verification**

Data that can be generally utilized in the verification of groundwater production from the Basin includes historical land use and crop type information, power consumption data, water truck load counting, flow meter readings, production compiled by the Indian Wells Valley Cooperative Groundwater Management Group (Cooperative Group) shown on page 5 below in the table entitled “IWV Groundwater Production Estimates, 1975-Present”, and recently initiated monthly groundwater production reported to the Authority. In addition, there are several empirical pump equations that can be used to determine the pump flow rate and subsequent groundwater production based on actual power consumption records, or vice versa. However, these empirical equations generally require information that may not have been provided in the pumpers’ responses to the Questionnaire, such as well construction, pump power and efficiency, friction, and/or hydraulic head. Table 5 summarizes the type of data provided by each pumper, and whether groundwater production records were available for each pumper from the Cooperative Group and the Authority for the period between 1937 and 2019.

## **Basis of Verification**

Groundwater extractions reported by the pumpers were verified using several approaches. These approaches include:

- Specific engineering methods using data provided by the pumpers, such as power consumption records, pump efficiency tests, population and/or meters served, irrigated acreage, and crop type; and
- Groundwater production records from the Cooperative Group and the Authority.

Table 6 presents the groundwater production verification results during the Base Period and during 2019. It should be noted that significant discrepancies between the groundwater production verification results in Table 6 do not necessarily mean that the

groundwater production reported in the responses to the Questionnaire is incorrect. Some of the methods for groundwater production estimation are generally subject to various uncertainties, and/or the data sources used for the verification processes may be unreliable.

## **Review of Methods of Verification and Conclusions**

In accordance with SGMA and California water law, the period between January 2010 and December 2014 has been considered by the Authority to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment. The lowest annual groundwater production for continuous pumping during the Base Period for each respective pumper, as reported in the responses to the Questionnaire, as well as the basis for estimating groundwater production, are shown in Table 7.

**IWW Ground Water Production Estimates 1975 - Present**

Year	Meadow-brook Farms (e)	Simmons Ranch (f)	China Lake Acres	City of R/C	SVM	IWWWD	Inyokern CSD	NAWS (c)	Neal Ranch	Private Wells	Quist Farms	Orchards (d)	R/C Heights	S. Leroy (a/b)	Annual Totals
1975	1516		400		2781	2983	300	5000	2000				1000		15980
1976	1494		400		2911	3099	300	5000	2000				1000	1600	17804
1977	2702		400		3315	3063	300	5000	2000				1000	1600	19380
1978	3216		400		3081	3357	300	5000	2000				1000	1600	19954
1979	3257		400		3081	3402	300	5154	2000	2100			1000	1600	22294
1980	7515		400		2887	3319	300	4995	2041	2100			1000	1600	26157
1981	10036		400		3065	4223	300	4804	2002	2100			1000	1600	29530
1982	10324		400		2887	3963	300	4450	1478	2100			1000	1600	28502
1983	10087		400		2476	4316	300	4402	1752	2400			1000	1600	28733
1984	10312		400		2307	4940	300	4694	1568	2400			1000	1600	29521
1985	10100		400		2397	4981	300	4002	2450	2500			1000	1600	29730
1986	5389		400		2557	5901	300	4430	2353	2500			1000	1600	26430
1987	4141		Purchased		2560	7426	300	4422	1447	2500			Purchased	Ranch	22796
1988	5255		by		2560	7889	173	3980	1195	2500			by	Closed	23552
1989	7064		IWWWD		2320	8725	175	4205	Purchased	2650		500	IWWWD		25639
1990	6187				2505	8600	170	3667	by	2650		525			24304
1991	6737				2406	7700	150	3364	IWWWD	2650		525			23532
1992	7104				2528	7650	141	3351		2650		550			23974
1993	7701				2607	7800	150	3411		2650		575			24894
1994	7504				2607	8300	146	3684		2650		575			25466
1995	7427				2710	8100	125	3848		2650		595			25455
1996	7807				2620	8504	134	3367		2650		600			25682
1997	7800				2522	8534	139	2983		2650		625			25253
1998	7800				2527	7719	102	3018		2700		640			24506
1999	7800				2537	8242	104	2541		2700		690			24614
2000	7800				2701	8148	111	2690		2800		725			24975
2001	8150				2732	8392	97	2840		2800		750			25761
2002	8460			445	2564	8865	115.6	3138		2800	750	750			27887.6
2003	9420			616	2561	9098	126	3325		2800	750	775			29471
2004	9370			413	2470	8992	118.4	2331		2800	750	800		950	28994.4
2005	9580			366	2504	8545	135	2288		2800	750	825		1025	28818
2006	9460			385	2591.2	8864.4	135	2440		2800	750	840		1050	29315.6
2007	9270			420	2530.4	9198.5	90.7	2533		2800	750	840		1000	29432.6
2008	8957			392	2520.7	8564.8	118	2119		2800	750	900		1200	28321.5
2009	9536			400	2534.5	8398.2	118	1883		2800	750	925		1125	28469.7
2010	9437			339	2586.6	7570	118	1710		2800	750	925		1050	27285.6
2011	9827			370	2457.5	7364.25	118	1734		2800	750	925		1050	27395.75
2012	9876			348	2743	7633.45	117.927	1710		2800	750	1062		800	27840.377
2013	9354	918		423	2706	7531.69	117.68	1538		1100	750	2846			27284.37
2014	7524	1087		392	2679	7318.7	108	1618		1100	750	4087			26663.7
2015	6517	1003		427	2518	7050	90.532	1442		1100	750	4387			25284.532
2016	6387	918		373	2377	6411.8	102.335	1595		1100	750	4300			24314.135
2017					2629	6506.6		1450							
Total	315200	3926	4800	6109	113158.9	297188.39	7546.174	141156	26286	93250	11250	33062	12000	26850	1081196.9
Ave.	7505	982	400	407	2632	6911	180	3283	1878	2454	750	1181	1000	1343	25743

(a) Spike Leroy ranch started back up in 2004 with approx. 150 acres of alfalfa x 7  
 (b) 2012 number is an estimate/converted to pistachio 2013  
 (c) Navy began aggressive water conservation program in 2007

(d) 2013 number based on March 4, 2014 letter to BOS.  
 2014/2015/2016 data includes 3,700 and 4,000 AF from Mojave Pistachio  
 "based off the UC Davis Pistachio Cost Study plus dust mitigation."

(e) 2005 Brown Road Fanning changed to Meadowbrook Farms  
 (f) Simmons Alfalfa Ranch added 2014

# **TABLES**



**Table 1****List of Pumpers with Responses to the Questionnaire**

<b>No.</b>	<b>Pumper Name</b>	<b>Individual Detailed Discussions</b>
1	Arthur Hickle	Appendix A
2	China Lake Acres Mutual Water Company	Appendix B
3	CHLT Water Group	Appendix C
4	City of Ridgecrest	Appendix D
5	Indian Wells Valley Water District	Appendix E
6	Jumper St. Water Co-op	Appendix F
7	Kern County Public Works Department	Appendix G
8	Meadowbrook	Appendix H
9	Patricia Davis (Amberglow)	Appendix I
10	Quist Farms	Appendix J
11	Searles Valley Minerals	Appendix K
12	Sierra Shadows Ranch (John T. Conaway)	Appendix L
13	Simmons Farms	Appendix M
14	Terese Farms - Hovaten	Appendix N
15	Carey Marvin	Appendix O
16	Crestview Water	Appendix O
17	Dixie Water Company/Michael R. Haynes	Appendix O
18	Donna Sue Water Co	Appendix O
19	Hammer Water Cooperative	Appendix O
20	Heritage Village Master Community	Appendix O
21	Inyokern Community Services District	Appendix O
22	Larry Schiller	Appendix O
23	Life Water Co-op	Appendix O
24	Mirage St. Water Co-op	Appendix O
25	Northeast Leliter Water Co-op	Appendix O
26	Owens Peak Water Cooperative	Appendix O
27	Pinon Water Cooperative	Appendix O
28	Southern California Edison	Appendix O
29	TNT Western Home, Inc	Appendix O
30	Welfl's Mini Mart Inc	Appendix O
31	West Valley Mutual Water Co-op	Appendix O
32	Yellow Bird Water Co-op	Appendix O

**Table 2  
Facility Information and History of Groundwater Pumpers**

No.	Pumper Name	Current Irrigated Acreage/Service Area Size (acres)	Groundwater Extraction Starting Year	Number of Wells	Groundwater Uses	Most Significant Groundwater Use
1	Arthur Hickle	20.5	1984	2	Domestic, Landscaping, and Agricultural	Agricultural
2	China Lake Acres Mutual Water Company	60	1979	2	Potable Water Customer Service	
3	CHLT Water Group	20	1998	2	Domestic and Landscaping	
4	City of Ridgecrest	36	1970's/1980's	5	Landscaping	Landscaping
5	Indian Wells Valley Water District	24,320	1943	11	Potable Water Customer Service	
6	Jumper St. Water Co-op	17.5	1988	1	Potable Water for Household and Landscaping	
7	Kern County Public Works Department	505	1968	2	Solid Waste Operations	
8	Meadowbrook Dairy	1,277	1975	14	Domestic and Agricultural	Agricultural
9	Patricia Davis (Amberglow)	12	1968	3	Household and Agricultural	Agricultural
10	Quist Farms	150	1973	7	Domestic, Livestock, and Agricultural	Agricultural
11	Searles Valley Minerals	3,741	1930	5	Industrial and Municipal	Industrial
12	Sierra Shadows Ranch (John T. Conaway)	200	1972	7	Agricultural	Agricultural
13	Simmons Farms	133	2010	3	Domestic, Landscaping, and Agricultural	Agricultural
14	Terese Farms - Hovaten	80	1984	5	Domestic and Agricultural	Agricultural

**Table 3  
Well Construction Information**

Pumper	Well Name / Number	Date Drilled	Well Depth (feet)	Casing Length (feet)	Static WL (ft, bgs)	Pump Depth (ft, bgs)	Pump Type	Motor HP	Manufacturer's Pump Rating (gpm)	Pump Test (gpm)	Date of Pump Test	Service Status
Arthur Hickle	1	1984	370	N/A	272	372	Submersible	10	60	N/A	N/A	Active
	2	2012	450	N/A	270	370	Submersible	10	60	N/A	N/A	Active
China Lake Acres Mutual Water Company	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
CHLT Water Group	1	1987	250	N/A	185	220	N/A	N/A	N/A	N/A	N/A	Active
	2	1987	250	N/A	186	220	N/A	N/A	N/A	N/A	N/A	Active
City of Ridgecrest	1	N/A	N/A	N/A	210	273	N/A	N/A	N/A	N/A	N/A	Active
	2	N/A	N/A	N/A	150	315	N/A	N/A	N/A	N/A	N/A	Active
	3	N/A	N/A	N/A	147	N/A	N/A	N/A	N/A	N/A	N/A	Active
	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
Indian Wells Valley Water District	Well 9A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
	Well 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
	Well 11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
	Well 13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
	Well 17	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
	Well 18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
	Well 30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
	Well 31	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
	Well 33	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
	Well 34	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
Well 35	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Pending	
Jumper Street Water Co-Op	1	1987	250	N/A	185	220	N/A	5	N/A	N/A	N/A	Active

**Table 3  
Well Construction Information**

Pumper	Well Name / Number	Date Drilled	Well Depth (feet)	Casing Length (feet)	Static WL (ft, bgs)	Pump Depth (ft, bgs)	Pump Type	Motor HP	Manufacturer's Pump Rating (gpm)	Pump Test (gpm)	Date of Pump Test	Service Status
Kern County Public Works Department	1	1968	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive
	2	1983	606	585	340	550	Submersible	50	300	285	4/5/2005	Active
Meadowbrook Dairy	Well 1 (North)	1979	N/A	N/A	247.4	271.6	N/A	200	N/A	N/A	2/10/2015	Active
	Well 2 (Big Horn)	2008	N/A	N/A	262	283	N/A	400	N/A	N/A	3/8/2016	Active
	Well 3 (New)	2006	N/A	N/A	215.6	251.1	N/A	200	N/A	N/A	4/4/2017	Active
	Well 4	1981	N/A	N/A	188.9	227.8	N/A	150	N/A	N/A	4/4/2017	Active
	Well 4R	2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
	Well 5	1976	N/A	N/A	160.2	190.3	N/A	150	N/A	N/A	4/4/2017	Active
	Well 6	1980	N/A	N/A	147.5	178.1	N/A	150	N/A	N/A	4/4/2017	Active
	Well 7	1980	N/A	N/A	130	151.3	N/A	150	N/A	N/A	3/8/2016	Active
	Well 8	1979	N/A	N/A	164.5	179.9	N/A	150	N/A	N/A	4/4/2017	Active
	Coyote Trails Well	1980	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
	HQ Well	2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
	Old Well 2	1979	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive
	Old Well 3	1977	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive
Old HQ Well	1970	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive	
Patricia Davis (Amberglow)	1	1987	350	N/A	242	N/A	N/A	N/A	N/A	N/A	N/A	Active
	2	2016	462	N/A	280	N/A	N/A	N/A	N/A	N/A	N/A	Active
	3	1968	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive

**Table 3  
Well Construction Information**

Pumper	Well Name / Number	Date Drilled	Well Depth (feet)	Casing Length (feet)	Static WL (ft, bgs)	Pump Depth (ft, bgs)	Pump Type	Motor HP	Manufacturer's Pump Rating (gpm)	Pump Test (gpm)	Date of Pump Test	Service Status
Quist Farms	East Well	1991	405	400	226	294	Submersible	10	89	250	1991/Apr	Active
	Center Well1	1974	404	399	262	320	Submersible	5	37	N/A	N/A	Active
	West Well	1991	405	400	232	273	Submersible	10	85	300	1991/May	Active
	Well B2	1994	450	450	263	315	Submersible	30	267	N/A	N/A	Active
	Well C	1994	457	455	240	315	Submersible	30	285	N/A	N/A	Active
	Well D	2015	500	500	271	315	Submersible	30	285	300	2015/Mar	Active
	Well E3	1995	455	455	272	315	Submersible	30	285	N/A	N/A	Active
Searles Valley Minerals	IW30	1951	387	N/A	180	183.75	N/A	100	N/A	N/A	N/A	Active
	IW35	1989	850	850	233	N/A	N/A	N/A	N/A	1500 gpm	1989/May	Active
	IW36	1990	1145	982	249	N/A	N/A	N/A	N/A	2000 gpm	1990/Aug	Active
	WE2	1940	375	278	116	131	N/A	N/A	N/A	N/A	N/A	Active
	WE4	1965	866	555	214	231	N/A	N/A	N/A	N/A	N/A	Active
	Well 22	1912	N/A	N/A	175	N/A	N/A	N/A	N/A	N/A	N/A	Inactive
	Well 23	1942	300	300	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive
	Well 34 (Pribus)	1953	402	370	153	193.5	N/A	100	N/A	N/A	N/A	Inactive
	WE 1	1931	185	N/A	114	119	N/A	N/A	N/A	125 gpm	1979/Mar	Inactive
	Windy Acres Well	1930	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive
	WE3	1946	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive
	4A1	1959	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive
5B1	1959	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive	

**Table 3  
Well Construction Information**

Pumper	Well Name / Number	Date Drilled	Well Depth (feet)	Casing Length (feet)	Static WL (ft, bgs)	Pump Depth (ft, bgs)	Pump Type	Motor HP	Manufacturer's Pump Rating (gpm)	Pump Test (gpm)	Date of Pump Test	Service Status
Sierra Shadows Ranch (John T. Conaway)	Well 1	N/A	N/A	N/A	N/A	N/A	N/A	200	N/A	N/A	N/A	Active
	Well 2	N/A	N/A	N/A	N/A	N/A	N/A	50	N/A	N/A	N/A	Active
	Well 3	N/A	N/A	N/A	N/A	N/A	N/A	15	N/A	N/A	N/A	Active
	Well 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
	Well 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
	Well 6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
	Well 7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
	Well 8	1960's	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive
Simmons Farms	Domestic Well	Early 1960	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
	Small Ag Well	Early 1960	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive
	Large Ag Well	2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive
Terese Farms	North	1982	500	N/A	390	450	N/A	N/A	N/A	N/A	N/A	Active
	East	1998	600	N/A	420	500	N/A	N/A	N/A	N/A	N/A	Active
	South	2015	622	N/A	431	N/A	N/A	N/A	N/A	N/A	N/A	Active
	Bow	2009	401	N/A	229	N/A	N/A	N/A	N/A	N/A	N/A	Active
	Well 5*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active

**Notes:**

\* Information for 4 of the 5 wells owned by Terese Farms was provided. The remaining well was not given a well name, and is referred to in this Report as "Well 5."

- ft = feet
- bgs = Below ground surface
- WL = Water level
- gpm = Gallons per minute
- HP = Horsepower

**Table 4**  
**Reported Annual Groundwater Production Between 2010 and 2014**

<b>Pumper</b>	<b>Year</b>	<b>Reported Annual Production (acre-feet)</b>	<b>Average Monthly Production (acre-feet)</b>	<b>Basis of Reported Production</b>
Arthur Hickle	2010	20.43	1.70	Power consumption records
	2011	20.47	1.71	Power consumption records
	2012	23.80	1.98	Power consumption records
	2013	43.82	3.65	Power consumption records
	2014	52.79	4.40	Power consumption records
China Lake Acres Mutual Water Company	2010	37.51	3.13	Meter (average annual production)
	2011	37.51	3.13	Meter (average annual production)
	2012	37.51	3.13	Meter (average annual production)
	2013	37.51	3.13	Meter (average annual production)
	2014	37.51	3.13	Meter (average annual production)
CHLT Water Group	2010	N/A	N/A	N/A
	2011	N/A	N/A	N/A
	2012	N/A	N/A	N/A
	2013	10.41	0.87	Meter (average annual production)
	2014	10.41	0.87	Meter (average annual production)
City of Ridgecrest	2010	339.00	28.25	Cooperative Group records
	2011	370.00	30.83	Cooperative Group records
	2012	348.00	29.00	Cooperative Group records
	2013	423.00	35.25	Cooperative Group records
	2014	392.00	32.67	Cooperative Group records
Indian Wells Valley Water District	2010	7,570.00	630.83	Meter
	2011	7,364.30	613.69	Meter
	2012	7,633.50	636.13	Meter
	2013	7,531.70	627.64	Meter
	2014	7,318.70	609.89	Meter
Jumper Street Water Cooperative	2010	6.24	0.52	Meter (average annual production)
	2011	6.24	0.52	Meter (average annual production)
	2012	6.24	0.52	Meter (average annual production)
	2013	6.24	0.52	Meter (average annual production)
	2014	6.24	0.52	Meter (average annual production)

**Table 4**  
**Reported Annual Groundwater Production Between 2010 and 2014**

<b>Pumper</b>	<b>Year</b>	<b>Reported Annual Production (acre-feet)</b>	<b>Average Monthly Production (acre-feet)</b>	<b>Basis of Reported Production</b>
Kern County Public Works Department	2010	20.00	1.67	Amount of water-truck loads
	2011	20.00	1.67	Amount of water-truck loads
	2012	20.00	1.67	Amount of water-truck loads
	2013	20.00	1.67	Amount of water-truck loads
	2014	20.00	1.67	Amount of water-truck loads
Meadowbrook Dairy	2010	6,880.00	573.33	Power consumption and pump efficiency test
	2011	6,840.00	570.00	Power consumption and pump efficiency test
	2012	7,660.00	638.33	Power consumption and pump efficiency test
	2013	8,070.00	672.50	Power consumption and pump efficiency test
	2014	8,920.00	743.33	Power consumption and pump efficiency test
Patricia Davis (Amberglow)	2010	75.09	6.26	Tree number, irrigation time, and irrigation flow rate
	2011	75.09	6.26	Tree number, irrigation time, and irrigation flow rate
	2012	67.58	5.63	Tree number, irrigation time, and irrigation flow rate
	2013	67.58	5.63	Tree number, irrigation time, and irrigation flow rate
	2014	67.58	5.63	Tree number, irrigation time, and irrigation flow rate
Quist Farms	2010	443.80	36.98	Power consumption
	2011	410.90	34.24	Power consumption
	2012	426.00	35.50	Power consumption
	2013	429.30	35.78	Power consumption
	2014	496.40	41.37	Power consumption
Searles Valley Minerals	2010	2,586.60	215.55	Cooperative Group records
	2011	2,457.50	204.79	Cooperative Group records
	2012	2,743.00	228.58	Cooperative Group records
	2013	2,706.00	225.50	Cooperative Group records
	2014	2,679.00	223.25	Cooperative Group records
Sierra Shadows Ranch (John T. Conaway)	2010	241.68	20.14	Number of trees and drip emitters
	2011	241.68	20.14	Number of trees and drip emitters
	2012	241.68	20.14	Number of trees and drip emitters
	2013	288.00	24.00	Number of trees and drip emitters
	2014	299.14	24.93	Number of trees and drip emitters



**Table 4**  
**Reported Annual Groundwater Production Between 2010 and 2014**

<b>Pumper</b>	<b>Year</b>	<b>Reported Annual Production (acre-feet)</b>	<b>Average Monthly Production (acre-feet)</b>	<b>Basis of Reported Production</b>
Simmons Farms	2010	56.00	4.67	N/A
	2011	58.00	4.83	N/A
	2012	918.00	76.50	Meter
	2013	918.00	76.50	Meter
	2014	1,087.00	90.58	Meter
Terese Farms	2010	260.00	21.67	Irrigated acreage, estimated water requirement
	2011	269.00	22.42	Irrigated acreage, estimated water requirement
	2012	293.00	24.42	Irrigated acreage, estimated water requirement
	2013	305.00	25.42	Irrigated acreage, estimated water requirement
	2014	317.00	26.42	Irrigated acreage, estimated water requirement

**Table 5  
Available Data For Groundwater Production Verification**

Pumper	Data from Questionnaire Responses		Other Data Sources for Reported Groundwater Production	
	Data Period	Data Type	Compiled by the Cooperative Group	Reported to the Authority
Arthur Hickle	1937 to 1984	N/A	N/A	N/A
	1985 to 2009	Land Use	N/A	N/A
	2010 to 2019	Power Consumption	N/A	Monthly Production after September 2018
China Lake Acres Mutual Water Company	1937 to 1978	N/A	N/A	N/A
	1979 to 2019	Flowmeter Reading	N/A	Monthly Production after September 2018
CHLT Water Group	1937 to 2012	N/A	N/A	N/A
	1979 to 2019	Flowmeter Reading	N/A	Monthly Production after September 2018
City of Ridgecrest	1937 to 2001	N/A	N/A	N/A
	2002 to 2016	Cooperative Group Report	Annual Production	N/A
	2017 to 2019	N/A	N/A	Monthly Production after September 2018
Indian Wells Valley Water District	1937 to 1942	N/A	N/A	N/A
	1943 to 1973	Population	Annual Production	N/A
	1974 to 2019	Flowmeter Reading	N/A	Monthly Production after September 2018
Jumper Street Water Cooperative	1937 to 1987	N/A	N/A	N/A
	1988 to 2019	Flowmeter Reading	N/A	Monthly Production after September 2018
Kern County Public Works Department	1937 to 1982	N/A	N/A	N/A
	1983 to 2015	Water Truck Loads	N/A	N/A
	2016 to 2019	Flowmeter Reading	N/A	Monthly Production after September 2018
Meadowbrook Dairy	1937 to 1974	N/A	N/A	N/A
	1975 to 2017	Power Consumption and Pump Test	Annual Production	N/A
	2018 to 2019	Flowmeter Reading	N/A	Monthly Production after September 2018
Patricia Davis (Amberglow)	1937 to 1983	N/A	N/A	N/A
	1984 to 2018	Land Use	N/A	N/A
	2019	Flowmeter Reading	N/A	Monthly Production after September 2018
Quist Farms	1937 to 1974	N/A	N/A	N/A
	1975 to 2008	Land Use	Annual Production (2002 to 2016)	N/A
	2009 to 2019	Power Consumption		Monthly Production after September 2018

**Table 5  
Available Data For Groundwater Production Verification**

Pumper	Data from Questionnaire Responses		Other Data Sources for Reported Groundwater Production	
	Data Period	Data Type	Compiled by the Cooperative Group	Reported to the Authority
Searles Valley Minerals	1937 to 1974	Various Production Reports	N/A	N/A
	1975 to 2016	Cooperative Group Report	Annual Production (1975 to 2016)	N/A
	2017 to 2019	Internal Water Production Records	N/A	Monthly Production after September 2018
Sierra Shadows Ranch (John T. Conaway)	1937 to 1972	N/A	N/A	N/A
	1972 to 2019	Land Use	N/A	Monthly Production after September 2018
Simmons Farms	1937 to 2011	N/A	N/A	N/A
	2012 to 2019	Flowmeter Reading	Annual Production (2013 to 2016)	Monthly Production after September 2018
Terese Farms	1937 to 2008	N/A	N/A	N/A
	2009 to 2018	Land Use and Power Consumption	N/A	Monthly Production after September 2018
	2019	Land Use	N/A	Monthly Production

**Table 6**  
**Verification of Annual Groundwater Production Between 2010 and 2014**  
**(units: Acre-Feet)**

Pumper	Year	Questionnaire Groundwater Production	Verification Process			Remarks <sup>2</sup>
			Reproduced Questionnaire Production <sup>1</sup>	Cooperative Group Production	Authority Recorded Production	
Arthur Hickle	2010	20.43	20.43	N/A	N/A	Reproduction of Questionnaire Groundwater Production was able to be performed based on Mr. Hickle's methodology.
	2011	20.47	20.47	N/A	N/A	
	2012	23.80	23.80	N/A	N/A	
	2013	43.82	43.82	N/A	N/A	
	2014	52.79	52.79	N/A	N/A	
	2019	47.63	47.63	N/A	15.40	
China Lake Acres Mutual Water Company	2010	37.51	N/A	N/A	N/A	Reproduction of Questionnaire Groundwater Production cannot be performed.
	2011	37.51	N/A	N/A	N/A	
	2012	37.51	N/A	N/A	N/A	
	2013	37.51	N/A	N/A	N/A	
	2014	37.51	N/A	N/A	N/A	
	2019	37.51	N/A	N/A	37.51	
CHLT Water Group	2010	N/A	N/A	N/A	N/A	Reproduction of Questionnaire Groundwater Production cannot be performed.
	2011	N/A	N/A	N/A	N/A	
	2012	N/A	N/A	N/A	N/A	
	2013	10.41	N/A	N/A	N/A	
	2014	10.41	N/A	N/A	N/A	
	2019	10.41	N/A	N/A	9.61	

**Table 6**  
**Verification of Annual Groundwater Production Between 2010 and 2014**  
**(units: Acre-Feet)**

Pumper	Year	Questionnaire Groundwater Production	Verification Process			Remarks <sup>2</sup>
			Reproduced Questionnaire Production <sup>1</sup>	Cooperative Group Production	Authority Recorded Production	
City of Ridgecrest	2010	339.00	N/A	339.00	N/A	Reproduction of Questionnaire Groundwater Production cannot be performed.
	2011	370.00	N/A	370.00	N/A	
	2012	348.00	N/A	348.00	N/A	
	2013	423.00	N/A	423.00	N/A	
	2014	392.00	N/A	392.00	N/A	
	2019	NA	NA	N/A	145.80	
Indian Wells Valley Water District	2010	7,570.00	N/A	7,570.00	N/A	Reproduction of Questionnaire Groundwater Production cannot be performed.
	2011	7,364.30	N/A	7,364.30	N/A	
	2012	7,633.50	N/A	7,633.50	N/A	
	2013	7,531.70	N/A	7,531.70	N/A	
	2014	7,318.70	N/A	7,318.70	N/A	
	2019	6,120.10	N/A	N/A	6,116.20	
Jumper Street Water Cooperative	2010	6.24	N/A	N/A	N/A	Reproduction of Questionnaire Groundwater Production cannot be performed.
	2011	6.24	N/A	N/A	N/A	
	2012	6.24	N/A	N/A	N/A	
	2013	6.24	N/A	N/A	N/A	
	2014	6.24	N/A	N/A	N/A	
	2019	4.83	N/A	N/A	5.01	

**Table 6**  
**Verification of Annual Groundwater Production Between 2010 and 2014**  
**(units: Acre-Feet)**

Pumper	Year	Questionnaire Groundwater Production	Verification Process			Remarks <sup>2</sup>
			Reproduced Questionnaire Production <sup>1</sup>	Cooperative Group Production	Authority Recorded Production	
Kern County Public Works Department	2010	20.00	N/A	N/A	N/A	Reproduction of Questionnaire Groundwater Production cannot be performed (Authority November 2019 production is missing).
	2011	20.00	N/A	N/A	N/A	
	2012	20.00	N/A	N/A	N/A	
	2013	20.00	N/A	N/A	N/A	
	2014	20.00	N/A	N/A	N/A	
	2019	15.80	N/A	N/A	13.94	
Meadowbrook Dairy	2010	6,880.00	6,052.55	9,437.00	N/A	Reproduced Questionnaire Production based on power consumption data significantly varies from Questionnaire Groundwater Production and Cooperative Group Production. See Appendix for detailed discussions.
	2011	6,840.00	5,762.69	9,827.00	N/A	
	2012	7,660.00	6,817.76	9,876.00	N/A	
	2013	8,070.00	6,851.71	9,354.00	N/A	
	2014	8,920.00	N/A	7,524.00	N/A	
	2019	4,403.00	N/A	N/A	4,403.00	
Patricia Davis (Amberglow)	2010	75.09	75.13	N/A	N/A	Reproduction of Questionnaire Groundwater Production was able to be performed based on Ms. Davis' methodology.
	2011	75.09	67.61	N/A	N/A	
	2012	67.58	67.61	N/A	N/A	
	2013	67.58	67.61	N/A	N/A	
	2014	67.58	67.61	N/A	N/A	
	2019	50.23	45.08	N/A	N/A	

**Table 6**  
**Verification of Annual Groundwater Production Between 2010 and 2014**  
**(units: Acre-Feet)**

Pumper	Year	Questionnaire Groundwater Production	Verification Process			Remarks <sup>2</sup>
			Reproduced Questionnaire Production <sup>1</sup>	Cooperative Group Production	Authority Recorded Production	
Quist Farms	2010	443.80	N/A	750.00	N/A	Reproduction of Questionnaire Groundwater Production was able to be performed based on power consumption records.
	2011	410.90	N/A	750.00	N/A	
	2012	426.00	N/A	750.00	N/A	
	2013	429.30	N/A	750.00	N/A	
	2014	496.40	N/A	750.00	N/A	
	2019	637.50	N/A	N/A	636.30	
Searles Valley Minerals	2010	2,586.60	N/A	2,586.60	N/A	Reproduction of Questionnaire Groundwater Production cannot be performed.
	2011	2,457.50	N/A	2,457.50	N/A	
	2012	2,743.00	N/A	2,743.00	N/A	
	2013	2,706.00	N/A	2,706.00	N/A	
	2014	2,679.00	N/A	2,679.00	N/A	
	2019	2,708.00	N/A	N/A	2,708.00	
Sierra Shadows Ranch (John T. Conaway)	2010	241.68	N/A	N/A	N/A	Reproduction of Questionnaire groundwater production cannot be performed.
	2011	241.68	N/A	N/A	N/A	
	2012	241.68	N/A	N/A	N/A	
	2013	288.00	N/A	N/A	N/A	
	2014	299.14	N/A	N/A	N/A	
	2019	501.14	N/A	N/A	457.32	

**Table 6**  
**Verification of Annual Groundwater Production Between 2010 and 2014**  
**(units: Acre-Feet)**

Pumper	Year	Questionnaire Groundwater Production	Verification Process			Remarks <sup>2</sup>
			Reproduced Questionnaire Production <sup>1</sup>	Cooperative Group Production	Authority Recorded Production	
Simmons Farms	2010	56.00	N/A	N/A	N/A	Reproduction of Questionnaire Groundwater Production cannot be performed.
	2011	58.00	N/A	N/A	N/A	
	2012	918.00	N/A	N/A	N/A	
	2013	918.00	N/A	918.00	N/A	
	2014	1,087.00	N/A	1,087.00	N/A	
	2019	471.00	N/A	N/A	471.00	
Terese Farms	2010	260.00	260.00	N/A	N/A	Reproduction of Questionnaire Groundwater Production was able to be performed based on Terese Farms' methodology.
	2011	269.00	269.00	N/A	N/A	
	2012	293.00	293.00	N/A	N/A	
	2013	305.00	305.00	N/A	N/A	
	2014	317.00	317.00	N/A	N/A	
	2019	320.00	320.00	N/A	322.00	

**Notes:**

- <sup>1</sup> This column presents annual groundwater production calculated using the methodology and data provided in the response to the Questionnaire, if possible. See Remarks column.
- <sup>2</sup> Remarks are provided regarding whether the production reported by the pumpers in their responses to the Questionnaire could be reproduced using the methodology and data provided by each pumper.



**Table 7**  
**Reported Minimum Annual Groundwater Production**  
**Between 2010 and 2014**

<b>Pumper</b>	<b>Year(s)</b>	<b>Minimum Production Reported in Questionnaire (acre-feet)</b>	<b>Method of Production Estimate</b>	<b>Remark</b>
Arthur Hickie	2010	20.43	Power consumption records	
China Lake Acres Mutual Water Company	2010 to 2014	Undetermined	Meter (average annual production)	An average groundwater production (37.5 AF) was assumed for the Base Period. Groundwater production was not continuous during the Base Period.
CHLT Water Group	2010 to 2012	0.00	Meter (average annual production)	Groundwater production was not continuous during the Base Period.
City of Ridgecrest	2010	339.00	Cooperative Group records	
Indian Wells Valley Water District	2014	7,318.70	Meter	
Jumper Street Water Cooperative	2010 to 2014	Undetermined	Meter (average annual production)	An average groundwater production (6.24 AF) was assumed for the Base Period
Kern County Public Works Department	2010 to 2014	Undetermined	Amount of water-truck loads	An average groundwater production (20 AF) was assumed for the Base Period
Meadowbrook Dairy	2011	6,840.00	Power consumption and pump efficiency test	
Patricia Davis (Amberglow)	2012 to 2014	67.58	Tree number, irrigation time and irrigation flow rate	
Quist Farms	2010	410.90	Power consumption	
Searles Valley Minerals	2011	2,457.50	Cooperative Group records	
Sierra Shadows Ranch (John T. Conaway)	2010 to 2012	241.68	Number of trees and drip emitters	
Simmons Farms	2010	56.00	N/A	Meter installed in 2012
Terese Farms	2010	260.00	Irrigated acreage and estimated water requirement	

# **APPENDICES**

**APPENDIX A**  
**Verification Report for**  
**Mr. Arthur Hickle**

## **Appendix A: Pumping Verification Report for Arthur Hickle**

The purpose of this Pumping Verification Report (Report) is to verify and certify to the extent possible, all groundwater production from Mr. Arthur Hickle for the years between 1937 and 2019, with particular emphasis on the Base Period for use in establishing Annual Pumping Allocations and determining eligibility for the Transient Pool. An analysis of the verification data, the methods of verification, and findings on the Producer's pumping are presented herein.

### **History**

Mr. Arthur Hickle owns 20.5 acres of property in Ridgecrest, California [Assessor Parcel Number (APN): 341-071-24-9]. Mr. Hickle reports that the property deed includes appurtenant water rights. The property is located within the Basin boundary and Mr. Hickle reports that groundwater has been extracted since 1984. There are currently two (2) wells drilled within this property, and there is no information to suggest that any wells existed on this property prior to 1984. Extracted groundwater has been reportedly used for domestic, landscaping, and agricultural (irrigation of pistachio orchards) purposes, though the quantities of extracted groundwater for domestic and landscaping purposes were not specified in the responses to the Questionnaire. A significant portion of the total extracted groundwater has been used for agricultural purposes, though the annual volume of water used for irrigation varies depends on the size of the pistachio orchard.

### **Description of Facilities**

There are currently two (2) active wells and no inactive wells located within this property. According to the well construction data provided by Mr. Hickle, Well 1 was drilled in 1984 with a total depth of 370 feet, a static water level of 272 feet below ground surface (bgs), and a submersible pump installed at 372 feet bgs (it should be noted that there is an inconsistency between the reported well depth and pump location as the pump location is deeper than the well depth). Well 2 was drilled in 2012 with a total depth of 450 feet and a static water level of 270 feet bgs. Well 2 has a pressure pump installed; the pump intake is located at 270 feet bgs, and a submersible pump is installed at 370 feet bgs.

## **Appendix A: Pumping Verification Report for Arthur Hickle**

Both pumps are rated 10 horsepower with no manufacturer reported flow rates; however, data provided in the Questionnaire suggests that the pump flow rates for these two (2) wells are 60 gallons per minute (gpm) each. Operation of these wells has been performed by Mr. Hickle since 1984. Extracted groundwater is either fed into a drip irrigation system through the submersible well pumps for agricultural irrigation, or stored in an above-ground reservoir through a surface pressure pump for domestic and landscaping uses. General information on well construction, water level, well pumps, and service status is provided in Table A-1.

### **Groundwater Production**

Historical groundwater production based on metered records are not available because flow meters are not installed on the wells. The Indian Wells Valley Cooperative Groundwater Management Group (Cooperative Group) and the Authority do not have historic reported groundwater production specific to Mr. Hickle, except for the Authority's monthly groundwater production records between September 2018 and December 2019.

Mr. Hickle provided the estimated combined groundwater production of the two (2) wells' in the Questionnaire. Estimates of production were determined using on two (2) methods: irrigated acreage and power consumption. Details of the production estimates are discussed in the following sections. The annual groundwater production estimates between 1985 and 2019 are provided on Table A-2.

### **Verification Data and Information**

All of the data described below were utilized in the verification of the groundwater production by Mr. Hickle from the Basin.

#### **Groundwater Production Questionnaire**

Mr. Hickle provided the combined groundwater production of the two (2) wells between 1985 and 2019. Groundwater production for the period between 1985 and 2009

was estimated based on the irrigated acreage of pistachio trees; however, details for the production estimate method were not provided for this period. Groundwater production between 2010 and 2019 was estimated based on power consumption records and pump flow rates provided by Mr. Hickle. The monthly pump flow rates and power consumption data attached to the responses to the Questionnaire are provided in Appendix A-1. It is not clear if the power consumption data shown in Appendix A-1 corresponds to agricultural uses only.

Annual groundwater production during the Base Period (from 2010 to 2014) as reported in the Questionnaire, are shown on Table A-3. Due to the lack of available groundwater production records from Cooperative Group, a comparison of groundwater production as reported in the Questionnaire and as documented by the Cooperative Group was not performed in Table A-3. The Authority does not have production records prior to August 2018; therefore, a comparison between the reported production in the Questionnaire and the data documented by the Authority was not performed either.

A breakdown of extracted groundwater for agricultural, domestic, commercial, and industrial purposes between 2010 and 2014 is provided in Table A-4. Between 2010 and 2014, annual groundwater production reported in the Questionnaire ranged from 20.43 acre-feet (AF) in 2011 to 52.79 AF in 2014.

### **Power Consumption Data**

Electric power consumption data from the Southern California Edison Company (Edison) for the two (2) active wells between 2010 and 2019 were summarized by Mr. Hickle and submitted with the Questionnaire (Appendix A-1). The data shown in Appendix A-1 includes monthly power usage (in kilowatt-hour, kWh), power load (kilowatt, kW), and pump flow rates (60 gpm for each well and total monthly flow capacity). Because pump tests were not available and flow meters are not currently installed at these two (2) wells, it is not clear if the pump flow rate data was obtained from the results of pump tests or from other indirect methods. Based on the data shown in Appendix A-1, it appears

that monthly groundwater production was determined by taking the product of the monthly total pump flow rate and the monthly pumping duration (total hours) for each month. The pumping duration can be calculated by taking the ratio of monthly power usage (kWh) to power load (kW). It should be noted that the power consumption data shown in Appendix A-1 may include power consumption for agricultural pumping, domestic, and other uses. In addition, the pump flow rates may vary significantly depending on various factors such as depth to groundwater, pipe size, pump age, etc.

### **Land Use Data**

The annual irrigated land acreage between 1985 and 2009 is provided in Table A-2. The property's irrigated lands are for pistachio orchards only. Generally, groundwater production can be estimated by applying the crop water requirement to the total irrigated acreage. Therefore, the annual volume of extracted groundwater should be correlated to the acreage of irrigated land. As reported in the Questionnaire, this property has had 5 acres of pistachio orchards between 1985 and 1989, 10 acres between 1990 and 1993, and 17.5 acres after 1993.

### **Basis of Verification**

The available data discussed in the “**Verification Data and Information**” section was considered in the verification of groundwater production by Mr. Hickle.

### **Records of Groundwater Production from the Authority and Cooperative Group**

Records of groundwater production from the Authority and the Cooperative Group were not available for this property except for monthly groundwater production reports submitted to the Authority between September 2018 and December 2019. As reported in the Questionnaire, annual groundwater production during 2019 was 47.6 AF; however, groundwater production data reported to the Authority in 2019 was 15.4 AF. The

discrepancy is about 68 percent (Table A-3); that is, the Authority production record is about one third (1/3) of the production reported in the Questionnaire.

### **Power Consumption Data**

Power consumption data shown in Appendix A includes the monthly energy consumption (kWh), the rate of electrical energy consumption (kW), and average monthly pumping rate (gpm). Assuming that the power consumption data in Appendix A is solely for agricultural irrigation, the pumping duration for each month can be determined by calculating the ratio of monthly power usage (kWh) to power load (kW). The monthly volume of extracted groundwater can then be estimated by calculating the product of the pumping flow rate and pumping duration. The method discussed above is the same method used to calculate groundwater production reported in the Questionnaire. It should be noted that power consumption, electrical load, and flow rate data shown in Appendix A were only provided for the period between 2010 and 2019, so the method described above only provides groundwater production estimates for the period between 2010 and 2019.

### **Land Use Data**

Pistachios are generally considered to be crops with a high volume of water demand. To reduce the quantity of water required for pistachio tree irrigation, Mr. Hickle installed a drip irrigation system (installation year is not available) to minimize the waste of water. Typically, the annual water requirement to grow pistachio trees is approximately three (3) to four (4) AF per acre of pistachio orchard. If the annual water requirement of 3 AF per acre is applied to the pistachio orchards located on this property, the estimated annual water requirements during the period between 1985 and 2009 (shown on Table A-2) are greater than the production reported in the Questionnaire. For example, in 1985 the size of this property's pistachio orchard was 5 acres, and the production estimate using the annual water requirement of 3 AF per acre would be 15 AF. The reported 1985 groundwater production in the Questionnaire was only 3 AF (difference of 12 AF).



Similarly, the reported 2009 groundwater production in the Questionnaire was 20 AF (see Table A-2), which is 32.5 AF less than the estimated annual water requirement for 17.5 acres of pistachios orchard (52.5 AF). However, the average annual production estimate of 50.6 AF reported between 2013 and 2019 is similar to the estimated annual water requirement of 52.5 AF based on the 3 AF per acre annual water requirement for pistachio orchards.

### **Review of Methods and Verification and Conclusions**

Although the reported groundwater production in the Questionnaire covers the period between 1985 and 2019, verifications of groundwater production between data collected from the Cooperative Group and the Questionnaire were not performed because the Cooperative Group has no production records for this property. Groundwater production was reported for 2019 to the Authority, and based on the 2019 Authority records, Mr. Hickle's groundwater production is approximately one third (1/3) of the reported production in the Questionnaire (Table A-3).

The annual groundwater production reported in the Questionnaire between 1985 and 2009 were estimated based on the acreage of the pistachio orchard. The method to estimate groundwater production based on acreage is generally subject to uncertainty due to unknown factors such as irrigation schedule and irrigation management. Although pistachios are considered to be crops with a high-water demand, if an annual water requirement of 3 AF per acre of pistachio orchard is assumed, the annual groundwater production reported in the Questionnaire appears to be low, specifically during the period between 1985 and 2012 (see Table A-2). Reported power consumption data was used to estimate annual groundwater production between 2010 and 2019. Though verification of groundwater production using empirical equations was not performed, estimated groundwater production between 2010 and 2019 can be reproduced based on the power consumption, electrical load, and pump flow rate data provided in the Questionnaire (Appendix A). Comparisons of groundwater production reported in the Questionnaire to groundwater production estimates based on the assumed annual water requirement of 3 AF per acre of pistachio orchard suggest groundwater production estimates between

## Appendix A: Pumping Verification Report for Arthur Hickle

1985 and 2009 may be underestimated; however, a fairly good match between 2013 and 2019.

Finally, in accordance with the Sustainable Groundwater Management Act (SGMA) and California water law, the period between January 2010 and December 2014 has been considered by the IWVGA to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment. Annual groundwater production reported in the response to the Questionnaire during the Base Period are shown in Table A-2. As reported in the response to the Questionnaire, Mr. Hickle's lowest annual Base Period groundwater production of 20.4 AF occurred in 2010, estimated using power consumption records.

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**Table A-1**  
**Well Construction Information**

Well Name/ Number	Date Drilled	Well Depth (feet)	Casing Length (feet)	Static WL (ft, bgs)	Pumping Depth (ft, bgs)	Pump Type	Motor Horsepower	Manufacturer's Pump Rating* (gpm)	Pump Test	Date of Pump Test	Service Status
1	1984	N/A	N/A	272	372	Submersible	N/A	60	N/A	N/A	Active
2	2012	N/A	N/A	270	370	Pressure	N/A	60	N/A	N/A	Active

**Notes:**

- Arthur Hickle did not distinguish between the two pumps in the questionnaire.
- The pump type and rating were inferred from the fact that the well from 1984 has been used for irrigation since then.
- It is unclear if both wells are used for irrigation.
- Pump Rating is estimated based on the flow rate data provided by Arthur Hickle (Appendix (Power Consumption)).

**Table A-2**  
**Annual Groundwater Production Estimates Between 1937 And 2019**

Year	Crop	Questionnaire				Groundwater Use <sup>1</sup> (AF)	Production Difference <sup>2</sup> (AF)
		Land Use (acre)	Groundwater Use (AFY)	Estimate Method	Average Water Use per Acre (AF)		
1937 to 1984	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1985	Pistachios	5.0	3.0	Irrigation Land	0.60	15.0	-12.0
1986	Pistachios	5.0	3.0	Irrigation Land	0.60	15.0	-12.0
1987	Pistachios	5.0	3.0	Irrigation Land	0.60	15.0	-12.0
1988	Pistachios	5.0	3.0	Irrigation Land	0.60	15.0	-12.0
1989	Pistachios	5.0	3.0	Irrigation Land	0.60	15.0	-12.0
1990	Pistachios	10.0	7.0	Irrigation Land	0.70	30.0	-23.0
1991	Pistachios	10.0	7.0	Irrigation Land	0.70	30.0	-23.0
1992	Pistachios	10.0	7.0	Irrigation Land	0.70	30.0	-23.0
1993	Pistachios	10.0	7.0	Irrigation Land	0.70	30.0	-23.0
1994	Pistachios	17.5	10.0	Irrigation Land	0.57	52.5	-42.5
1995	Pistachios	17.5	10.0	Irrigation Land	0.57	52.5	-42.5
1996	Pistachios	17.5	10.0	Irrigation Land	0.57	52.5	-42.5
1997	Pistachios	17.5	10.0	Irrigation Land	0.57	52.5	-42.5
1998	Pistachios	17.5	10.0	Irrigation Land	0.57	52.5	-42.5
1999	Pistachios	17.5	10.0	Irrigation Land	0.57	52.5	-42.5
2000	Pistachios	17.5	10.0	Irrigation Land	0.57	52.5	-42.5
2001	Pistachios	17.5	20.0	Irrigation Land	1.14	52.5	-32.5
2002	Pistachios	17.5	20.0	Irrigation Land	1.14	52.5	-32.5
2003	Pistachios	17.5	20.0	Irrigation Land	1.14	52.5	-32.5
2004	Pistachios	17.5	20.0	Irrigation Land	1.14	52.5	-32.5
2005	Pistachios	17.5	20.0	Irrigation Land	1.14	52.5	-32.5
2006	Pistachios	17.5	20.0	Irrigation Land	1.14	52.5	-32.5
2007	Pistachios	17.5	20.0	Irrigation Land	1.14	52.5	-32.5
2008	Pistachios	17.5	20.0	Irrigation Land	1.14	52.5	-32.5
2009	Pistachios	17.5	20.0	Irrigation Land	1.14	52.5	-32.5
2010	Pistachios	17.5	20.4	Power Consumption	1.17	52.5	-32.1
2011	Pistachios	17.5	20.5	Power Consumption	1.17	52.5	-32.0
2012	Pistachios	17.5	23.8	Power Consumption	1.36	52.5	-28.7
2013	Pistachios	17.5	43.8	Power Consumption	2.50	52.5	-8.7
2014	Pistachios	17.5	52.8	Power Consumption	3.02	52.5	0.3
2015	Pistachios	17.5	52.1	Power Consumption	2.98	52.5	-0.4
2016	Pistachios	17.5	51.7	Power Consumption	2.95	52.5	-0.8
2017	Pistachios	17.5	54.2	Power Consumption	3.10	52.5	1.7
2018	Pistachios	17.5	52.1	Power Consumption	2.98	52.5	-0.4
2019	Pistachios	17.5	47.6	Power Consumption	2.72	52.5	-4.9

**Notes:**

- Based on 3 AF per acre

- Production difference is the difference between the reported groundwater production and the production estimate based on 3 AF water requirement per acre for pistachio orchard

**Table A-3**  
**Reported Annual Groundwater Production Between 2010 and 2014 (unit: acre-foot)**

Year	Number of Wells	Annual Production - Questionnaire 1	Monthly Average	Annual Production - IWVGA	Monthly Average	Discrepancy %	Annual Production - Cooperative Group	Monthly Average	Discrepancy %
2010	1	20.43	1.70	N/A	N/A	N/A	N/A	N/A	N/A
2011	1	20.47	1.71	N/A	N/A	N/A	N/A	N/A	N/A
2012	2	23.80	1.98	N/A	N/A	N/A	N/A	N/A	N/A
2013	2	43.82	3.65	N/A	N/A	N/A	N/A	N/A	N/A
2014	2	52.79	4.40	N/A	N/A	N/A	N/A	N/A	N/A

**Notes:**

- Discrepancy % is calculated by using

$$Discrepancy \% = \left[ 1 - \frac{Reported\ Extraction\ (IWVGA\ or\ Cooperative\ Group)}{Reported\ Extraction\ (Questionnaire\ 1)} \right] \times 100\%$$

- Mr. Hickle reported groundwater production of 47.63 AF in 2019. The IWVGA report has a record of 15.4 AF in 2019.

- The discrepancy is 67.7% (the IWVGA production data is about 1/3 of the reported production).

**Table A-4**  
**Summary of Land Use and Water Use**

Year	Total Property Land (acre)	Agricultural			Domestic Usage (acre-foot)	Commercial Usage (acre-foot)	Industrial Usage (acre-foot)	Total Water Usage (acre-foot)
		Crop	Land Use (acres)	Water Use (acre-foot)				
2010	20.5	Pistachios	17.5	20.43	N/A	N/A	N/A	20.43
2011	20.5	Pistachios	17.5	20.47	N/A	N/A	N/A	20.47
2012	20.5	Pistachios	17.5	23.80	N/A	N/A	N/A	23.80
2013	20.5	Pistachios	17.5	43.82	N/A	N/A	N/A	43.82
2014	20.5	Pistachios	17.5	52.79	N/A	N/A	N/A	52.79

**APPENDIX B**  
**Verification Report for**  
**China Lake Acres Mutual Water Company**

## **Appendix B: Pumping Verification Report for China Lake Acres Mutual Water Company**

The purpose of this Pumping Verification Report (Report) is to verify and certify to the extent possible, all groundwater production from the China Lake Acres Mutual Water Company for the years between 1937 and 2019, with particular emphasis on the Base Period for use in establishing Annual Pumping Allocations and determining eligibility for the Transient Pool. An analysis of the verification data, the methods of verification, and findings on the Producer's pumping are presented herein.

### **History**

The China Lake Acres Mutual Water Company (CLAMWC) was incorporated in October 1979 to provide water to the rural area of China Lake Acres, located within Kern County approximately 3 miles west of the City of Ridgecrest. Groundwater production by the CLAMWC is reported to have begun in October 1979, and is solely used to provide potable water to customers. CLAMWC's service area consists of approximately 60 acres of land with 60 service connections that are served potable water produced by CLAMWC. Individual meters are located on each property. As reported in the Questionnaire, CLAMWC produced approximately 1,633,770 cubic feet [approximately 37.5 acre-feet (AF)] of groundwater during 2019, and estimates that the same quantity of groundwater was produced each year since incorporation. Estimates of groundwater production were provided using the combined total of all individual meter reads, though further details of individual groundwater extractions were not provided.

### **Description of Facilities**

The CLAMWC has historically operated (and currently operates) two (2) groundwater production wells and no inactive wells. No information about well construction, drill date, or pump type/capacity was provided in the Questionnaire. The California SWRCB (SWRCB) online well database lists that 2 active groundwater production wells are currently owned by CLAMWC, though additional well construction information was also not available.



## **Groundwater Production**

Historical groundwater production as reported in the Questionnaire was based on the sum of all individual meter records since incorporation of the CLAMWC in 1979. Groundwater production data from the Indian Wells Valley Cooperative Groundwater Management Group (Cooperative Group) indicates that an entity referred to as “China Lake Acres” produced 400 AFY of groundwater each year from 1975 to 1986, and was then purchased by the Indian Wells Valley Water District. Indian Wells Valley Water District staff has confirmed in writing that the “China Lake Acres” entity recorded in the Cooperative Group production data is not the CLAMWC but a different entity entirely. Therefore, the “China Lake Acres” production recorded by the Cooperative Group was not used for the purpose of groundwater pumping verification by the CLAMWC. . The Authority has no historic reported groundwater production data specific to CLAMWC, except for the Authority’s monthly groundwater production records between September 2018 and December 2019. Annual groundwater production estimates reported for CLAMWC between 1979 and 2019 are provided on Table B-1.

## **Verification Data and Information**

All of the data described below were utilized in the verification of the groundwater production by the CLAMWC from the Basin.

### **Groundwater Production Questionnaire**

CLAMWC provided records of combined groundwater production from the two (2) wells between 1979 and 2019. Groundwater production for the period between 1979 and 2019 (see Table B-1) was estimated based on the sum of individual meter reads on properties served by CLAMWC. Annual groundwater production from 1979 to 2009 as reported in the Questionnaire, is shown on Table B-2.

Annual groundwater production during the Base Period (from 2010 to 2014) as reported in the Questionnaire, is shown on Table B-3. Due to the lack of available groundwater production records from the Cooperative Group, a comparison of

## **Appendix B: Pumping Verification Report for China Lake Acres Mutual Water Company**

groundwater production as reported in the Questionnaire and as documented by the Cooperative Group was not performed in Table B-3. The Authority does not have production records prior to September 2018; therefore, a comparison between the reported production in the Questionnaire and the data documented by the Authority was not performed either.

Between 2010 and 2014, annual groundwater production reported in the Questionnaire remained at a constant 37.51 AF.

### **Basis of Verification**

The available data discussed in the “**Verification Data and Information**” section was considered in the verification of groundwater production by the CLAMWC.

### **Records of Groundwater Production from the Authority and the Cooperative Group**

Significant records of Base Period groundwater production from the Cooperative Group and the Authority were not available for CLAMWC, except for monthly groundwater production reports submitted to the Authority between September 2018 and December 2019. As reported in the Questionnaire, annual groundwater production during 2019 was 37.51 AF; groundwater production data reported to the Authority in 2019 was also 37.51 AF. There is no discrepancy between groundwater production reported in the Questionnaire, and groundwater production submitted to the Authority.

### **Review of Methods and Verification and Conclusions**

Groundwater production by CLAMWC wells is used to provide potable water to customers. Groundwater production by CLAMWC wells is not used for any type of agricultural irrigation. Although the reported groundwater production in the Questionnaire covers the period between 1979 and 2019, verifications of groundwater production

## **Appendix B: Pumping Verification Report for China Lake Acres Mutual Water Company**

between data collected from the Cooperative Group and the Questionnaire were not performed because the Cooperative Group has no accurate production records for this producer. Groundwater production was reported for 2019 to the Authority, and based on the 2019 Authority records, the CLAMWC's groundwater production is equal to the reported production in the Questionnaire.

The annual groundwater production reported in the Questionnaire between 1979 and 2019 were estimated based on the sum of individual meter reads on the properties served by CLAMWC. The method to estimate groundwater production based on individual meter reads is generally reliable and accurate.

Finally, in accordance with the Sustainable Groundwater Management Act (SGMA) and California water law, the period between January 2010 and December 2014 has been considered by the IWVGA to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment. Annual groundwater production by CLAMWC as reported in the response to the Questionnaire during the Base Period are shown in Table B-3. As reported in the response to the Questionnaire, the CLAMWC's production remained constant at 37.51 AF during each year of the Base Period, estimated using the sum of individual metered records on all properties within CLAMWC's service area. Therefore, the lowest annual Base Period groundwater production for CLAMWC cannot be determined.

**Table B-1**

**Data Source Used For Groundwater Production Estimation**

<b>Year</b>	<b>Groundwater Production (acre-foot)</b>	<b>Estimate Method</b>
1979	37.51	Meter
1980	37.51	Meter
1981	37.51	Meter
1982	37.51	Meter
1983	37.51	Meter
1984	37.51	Meter
1985	37.51	Meter
1986	37.51	Meter
1987	37.51	Meter
1988	37.51	Meter
1989	37.51	Meter
1990	37.51	Meter
1991	37.51	Meter
1992	37.51	Meter
1993	37.51	Meter
1994	37.51	Meter
1995	37.51	Meter
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2008	37.51	Meter
2009	37.51	Meter
2010	37.51	Meter
2011	37.51	Meter
2012	37.51	Meter
2013	37.51	Meter
2014	37.51	Meter
2015	37.51	Meter
2016	37.51	Meter
2017	37.51	Meter
2018	37.51	Meter
2019	37.51	Meter

**Notes:**

- Groundwater extraction was the sum of all individual meters.
- Details of individual extractions were not provided.

**Table B-2**  
**Comparisons of Reported Annual Groundwater Production Between 1979 and 2009**  
**(unit: acre-foot)**

Year	Number of Wells	Annual Production - Questionnaire 1	Monthly Average	Annual Production - IWVGA	Monthly Average	Discrepancy %	Annual Production - Cooperative Group	Monthly Average	Discrepancy %
1979	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
1980	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
1981	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
1982	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
1983	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
1984	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
1985	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
1986	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
1987	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
1988	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
1989	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
1990	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
1991	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
1992	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
1993	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
1994	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
1995	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
1996	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
1997	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
1998	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
1999	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
2000	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
2001	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
2002	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
2003	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
2004	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
2005	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
2006	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
2007	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
2008	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
2009	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A

**Table B-3**

**Reported Annual Groundwater Production Between 2010 and 2014 (unit: acre-foot)**

Year	Number of Wells	Annual Production - Questionnaire 1	Monthly Average	Annual Production - IWVGA	Monthly Average	Discrepancy %	Annual Production - Cooperative Group	Monthly Average	Discrepancy %
2010	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
2011	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
2012	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
2013	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A
2014	2	37.51	3.13	N/A	N/A	N/A	N/A	N/A	N/A

**Notes:**

- Discrepancy % is calculated by using

$$Discrepancy \% = \left[ 1 - \frac{Reported\ Extraction\ (IWVGA\ or\ Cooperative\ Group)}{Reported\ Extraction\ (Questionnaire\ 1)} \right] \times 100\%$$

- China Lake Acres Mutual Water Company provided groundwater production of 37.51 AF in 2019.

- The IWVGA report also has a record of 37.51 AF in 2019.

- In addition, Cooperative Group has a record of China Lake Acres Mutual Water Company's annual extraction between 1975 and 1986.

- The average annual extraction of 400 AFY is significant higher than the China Lake Acres Mutual Water Company reported extraction.

**APPENDIX C**  
**Verification Report for**  
**CHLT Water Group**

## Appendix C: Pumping Verification Report for CHLT Water Group

The purpose of this Pumping Verification Report (Report) is to verify and certify to the extent possible, all groundwater production from the CHLT Water Group for the years between 1937 and 2019, with particular emphasis on the Base Period for use in establishing Annual Pumping Allocations and determining eligibility for the Transient Pool. An analysis of the verification data, the methods of verification, and findings on the Producer's pumping are presented herein.

### History

The CHLT Water Group (CHLT) is a cooperative water group consisting of four (4) 5-acre parcels (total of 20 acres) using equally-shared and equally-owned common groundwater production wells. The IWVGA Pumping Verification Questionnaire for CHLT was submitted by one (1) CHLT parcel owner, Mr. Edward Tipler, on February 3, 2020. As stated in the Questionnaire, groundwater production by CHLT is estimated to have begun in 1998, when Mr. Tipler purchased his parcel. Mr. Tipler noted that a previous owner had constructed housing on his parcel around 1987, though groundwater production data between 1987 and 1998 was not provided. Mr. Tipler indicated that he was not aware of the date of construction on two (2) of the other parcels within CHLT, though the date of construction on the fourth parcel is estimated by Mr. Tipler to be around 2005.

Groundwater production by CHLT wells is used to provide potable water to the four parcels for general domestic uses, plus landscape irrigation including irrigation of windbreak trees. As stated in the Questionnaire, groundwater production by CHLT wells is not used for any type agricultural irrigation. Individual meters have been used on each parcel since 2013, when the meters were first installed. As reported in the Questionnaire, since meters were installed in 2013, the reported groundwater use of each of the four parcels in CHLT is estimated to be 2.603 acre-feet per year (AFY) using meter records, and a combined total annual groundwater production of 10.41 AFY for all four parcels. Prior to meter installation in 2013, groundwater production was not recorded, and the



member parcels paid an equal quarterly contribution to CHLT for expenses including maintenance, repair, and electricity.

### **Description of Facilities**

Three of the parcels (Kern County Assessor's Parcel Nos. 455-070-07, 455-070-08, 455-070-16), which includes the parcel owned by Mr. Tipler, use only one (1) active groundwater production well. The construction date of this well is estimated by Mr. Tipler to be around 1987. According to the Questionnaire, the original drilling depth of this well was not documented but is estimated by Mr. Tipler to be 250 feet below ground surface (bgs). Previous well maintenance records were also not documented, but Mr. Tipler indicated that a static water level of 185 feet bgs and a pumping depth of 220 feet bgs were last observed (date of observation not provided). The well has been fitted with a meter since installation, but meters were not installed on individual parcels until 2013.

The fourth parcel (Kern County Assessor's Parcel No. 455-070-15) uses one (1) additional active groundwater production well. Well construction information for this additional well was not directly provided in the Questionnaire, but Mr. Tipler estimates the construction date of the well to be in 2016. There are currently no inactive wells owned by any of the four parcel owners within CHLT. Well construction data for the two (2) wells operated by the parcel owners of CHLT are provided in Table C-1.

### **Groundwater Production**

Historical groundwater production as reported in the Questionnaire was based on individual parcel meter records since meter installation in 2013. Groundwater production data from the Indian Wells Valley Cooperative Groundwater Management Group (Cooperative Group) was not available for CHLT specifically. The Authority has no historic reported groundwater production data specific to CHLT, except for the Authority's monthly groundwater production records between September 2018 and December 2019. Annual

groundwater production estimates reported for CHLT between 1987 and 2019 are provided on Table C-2.

### **Verification Data and Information**

All of the data described below were utilized in the verification of the groundwater production by CHLT from the Basin.

#### **Groundwater Production Questionnaire**

CHLT provided records of combined groundwater production from the two (2) wells between 2013 and 2019. Groundwater production by CHLT for the period between 2013 and 2019 (see Table C-2) was estimated based on meter records on the parcels served by CHLT wells. Annual groundwater production by CHLT during the Base Period (from 2010 to 2014) as reported in the Questionnaire, is shown on Table C-3. Due to the lack of available groundwater production records during the Base Period from the Cooperative Group, a comparison of groundwater production as reported in the Questionnaire and as documented by the Cooperative Group was not performed in Table C-3. The Authority does not have production records for CHLT prior to September 2018; therefore, a comparison between the reported production in the Questionnaire and the data documented by the Authority was not performed either. No annual groundwater production data was provided in the Questionnaire for the years 2010, 2011, and 2012. In 2013 and 2014, annual groundwater production reported in the Questionnaire remained at a constant 10.41 AF.

#### **Basis of Verification**

The available data discussed in the “**Verification Data and Information**” section was considered in the verification of groundwater production by the CHLT.

### **Records of Groundwater Production from the Authority and the Cooperative Group**

Significant records of Base Period groundwater production from the Cooperative Group and the Authority were not available for CHLT, except for monthly groundwater production reports submitted to the Authority between September 2018 and December 2019. As reported in the Questionnaire, annual groundwater production during 2019 was 10.41 AF; groundwater production data reported to the Authority in 2019 was 9.61 AF. There is a discrepancy of approximately 7.7% between 2019 groundwater production reported in the Questionnaire, and 2019 groundwater production submitted to the Authority.

### **Review of Methods and Verification and Conclusions**

Groundwater production by CHLT wells is used to provide potable water to the four parcels within CHLT for general domestic uses, plus landscape irrigation including irrigation of windbreak trees. As stated in the Questionnaire, groundwater production by CHLT wells is not used for any type agricultural irrigation. Although the reported groundwater production in the Questionnaire covers the period between 2013 and 2019, verifications of groundwater production between data collected from the Cooperative Group and the Questionnaire were not performed because the Cooperative Group has no accurate production records for this producer. Groundwater production was reported for 2019 to the Authority, and based on the 2019 Authority records, CHLT's groundwater production is nearly equal to the reported production in the Questionnaire, with a discrepancy of approximately 7.7%.

The annual groundwater production reported in the Questionnaire between 2013 and 2019 were estimated based on individual meter records on the parcels served by CHLT wells. The method to estimate groundwater production based on individual meter records is generally reliable and accurate.

## Appendix C: Pumping Verification Report for CHLT Water Group

Finally, in accordance with the Sustainable Groundwater Management Act (SGMA) and California water law, the period between January 2010 and December 2014 has been considered by the IWVGA to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment. Annual groundwater production by CHLT as reported in the response to the Questionnaire during the Base Period are shown in Table C-3. As reported in the response to the Questionnaire, CHLT's groundwater production was not provided/recorded during 2010, 2011, and 2012. Meters were installed on each parcel in 2013, and total groundwater production remained constant at 10.41 acre-feet during 2013 and 2014, estimated using individual metered records on all parcels served by CHLT wells.

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**Table C-1**  
**Well Construction Information**

Well Name/ Number	Date Drilled	Well Depth (feet)	Casing Length (feet)	Static WL (ft, bgs)	Pumping Depth (ft, bgs)	Pump Type	Motor Horsepower	Manufacturer's Pump Rating (gpm)	Pump Test	Date of Pump Test	Service Status
1 <sup>1</sup>	1987	250	N/A	185	220	N/A	N/A	N/A	N/A	N/A	Active
2 <sup>2</sup>	2016	250	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active

General Comments:

- Wells estimated to be drilled in 1987, prior to the purchasing of the property in 1998.
- Well construction information is not provided. Extracted groundwater is used for household purposes only.
- There is a main meter installed for both wells. No meter readings were provided.

**Notes:**

<sup>1</sup> Well construction information and static water level data were estimated. No measurements provided.

<sup>2</sup> Well drill date was estimated. Well construction information and static water level data were not provided

**Table C-2**

**Data Source Used For Groundwater Production Estimation**

<b>Year</b>	<b>Groundwater Production (acre-feet)</b>	<b>Estimate Method</b>	<b>Remark</b>
1987	N/A	N/A	No data provided
1988	N/A	N/A	No data provided
1989	N/A	N/A	No data provided
1990	N/A	N/A	No data provided
1991	N/A	N/A	No data provided
1992	N/A	N/A	No data provided
1993	N/A	N/A	No data provided
1994	N/A	N/A	No data provided
1995	N/A	N/A	No data provided
1996	N/A	N/A	No data provided
1997	N/A	N/A	No data provided
1998	N/A	N/A	No data provided
1999	N/A	N/A	No data provided
2000	N/A	N/A	No data provided
2001	N/A	N/A	No data provided
2002	N/A	N/A	No data provided
2003	N/A	N/A	No data provided
2004	N/A	N/A	No data provided
2005	N/A	N/A	No data provided
2006	N/A	N/A	No data provided
2007	N/A	N/A	No data provided
2008	N/A	N/A	No data provided
2009	N/A	N/A	No data provided
2010	N/A	N/A	No data provided
2011	N/A	N/A	No data provided
2012	N/A	N/A	No data provided
2013	10.41	Meter	Meter installed
2014	10.41	Meter	-
2015	10.41	Meter	-
2016	10.41	Meter	-
2017	10.41	Meter	-
2018	10.41	Meter	-
2019	10.41	Meter	-

**Notes:**

- CHLT Water Group indicated in the response to the Questionnaire that one parcel produces 1 AF per year while the remaining three parcels equally produce the remaining amount (9.41 AF).

**Table C-3**  
**Reported Annual Groundwater Production Between 2010 and 2014 (unit: acre-feet)**

Year	Number of Wells	Annual Production - Questionnaire 1	Monthly Average	Annual Production - IWVGA	Monthly Average	Discrepancy %	Annual Production - Cooperative Group	Monthly Average	Discrepancy %
2010	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2011	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2012	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2013	2	10.41	0.87	N/A	N/A	N/A	N/A	N/A	N/A
2014	2	10.41	0.87	N/A	N/A	N/A	N/A	N/A	N/A

**Notes:**

- Discrepancy % is calculated by using

$$Discrepancy \% = \left[ 1 - \frac{Reported\ Extraction\ (IWVGA\ or\ Cooperative\ Group)}{Reported\ Extraction\ (Questionnaire\ 1)} \right] \times 100\%$$

- CHLT estimated groundwater production of 10.41 AF in 2019. The IWVGA report has a record of 9.61 AF in 2019.
- The discrepancy is 7.68 % (the IWVGA production data is slightly less than the CHLT estimated production).

**APPENDIX D**  
**Verification Report for**  
**City of Ridgecrest**



## **Appendix D: Pumping Verification Report for City of Ridgecrest**

The purpose of this Pumping Verification Report (Report) is to verify and certify to the extent possible, all groundwater production from the City of Ridgecrest for the years between 1937 and 2019, with particular emphasis on the Base Period for use in establishing Annual Pumping Allocations and determining eligibility for the Transient Pool. An analysis of the verification data, the methods of verification, and findings on the Producer's pumping are presented herein.

### **History**

The City of Ridgecrest (City) owns five (5) groundwater wells:

1. Well located in the Kerr McGee Sports Complex
  - a. Kern County Assessor Parcel Number (APN) 508-020-08.
2. Two (2) wells located in northwest and southwest Leroy Jackson Park
  - a. Kern County APN 396-911-11
3. Well located in Freedom Park
  - a. Kern County APN 478-010-07
4. Well located in Pearson Park
  - a. Kern County APN 453-111-01

The City indicated that groundwater has been extracted for landscaping irrigation since the 1970's and 1980's. The City has irrigated approximately 39 acres of City-owned land since the beginning of groundwater extractions. The volume of extracted groundwater was not measured prior to 2019 because the extracted groundwater was fed into an irrigation system with an automatic timing system. Water meters were installed in January 2019 to accurately measure groundwater extractions.

### **Description of Facilities**

The City has historically operated (and currently operates) five (5) groundwater production wells and no inactive wells. In the response to the Questionnaire, the City indicated that its wells were drilled during the 1970s and/or 1980s; however, well drilling dates and well completion reports for the City's wells were not provided in the response

to the Questionnaire. The well located in the Kerr McGee Sports Complex had a static water level measurement of 210 feet below ground service (bgs) and a groundwater intake location of 273 feet bgs. The well located in the Northwest Leroy Jackson Park had a static water level measurement of 150 feet bgs and a groundwater intake location of 315 feet bgs. The well located in the Southwest Leroy Jackson Park had a static water level measurement of 147 feet bgs, though a groundwater intake location was not provided. No well construction, static water level, and pump information for the other two (2) wells (located in the Freedom Park and the Pearson Park) were provided in the response to the Questionnaire. Available information about well construction, drill date, or pump type/capacity provided in the response to the Questionnaire is summarized in Table D-1.

### **Groundwater Production**

The City indicated in the response to the Questionnaire that groundwater extractions probably started in the 1970's and/or 1980's. The Indian Wells Valley Cooperative Groundwater Management Group (Cooperative Group) has recorded groundwater production for the City from the years 2002 to 2016, and the City has referenced these records as their estimated production during these years. The City installed flow meters in January 2019 to measure groundwater extractions; however, the metered groundwater production after 2019 was not provided in the response to the Questionnaire. The reported annual groundwater production values between 2012 and 2019 are provided on Table D-2.

### **Verification Data and Information**

All of the data provided in the Questionnaire that can be used in the verification of groundwater production is described below.

## **Groundwater Production Questionnaire**

The City submitted records of combined groundwater production recorded by the Cooperative Group for the five (5) wells between 2002 and 2016. Extracted groundwater was mainly used for the landscaping irrigation on 39 acres of land owned by the City. Based on the Cooperative Group's annual production records, the average irrigated water per acre is approximately 10.4 feet (see Table D-2).

## **Basis of Verification**

The available data discussed in the "**Verification Data and Information**" section was considered in the verification of groundwater production by the City.

## **Records of Groundwater Production from the Authority and the Cooperative Group**

Although the Authority's record of 2019 groundwater extraction by the City is 145.8 AF, the 2019 production appears to be low when compared to the average annual groundwater production of 407.3 AF between 2002 and 2016 obtained from the Cooperative Group (see Table D-2). Annual groundwater production during the Base Period (from 2010 to 2014) as reported in the response to the Questionnaire, is shown on Table D-3.

## **Review of Methods and Verification and Conclusions**

The City does not apply extracted groundwater for agricultural purposes. Extracted groundwater is only used for landscaping irrigation. In the response to the Questionnaire, the City reported its annual groundwater production using the Cooperative Group production records; therefore, a comparison between the reported production in the response to the Questionnaire and the Cooperative Group production records was not performed. The Authority's record of 2019 groundwater extraction by the City is 145.8 AF; however, the Authority's 2019 production appears to be low when compared to the

## Appendix D: Pumping Verification Report for City of Ridgecrest

average annual groundwater production of 407.3 AF reported by the City to the Cooperative Group between 2002 and 2016 (see Table D-2). In addition, verifications of groundwater production based on power consumption data and/or empirical equations were not performed due to the lack of data provided in the response to the Questionnaire.

Finally, in accordance with the Sustainable Groundwater Management Act (SGMA) and California water law, the period between January 2010 and December 2014 has been considered by the IWVGA to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment. Annual groundwater production reported in the response to the Questionnaire during the Base Period as shown in Table D-3 indicates that the City's lowest annual Base Period groundwater production of 339.0 AF occurred in 2010, estimated based on the groundwater production presented by the Cooperative Group.

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**Table D-1  
Well Construction Information**

Well Name/ Number	Date Drilled	Well Depth (feet)	Casing Length (feet)	Static WL (ft, bgs)	Pumping Depth (ft, bgs)	Pump Type	Motor Horsepower	Manufacturer's Pump Rating (gpm)	Pump Test	Date of Pump Test	Service Status
Kerr Mcgee Sports Complex	1970's / 1980's	N/A	N/A	210	273	N/A	N/A	N/A	N/A	N/A	Active
NW Leroy Jackson Park		N/A	N/A	150	315	N/A	N/A	N/A	N/A	N/A	Active
SW Leroy Jackson Park		N/A	N/A	147	N/A	N/A	N/A	N/A	N/A	N/A	Active
Freedom Park		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
Pearson Park		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active

**Notes:**

- City of Ridgecrest owns 5 active wells and pumped groundwater is used for landscaping purposes.
- Groundwater wells are estimated to be drilled between 1970 and 1980.

**Table D-2**  
**Annual Groundwater Production Estimates Between 1937 And 2019**

Year	Crop	Questionnaire			
		Land Use (acre)	Groundwater Use (AFY)	Estimate Method	Average Water Use per Acre (acre-feet)
1937 to 2001	N/A	N/A	N/A	N/A	N/A
2002	No	39.0	445.0	NA	11.41
2003	No	39.0	616.0	Cooperative Group Report	15.79
2004	No	39.0	413.0	Cooperative Group Report	10.59
2005	No	39.0	366.0	Cooperative Group Report	9.38
2006	No	39.0	385.0	Cooperative Group Report	9.87
2007	No	39.0	420.0	Cooperative Group Report	10.77
2008	No	39.0	392.0	Cooperative Group Report	10.05
2009	No	39.0	400.0	Cooperative Group Report	10.26
2010	No	39.0	339.0	Cooperative Group Report	8.69
2011	No	39.0	370.0	Cooperative Group Report	9.49
2012	No	39.0	348.0	Cooperative Group Report	8.92
2013	No	39.0	423.0	Cooperative Group Report	10.85
2014	No	39.0	392.0	Cooperative Group Report	10.05
2015	No	39.0	427.0	Cooperative Group Report	10.95
2016	No	39.0	373.0	Cooperative Group Report	9.56
2017	No	39.0	N/A	NA	NA
2018	No	39.0	N/A	NA	NA
2019	No	39.0	145.8	Meter	3.74
Average		39.0	407.3		10.44

Table D-3

Reported Annual Groundwater Production Between 2010 and 2014 (unit: acre-foot)

Year	Number of Wells	Annual Production - Questionnaire 1*	Monthly Average	Annual Production - IWVGA	Monthly Average	Discrepancy %	Annual Production - Cooperative Group	Monthly Average	Discrepancy %
2010	5	339.0	28.3	N/A	N/A	N/A	339.0	28.3	0.0%
2011	5	370.0	30.8	N/A	N/A	N/A	370.0	30.8	0.0%
2012	5	348.0	29.0	N/A	N/A	N/A	348.0	29.0	0.0%
2013	5	423.0	35.3	N/A	N/A	N/A	423.0	35.3	0.0%
2014	5	392.0	32.7	N/A	N/A	N/A	392.0	32.7	0.0%

**Notes:**

- Discrepancy % is calculated by using

$$Discrepancy \% = \left[ 1 - \frac{Reported\ Extraction\ (IWVGA\ or\ Cooperative\ Group)}{Reported\ Extraction\ (Questionnaire\ 1)} \right] \times 100\%$$

- Well flow meters were installed in 2019, as reported in the response to the Questionnaire.

- The Authority has a production record of 145.8 AF in 2019.

\* The Cooperative Group production records were used by the City of Ridgecrest and reported in the Questionnaire.

**APPENDIX E**  
**Verification Report for**  
**Indian Wells Valley Water District**



## **Appendix E: Pumping Verification Report for Indian Wells Valley Water District**

The purpose of this Pumping Verification Report (Report) is to verify and certify to the extent possible, all groundwater production from the Indian Wells Valley Water District for the years between 1937 and 2019, with particular emphasis on the Base Period for use in establishing Annual Pumping Allocations and determining eligibility for the Transient Pool. An analysis of the verification data, the methods of verification, and findings on the Producer's pumping are presented herein.

### **History**

The Indian Wells Valley Water District (IWWVD) is the successor agency to the Ridgecrest County Water District, which was formed in January 1955 as a result of consolidation of several small water companies serving domestic water in the City of Ridgecrest area. The IWWVD has been operating under its current name since 1980, but groundwater production by the IWWVD and its preceding agencies dates back to 1943. Groundwater production by the IWWVD is solely used to provide potable water to customers. The IWWVD service area encompasses approximately 38 square miles with approximately (at the time of this Report) 14,064 service connections that are served potable water produced by IWWVD. Individual meters are used to track water use on the property of IWWVD customers, and master meters are used to track water use for multi-family dwellings. As reported in the Questionnaire, IWWVD produced approximately 6,120.1 acre-feet (AF) of groundwater during 2019. Estimates of groundwater production were provided in the Questionnaire for the period from 1943 to 2019 using a combination of historic census population data and metered production records.

### **Description of Facilities**

No information on number of wells, well construction, or well/pump status was provided in the Questionnaire. According to the State Water Resources Control Board (SWRCB) database, the IWWVD currently operates ten (10) active groundwater production wells and one (1) pending well. A summary of the current IWWVD wells is provided in Table E-1.

## **Groundwater Production**

Historical groundwater production as reported in the Questionnaire was based on a combination of historic census population data and meter production records. Groundwater production records from the Cooperative Group exists for the period between 1975 and 2017. The Authority has no historic reported groundwater production data specific to IWVWD, except for the Authority's monthly groundwater production records between September 2018 and December 2019. Annual groundwater production estimates reported for IWVWD between 1979 and 2019 are provided on Table E-2.

## **Verification Data and Information**

All of the data described below were utilized in the verification of the groundwater production by the IWVWD from the Basin.

### **Groundwater Production Questionnaire**

IWVWD provided records of total groundwater production between 1943 and 2019. Groundwater production for the period between 1943 and 2019 (see Table E-2) was estimated based on a combination of historic census population data and meter production records. A comparison between the IWVWD's production as reported in the Questionnaire and the IWVWD's groundwater production data from 1975 to 2017 as recorded by the Cooperative Group was performed, and it was determined that the IWVWD's reported production from the Questionnaire exactly matches the Cooperative Group data for the years available.

Annual groundwater production during the Base Period (from 2010 to 2014) as reported in the Questionnaire, is shown on Table E-3. Groundwater production during the 2010 to 2014 Base Period exactly matched the values recorded by the Cooperative Group for the same period. The Authority does not have production records prior to September 2018, though a full year of IWVGA production records was available for 2019. According to the IWVGA production records, the IWVWD produced approximately 6,116.2 AF during

calendar year 2019, compared to approximately 6,120.1 AF as reported in the Questionnaire.

Between 2010 and 2014, annual groundwater production reported in the Questionnaire ranged from 7,318.7 AF (2014) to 7,633.5 AF (2012), with an annual average of approximately 7,483.6 AF.

### **Basis of Verification**

The available data discussed in the “**Verification Data and Information**” section was considered in the verification of groundwater production by the IWVWD.

### **Records of Groundwater Production from the Authority and the Cooperative Group**

Records of Base Period groundwater production from the Cooperative Group were available for comparison to the IWVWD’s reported production as provided in the Questionnaire. The IWVWD’s reported production exactly matches the production recorded by the Cooperative Group for the period from 1975 to 2017 (including the Base Period). Significant records of Base Period groundwater production from the Authority were not available for IWVWD, except for monthly groundwater production reports submitted to the Authority between September 2018 and December 2019. As reported in the Questionnaire, IWVWD groundwater production during 2019 was 6,120.1 AF, while groundwater production data reported to the Authority in 2019 was 6,116.2 AF. There is minimal difference (less than 1%) between the IWVWD’s groundwater production reported in the Questionnaire, and groundwater production submitted to the Authority during 2019.

### **Population Data**

IWVWD production data reported in the Questionnaire from 1943 to 1973 was estimated by applying per-capita water use to the historic population of the City of

Ridgecrest, estimated using <https://population.us>. It should be noted that the IWWWD's service area currently includes the City of Ridgecrest, as well as certain unincorporated areas outside of the City of Ridgecrest's jurisdiction. The extent of the IWWWD's service area during the period from 1943 to 1973 was not specified in the Questionnaire. Per-capita water use was estimated in the Questionnaire to be 0.21 AF per person from 1943 to 1969, and 0.25 AF per person from 1970 to 1973. Assuming that these values correspond to annual water use, per-capita water use was estimated in the Questionnaire to be 187 gallons per day per person from 1943 to 1973, and 223 gallons per day per person from 1970 to 1973. These values of per-capita water use are likely appropriate for the given time period and the use of water by Indian Wells Valley residents for domestic uses and for irrigation of landscaping and windbreak trees.

### **Review of Methods and Verification and Conclusions**

In the response to the Questionnaire, the IWWWD estimated that production from the Basin began in 1943 from smaller water companies that were consolidated to form the Ridgecrest County Water District, the IWWWD's predecessor agency. Groundwater production by IWWWD wells is used to provide potable water to customers. Groundwater production by IWWWD wells is not used for any type of agricultural irrigation. The IWWWD's reported production in the Questionnaire exactly matches the Cooperative Group's production records from 1975 to 2017. Groundwater production was reported for 2019 to the Authority, and based on the 2019 Authority records, the IWWWD's groundwater production is nearly equal to the reported production in the Questionnaire.

Annual groundwater production reported in the Questionnaire between 1943 and 1973 was estimated based on historic census population data and per-capita water use, while annual groundwater production reported in the Questionnaire between 1974 and 2019 (including the Base Period) was estimated based on metered records. The production estimates between 1943 and 1973 are likely appropriate given the time period and the use of water by Indian Wells Valley residents for domestic uses and for irrigation of landscaping and windbreak trees. Metered records are generally considered reliable and accurate methods of groundwater production estimation.

## **Appendix E: Pumping Verification Report for Indian Wells Valley Water District**

Finally, in accordance with the Sustainable Groundwater Management Act (SGMA) and California water law, the period between January 2010 and December 2014 has been considered by the IWVGA to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment. Annual groundwater production by IWVWD as reported in the response to the Questionnaire during the Base Period are shown in Table E-3. As reported in the response to the Questionnaire, the IWVWD's lowest production during the Base Period was 7,318.7 AF in 2014.

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**Table E-1**  
**Well Construction Information**

Well Name/ Number	Date Drilled	Well Depth (feet)	Casing Length (feet)	Static WL (ft, bgs)	Pumping Depth (ft, bgs)	Pump Type	Motor Horsepower	Manufacturer's Pump Rating (gpm)	Pump Test	Date of Pump Test	Service Status
Well 09A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
Well 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
Well 11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
Well 13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
Well 17	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
Well 18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
Well 30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
Well 31	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
Well 33	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
Well 34	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
Well 35	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Pending

**Notes:**

- According to SWRCB online database, IWVWD owns 11 wells (10 active and 1 pending)
- The other wells have either destroyed or abandoned.

**Table E-2  
Data Source Used For Groundwater Production Estimation**

<b>Year</b>	<b>Groundwater Production (acre-foot)</b>	<b>Estimate Method</b>	<b>Remark: Population*</b>
1943	41.2	Population	196
1944	95.8	Population	456
1945	150.8	Population	718
1946	205.8	Population	980
1947	260.8	Population	1,242
1948	315.8	Population	1,504
1949	370.9	Population	1,766
1950	425.9	Population	2,028
1951	467.0	Population	2,224
1952	512.1	Population	2,439
1953	561.6	Population	2,674
1954	615.9	Population	2,933
1955	675.3	Population	3,216
1956	740.6	Population	3,527
1957	812.1	Population	3,867
1958	890.6	Population	4,241
1959	976.6	Population	4,651
1960	1,070.8	Population	5,099
1961	1,114.8	Population	5,309
1962	1,160.6	Population	5,527
1963	1,208.3	Population	5,754
1964	1,258.0	Population	5,990
1965	1,287.0	Population	6,237
1966	1,363.5	Population	6,493
1967	1,419.6	Population	6,760
1968	1,477.9	Population	7,038
1969	1,538.6	Population	7,327
1970	1,930.0	Population	7,629
1971	2,053.0	Population	8,212
1972	2,209.8	Population	8,839
1973	2,378.6	Population	9,515
1974	2,794.0	Meter	N/A
1975	2,983.0	Meter	N/A
1976	3,099.0	Meter	N/A
1977	3,063.0	Meter	N/A
1978	3,357.0	Meter	N/A
1979	3,402.0	Meter	N/A
1980	3,319.0	Meter	N/A
1981	4,223.0	Meter	N/A
1982	3,963.0	Meter	N/A
1983	4,316.0	Meter	N/A
1984	4,940.0	Meter	N/A
1985	4,981.0	Meter	N/A

**Table E-2  
Data Source Used For Groundwater Production Estimation**

<b>Year</b>	<b>Groundwater Production (acre-foot)</b>	<b>Estimate Method</b>	<b>Remark: Population*</b>
1986	5,901.0	Meter	N/A
1987	7,426.0	Meter	N/A
1988	7,889.0	Meter	N/A
1989	8,725.0	Meter	N/A
1990	8,600.0	Meter	N/A
1991	7,700.0	Meter	N/A
1992	7,650.0	Meter	N/A
1993	7,800.0	Meter	N/A
1994	8,300.0	Meter	N/A
1995	8,100.0	Meter	N/A
1996	8,504.0	Meter	N/A
1997	8,534.0	Meter	N/A
1998	7,719.0	Meter	N/A
1999	8,242.0	Meter	N/A
2000	8,148.0	Meter	N/A
2001	8,392.0	Meter	N/A
2002	8,865.0	Meter	N/A
2003	9,098.0	Meter	N/A
2004	8,992.0	Meter	N/A
2005	8,545.0	Meter	N/A
2006	8,864.4	Meter	N/A
2007	9,198.5	Meter	N/A
2008	8,564.8	Meter	N/A
2009	8,398.2	Meter	N/A
2010	7,570.0	Meter	N/A
2011	7,364.3	Meter	N/A
2012	7,633.5	Meter	N/A
2013	7,531.7	Meter	N/A
2014	7,318.7	Meter	N/A
2015	7,050.0	Meter	N/A
2016	6,411.8	Meter	N/A
2017	6,506.6	Meter	N/A
2018	6,769.8	Meter	N/A
2019	6,120.1	Meter	N/A

**Notes:**

\*Average water use per person as reported in the Questionnaire is:

0.21 AF between 1943 and 1969

0.25 AF between 1970 and 1973



Table E-3

Reported Annual Groundwater Production Between 2010 and 2014 (unit: acre-foot)

Year	Number of Well	Annual Production - Questionnaire 1	Monthly Average	Annual Production - IWVGA	Monthly Average	Discrepancy %	Annual Production - Cooperative Group	Monthly Average	Discrepancy %
2010	N/A	7,570.0	630.8	N/A	N/A	N/A	7,570.0	630.8333	0.0%
2011	N/A	7,364.3	613.7	N/A	N/A	N/A	7,364.3	613.6875	0.0%
2012	N/A	7,633.5	636.1	N/A	N/A	N/A	7,633.5	636.1208	0.0%
2013	N/A	7,531.7	627.6	N/A	N/A	N/A	7,531.7	627.6408	0.0%
2014	N/A	7,318.7	609.9	N/A	N/A	N/A	7,318.7	609.8917	0.0%

**Notes:**

- Discrepancy % is calculated by using

$$Discrepancy \% = \left[ 1 - \frac{Reported\ Extraction\ (IWVGA\ or\ Cooperative\ Group)}{Reported\ Extraction\ (Questionnaire\ 1)} \right] \times 100\%$$

- IWVWD reported groundwater production of 6,120.1 AF in 2019. The IWVGA report has a record of 6,116.2 AF in 2019. The discrepancy is 0.06 %.

**APPENDIX F**  
**Verification Report for**  
**Jumper Street Water Co-op**

## **Appendix F: Pumping Verification Report for Jumper Street Water Cooperative**

The purpose of this Pumping Verification Report (Report) is to verify and certify to the extent possible, all groundwater production from the Jumper Street Water Cooperative for the years between 1937 and 2019, with particular emphasis on the Base Period for use in establishing Annual Pumping Allocations and determining eligibility for the Transient Pool. An analysis of the verification data, the methods of verification, and findings on the Producer's pumping are presented herein.

### **History**

The Jumper Street Water Cooperative (Jumper Street Co-op) is a cooperative water group located in Inyokern, California. Groundwater has been extracted to provide potable water to customers for household and landscaping usages since 1988 within the Jumper Street Co-op service area of approximately 17.5 acres. There were zero customer connections prior to May 1988; 8 connections between May 1988 and the end of 1991; and 7 connections between 1992 and present. The beginning date of groundwater extraction for potable water service is not known; however, groundwater has been extracted by a well drilled under County Permit H-618 since 1988.

### **Description of Facilities**

There is one (1) active well owned by the Jumper Street Co-op; the active well is located in Kern County Assessor Parcel Number 352-440-03. The well was drilled in 1985 with a static water level of 110 feet below ground surface (bgs), measured when the well was installed, and a total depth of 250 feet bgs. The pump was manufactured by Sta-Rite Industries and is rated 5 horsepower. There is a flow meter installed to measure groundwater extraction; however, the Jumper Street Co-op did not regularly record the volume of groundwater extraction until recently. General information on well construction, water level, well pumps, and service status is provided in Table F-1.

## **Groundwater Production**

According to the responses to the Questionnaire, the total groundwater extracted between May 23, 1988 and February 1, 2020 based on meter total reading is approximately 205.8 AF, and the average annual groundwater extracted is approximately 6.24 AF. Jumper Street Co-op's reported 2019 groundwater production is approximately 4.83 AF.

## **Verification Data and Information**

All of the data provided in the Questionnaire that can be used in the verification of groundwater production is described below.

### **Groundwater Production Questionnaire**

The Jumper Street Co-op indicated in the responses of the Questionnaire that the average annual groundwater extraction between 1988 and present is approximately 6.24 AF. Though the well has a flow meter installed, the Jumper Street Co-op did not provide records of extraction readings. The Jumper Street Co-op also reported a total 2019 extraction of approximately 4.83 AF based on monthly flow meter readings.

## **Basis of Verification**

The available data discussed in the "**Verification Data and Information**" section was considered in the verification of groundwater production.

### **Records of Groundwater Production from the Authority and Cooperative Group**

The Indian Wells Valley Cooperative Groundwater Management Group (Cooperative Group) do not have records of groundwater production for Jumper Street

Co-op. The Authority has a record of 5.01 AF groundwater extracted at the Jumper Street Co-op in 2019.

### **Review of Methods and Verification and Conclusions**

Although the reported groundwater production in the Questionnaire covers the period between 1988 and 2019, verifications of groundwater production from the Cooperative Group were not performed because the Cooperative Group has no production records for this producer. The Authority's production records show that groundwater production by Jumper Street Co-op was 5.01 AF in 2019, which closely matches the production of 4.83 AF reported in the Questionnaire with a discrepancy of 0.18 AF. Annual groundwater production for the Base Period (from 2010 to 2014) as reported in the Questionnaire, are shown on Table F-2. Due to the lack of available groundwater production records from the Cooperative Group, a comparison of groundwater production as reported in the Questionnaire and as documented by the Cooperative Group was not performed in Table F-2.

The Jumper Street Co-op does not apply extracted groundwater for agricultural purposes; therefore, extraction estimates based on land usage were not performed. In addition, verifications of groundwater production based on power consumption data and/or empirical equations were not performed due to the lack of data provided in the response to the Questionnaire.

Finally, in accordance with the Sustainable Groundwater Management Act (SGMA) and California water law, the period between January 2010 and December 2014 has been considered by the Authority to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment. Annual groundwater production reported in the response to the Questionnaire during the Base Period (Table F-2) is the average annual groundwater production for the period between 1988 and present; therefore, the lowest annual Base Period groundwater production cannot be properly determined. It should be noted that the Authority production records show that groundwater production by Jumper Street Co-op was 5.01 AF in 2019, which closely

## **Appendix F: Pumping Verification Report for Jumper Street Water Cooperative**

matches the production of 4.83 AF reported in the response to the Questionnaire. In addition, the Authority's 2019 production record for the Jumper Street Co-op also reasonably matches the average annual production of 6.24 AF provided in the response to the Questionnaire.

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**Table F-1  
Well Construction Information**

Well Name/ Number	Date Drilled	Well Depth (feet)	Casing Length (feet)	Static WL (ft, bgs)	Pumping Depth (ft, bgs)	Pump Type	Motor Horsepower	Manufacturer's Pump Rating (gpm)	Pump Test	Date of Pump Test	Service Status
1	1985	250	N/A	110	N/A	N/A	5	N/A	N/A	N/A	Active

**Notes:**

- Jumper St. Water Co-op extracted groundwater to provide potable water to customers with Permit # 0005800.
- Groundwater extraction starting year is unknown, but the Permit was initiated in 1988.
- An annual average groundwater production (6.236 AFY) was provided based on total production from 1988 through 2020.

**Table F-2**  
**Reported Annual Groundwater Production Between 2010 and 2014 (unit: acre-foot)**

Year	Number of Wells	Annual Production - Questionnaire 1	Monthly Average	Annual Production - IWVGA	Monthly Average	Discrepancy %	Annual Production - Cooperative Group	Monthly Average	Discrepancy %
2010	1	6.24	0.52	N/A	N/A	N/A	N/A	N/A	N/A
2011	1	6.24	0.52	N/A	N/A	N/A	N/A	N/A	N/A
2012	1	6.24	0.52	N/A	N/A	N/A	N/A	N/A	N/A
2013	1	6.24	0.52	N/A	N/A	N/A	N/A	N/A	N/A
2014	1	6.24	0.52	N/A	N/A	N/A	N/A	N/A	N/A

**Notes:**

- Discrepancy % is calculated by using

$$Discrepancy \% = \left[ 1 - \frac{Reported\ Extraction\ (IWVGA\ or\ Cooperative\ Group)}{Reported\ Extraction\ (Questionnaire\ 1)} \right] \times 100\%$$

- Jumper reported an average groundwater production of 4.83 AF in 2019. The Authority has a record of 5.01 AF in 2019.

- The discrepancy is approximately 3.7 % (the Authority record is 0.18 AF more than the Jumper reported production).



**APPENDIX G**  
**Verification Report for**  
**Kern County Public Works Department**

## **Appendix G: Pumping Verification Report for Kern County Public Works Department**

The purpose of this Pumping Verification Report (Report) is to verify and certify to the extent possible, all groundwater production from the Kern County Public Works Department for the years between 1937 and 2019, with particular emphasis on the Base Period for use in establishing Annual Pumping Allocations and determining eligibility for the Transient Pool. An analysis of the verification data, the methods of verification, and findings on the Producer's pumping are presented herein.

### **History**

The Kern County Public Works Department (Department) Offices are located in the Kern County Public Services Building in Bakersfield, California. The Department manages solid waste facilities on approximately 505 acres of property that is located within the Basin boundary. Groundwater has been extracted for a variety of purposes at the Department's solid waste facilities, including dust control, fire suppression, and onsite sanitary facilities that have been operating since 1968. The Department indicated that groundwater extractions may have occurred prior to 1968 due to the need for water during landfill construction activities. There is one (1) active well and one (1) inactive well on the property owned by the Department. Extracted groundwater has been reportedly not used for agricultural purposes.

### **Description of Facilities**

There is one (1) active well and one (1) inactive well owned by the Department. Both wells are located on Kern County Assessor Parcel Number (APN) 341-072-40. The active well has a submersible pump rated 50 horsepower installed at a depth of 550 feet below ground surface (bgs). As indicated by the Department, the inactive well may have been installed prior to 1968. This well became inactive in 2010 due to poor well condition and performance. General information on well construction, water level, well pumps, and service status is provided in Table G-1.

## **Groundwater Production**

According to the responses to the Questionnaire, the Department kept a log of water truck loads (with capacity and volume of each water truck) for the period between 1983 and 2015 to record groundwater extraction. A McCrometer turbine meter was installed in 2015 and has since been used to measure groundwater extraction. Groundwater extraction data prior to 1983 was not provided in the response to the Questionnaire; however, the Department indicated that groundwater extraction prior to 1983 was also measured based on the counting of water truck loads. Though the quantity of groundwater extractions between 1983 and 2015 was not provided in the response to the Questionnaire, the Department indicated in the response to the Questionnaire that the average annual groundwater extraction is approximately 20 acre-feet (AF) and provided supporting monthly groundwater extraction datasheet between August 2018 and January 2020. The supporting monthly extraction data is provided in Appendix G-1.

## **Verification Data and Information**

All of the data provided in the response to the Questionnaire that can be utilized in the verification of the groundwater production are described below.

### **Groundwater Production Questionnaire**

The Department indicated in the responses to the Questionnaire that the average annual quantity of groundwater extracted between 1983 and present day is approximately 20 AFY. The Department's supporting documentation only provides monthly groundwater extractions between August 2018 and January 2020, measured through the use of a turbine meter.

## **Basis of Verification**

The available data discussed in the "**Verification Data and Information**" section was considered in the verification of groundwater production.

### **Records of Groundwater Production from the Authority and Cooperative Group**

The Indian Wells Valley Cooperative Groundwater Management Group (Cooperative Group) does not have records of groundwater production for the Department. The Authority has partial record that groundwater extractions by the Department during 2019 were approximately 13.94 AF (missing November 2019 data). Although the Authority's 2019 extraction record is not complete, it reasonably matches the Department's 2019 estimated groundwater extraction of 15.8 AF (see Appendix G-1). Annual groundwater production during the Base Period (from 2010 to 2014) as reported in the Questionnaire are shown on Table G-2. Due to the lack of available groundwater production records from the Cooperative Group, a comparison of groundwater production as reported in the Questionnaire and as documented by the Cooperative Group was not performed in Table G-2.

### **Review of Methods and Verification and Conclusions**

Although the reported groundwater production in the response to the Questionnaire covers the period between 1983 and 2019, verifications of groundwater production from the Cooperative Group were not performed because the Cooperative Group has no production records for the Department. The Authority's production records show that groundwater production by the Department was approximately 13.94 AF in 2019 (missing November 2019 extraction data), which reasonably matches the 2019 production of 15.8 AF reported in the response to the Questionnaire and the estimated annual average production of 20 AF reported in the response to the Questionnaire.

The Department does not apply extracted groundwater for agricultural purposes; therefore, an extraction estimate based on land use was not performed. In addition, verifications of groundwater production based on power consumption data and/or empirical equations were not performed due to the lack of data provided in the response to the Questionnaire.

## **Appendix G: Pumping Verification Report for Kern County Public Works Department**

Finally, in accordance with the Sustainable Groundwater Management Act (SGMA) and California water law, the period between January 2010 and December 2014 has been considered by the Authority to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment. The Department provided average annual groundwater extractions for the period between 1983 and present day in the response to the Questionnaire; therefore, the lowest annual Base Period groundwater production cannot be properly verified. It should be noted that the Authority's production records show that groundwater production by the Department was approximately 13.94 AF (missing November 2019 extraction data) in 2019, which reasonably matches the average annual production of 20 AF reported in the response to the Questionnaire.

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**Table G-1  
Well Construction Information**

<b>Well Name</b>	<b>Date Drilled</b>	<b>Well Depth</b>	<b>Casing Length</b>	<b>Static Water Level (ft, bgs)</b>	<b>Pumping Depth (ft, bgs)</b>	<b>Pump Type</b>	<b>Motor Horsepower</b>	<b>Manufacturer's Pump Rating (gpm)</b>	<b>Pump Test</b>	<b>Date of Pump Test</b>	<b>Service Status</b>
1	1968*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive
2	1983	606	585	340	550	Submersible	50	Grundfos (A15B70 - 300 gpm)	285 gpm	4/5/2005	Active

**Notes:**

- Kern County Public Works provided documentation for one active well.

\* The inactive well estimated to be installed prior to 1968, and became inactive in 2010.

**Table G-2**

**Reported Annual Groundwater Production Between 2010 and 2014 (unit: acre-foot)**

Year	Number of Wells	Annual Production - Questionnaire 1	Monthly Average	Annual Production - IWVGA	Monthly Average	Discrepancy %	Annual Production - Cooperative Group	Monthly Average	Discrepancy %
2010	1	20	1.7	N/A	N/A	N/A	N/A	N/A	N/A
2011	1	20	1.7	N/A	N/A	N/A	N/A	N/A	N/A
2012	1	20	1.7	N/A	N/A	N/A	N/A	N/A	N/A
2013	1	20	1.7	N/A	N/A	N/A	N/A	N/A	N/A
2014	1	20	1.7	N/A	N/A	N/A	N/A	N/A	N/A

**Notes:**

- Discrepancy % is calculated by using

$$Discrepancy \% = \left[ 1 - \frac{Reported\ Extraction\ (IWVGA\ or\ Cooperative\ Group)}{Reported\ Extraction\ (Questionnaire\ 1)} \right] \times 100\%$$

- Kern County Public Work reported groundwater extraction of about 15.8 AF in 2019.
- The IWVGA report also has a record of 13.94 AF (missing November reading in 2019).
- The discrepancy is 11.6 %; however, November extraction is missing in the IWVGA reported 2019 extraction.

**APPENDIX G-1**

**Kern County**

**Public Works Department**

**Supporting Monthly**

**Extraction Data**



Ridgecrest Water Meter Reading for Groundwater Extraction Fee  
 Indian Wells Valley Groundwater Authority

<u>Date</u>	<u>Meter Reading</u> <u>(x100 gallons)</u>	<u>Monthly Usage</u> <u>(acre-feet)</u>	<u>Days</u>	<u>Ave. Daily Usage</u> <u>(x100 gal.)</u>
08/15/2018	83383			
09/11/2018	89002			
09/25/2018	91720	2.559		
10/08/2018	93895	1.502	27	181.22
11/01/2018	98216			
11/06/2018	99428	1.698	29	190.79
12/04/2018	103394	1.217	28	141.64
01/02/2019	106196	0.860	29	96.62
02/01/2019	108525	0.715	30	77.63
03/01/2019	110310	0.548	28	63.75
04/02/2019	113466	0.969	32	98.63
05/01/2019	117246	1.160	29	130.34
06/01/2019	122336	1.562	31	164.19
07/01/2019	128502	1.892	30	205.53
08/01/2019	134641	1.884	31	198.03
09/01/2019	141253	2.029	31	213.29
10/01/2019	146798	1.702	30	184.83
11/01/2019	152720	1.817	31	191.03
12/03/2019	156602	1.191	32	121.31
01/06/2020	157562	0.295	34	28.24
01/31/2020	160621	0.939	25	122.36

**APPENDIX H**  
**Verification Report for**  
**Meadowbrook Dairy**

## **Appendix H: Pumping Verification Report for Meadowbrook Dairy**

The purpose of this Pumping Verification Report (Report) is to verify and certify to the extent possible, all groundwater production from Meadowbrook Dairy for the years between 1937 and 2019, with particular emphasis on the Base Period for use in establishing Annual Pumping Allocations and determining eligibility for the Transient Pool. An analysis of the verification data, the methods of verification, and findings on the Producer's pumping are presented herein.

### **History**

Meadowbrook Dairy (Meadowbrook) reports that the total area being served groundwater extractions from the Basin is approximately 1,277 acres with approximately 891 acres being dedicated to agricultural purposes (alfalfa approximately 685 acres, giant Bermuda approximately 184 acres, olives approximately 22 acres). The predecessor owners of Meadowbrook's properties have reported groundwater production starting in 1975, with production possibly occurring prior to 1975. There are currently fourteen (14) wells drilled on the Meadowbrook properties, but no information was provided regarding any additional wells existing on the properties prior to 1975. Extracted groundwater has been reportedly used for domestic and agricultural (irrigation of alfalfa, giant Bermuda, and olives) purposes. A significant portion of the total extracted groundwater has been used for agricultural purposes, though the annual volume of water applied to each crop depends on the acreage dedicated during that year.

### **Description of Facilities**

There are currently eleven (11) active wells and three (3) inactive wells located within Meadowbrook's properties. Extracted groundwater is either fed into a drip irrigation system or a center pivot irrigation system with down-spray nozzles for agricultural irrigation, or sent to homes for domestic uses. General information provided by Meadowbrook on the installation date, static water level, well pumping depths, and service status of Meadowbrook wells is provided in Table H-1.

## **Groundwater Production**

Historical groundwater production based on metered records are not available because flow meters were not installed on the Meadowbrook wells until 2018. In the response to the Questionnaire, Meadowbrook provided the estimated combined groundwater production for years 1975 to 2019 from all wells that were active during each year. Prior to 2018, estimates of production were determined using power consumption and pump test data. Details of the production estimates are discussed in the following sections. The annual groundwater production estimates, as reported by Meadowbrook, between 1975 and 2019 are provided on Table H-2.

## **Verification Data and Information**

All of the data described below were utilized in the verification of the groundwater production by Meadowbrook from the Basin.

### **Groundwater Production Questionnaire**

Meadowbrook provided the combined total annual groundwater production of the active wells for each year between 1975 and 2019. Meadowbrook estimated the groundwater production based on power consumption records and pump test data for the years 1975 through 2017 and from flow meters for 2018 and 2019. The power consumption and pump test data attached to the response to the Questionnaire were summarized and are attached to this Report as Appendix H-1 and Appendix H-2, respectively.

Annual groundwater production during the Base Period (from 2010 to 2014) as reported in the response to the Questionnaire are shown on Table H-3. Between 2010 and 2014, annual groundwater production reported in the response to the Questionnaire ranged from 6,840 acre-feet (AF) in 2011 to 8,920 AF in 2014.

The Indian Wells Valley Cooperative Groundwater Management Group (Cooperative Group) reported groundwater production estimates from 1975 to 2016 for

Meadowbrook. A comparison between the Cooperative Group's records and the production reported in the Questionnaire is shown on Table H-4.

### **Power Consumption and Pump Test Data**

Electric power consumption (see Appendix H-1) and pump test data (see Appendix H-2) from the Southern California Edison Company (Edison) for the current eleven (11) active wells submitted with the response to the Questionnaire were summarized and tabulated. The data shown in Appendix H-1 includes monthly power consumption for all active wells (excluding Coyote Trails Well and HQ Well). The data shown in Appendix H-2 includes monthly power usage (in kilowatt-hours, kWh), and power usage rate data taken from pump tests (kWh per AF) for all active wells (excluding Coyote Trails Well and HQ Well). Pump tests were conducted at various dates throughout the year for the different wells. For an analysis of pump efficiency, the most conservative value was selected (least kWh per AF) across all pump tests for a well in a given year.

No power consumption or pump test data was provided for Well 4R, which was drilled in February 2020.

### **Basis of Verification**

The available data discussed in the "**Verification Data and Information**" section was considered in the verification of groundwater production by Meadowbrook.

### **Records of Groundwater Production from the Authority and Cooperative Group**

The Cooperative Group presented groundwater production estimates for Meadowbrook from 1975 to 2016. A comparison between the Cooperative Group's records and the production reported in the response to the Questionnaire during this time period is shown in Table H-4. During the Base Period, discrepancies between the Cooperative Group's production estimates and Meadowbrook's reported values ranged

from 16% to - 44%. During the Base Period, the largest discrepancy was in 2011, where Meadowbrook reported an annual production of 6,840 AF and the Cooperative Group presented a production of 9,827 AF.

### **Power Consumption Data**

Based on the data shown in Appendices H-1 and H-2, the annual groundwater production can be determined by totaling the monthly power consumption (kWh) for each well, and dividing it by their respective power usage rates (kWh/ AF). However, due to the limited hydraulic test and power consumption data provided, groundwater production for the Coyote Trails Well and the HQ Well was unable to be estimated. Therefore, the annual groundwater production from all active wells could not be approximated or compared against reported values from the Cooperative Group.

### **Review of Methods and Verification and Conclusions**

Meadowbrook reports the total area being served by groundwater extractions from the Basin is approximately 1,277 acres with approximately 891 acres being dedicated to agricultural purposes (alfalfa approximately 685 acres, giant Bermuda approximately 184 acres, olives approximately 22 acres)

The Cooperative Group presented groundwater production estimates from 1975 to 2016, and a comparison between the Cooperative Group's records and the production reported in the response to the Questionnaire was performed. Throughout this time period, there were discrepancies reaching as high as 79% (see Table H-4). Electric power consumption and pump test data from Edison was submitted in the response to the Questionnaire, but because there was no data provided for the Coyote Trails Well and HQ Well, total annual production could not be approximated.

Finally, in accordance with the Sustainable Groundwater Management Act (SGMA) and California water law, the period between January 2010 and December 2014 has been considered by the IWVGA to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment. Annual groundwater

## **Appendix H: Pumping Verification Report for Meadowbrook Dairy**

production reported in the response to the Questionnaire during the Base Period are shown in Table H-3. As reported in the response to the Questionnaire, Meadowbrook's lowest annual Base Period groundwater production of 6,840 acre-feet (AF) occurred in 2011, estimated using available power consumption records.

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**Table H-1**

**Well Construction Information**

<b>Well Name/ Number</b>	<b>Date Drilled</b>	<b>Well Depth (feet)</b>	<b>Casing Length (feet)</b>	<b>Static WL (ft, bgs)</b>	<b>Pumping Depth (ft, bgs)</b>	<b>Pump Type</b>	<b>Motor Horsepower</b>	<b>Manufacturer's Pump Rating (gpm)</b>	<b>Pump Test</b>	<b>Date of Pump Test</b>	<b>Service Status</b>
Well 1 (North)	1979/Apr	N/A	N/A	247.4	271.6	N/A	200	N/A	N/A	2/10/2015	Active
Well 2 (Big Horn)	2008/Mar	N/A	N/A	262.0	283.0	N/A	400	N/A	N/A	3/8/2016	Active
Well 3 (New)	2006/Feb	N/A	N/A	215.6	251.1	N/A	200	N/A	N/A	4/4/2017	Active
Well 4	1981/May	N/A	N/A	188.9	227.8	N/A	150	N/A	N/A	4/4/2017	Active
Well 4R	2020/Feb	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
Well 5	1976/Mar	N/A	N/A	160.2	190.3	N/A	150	N/A	N/A	4/4/2017	Active
Well 6	1980/Jan	N/A	N/A	147.5	178.1	N/A	150	N/A	N/A	4/4/2017	Active
Well 7	1980/Jan	N/A	N/A	130.0	151.3	N/A	150	N/A	N/A	3/8/2016	Active
Well 8	1979/Dec	N/A	N/A	164.5	179.9	N/A	150	N/A	N/A	4/4/2017	Active
Coyote Trails Well	1980/Feb	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
HQ Well	2014/May	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
Old Well 2	1979/Apr	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive
Old Well 3	1977/Mar	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive
Old HQ Well	1970/Jun	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive

Notes:

- MeadowBrook Dairy indicated the predecessor owners reported groundwater production starting in 1975
- Production may have occurred prior to 1975.



**Table H-2**  
**Data Source Used For Groundwater Production Estimation**

<b>Year</b>	<b>Groundwater Production (acre-foot)</b>	<b>Estimate Method</b>
1975	1,516	Power Consumption and pump efficiency test
1976	1,494	Power Consumption and pump efficiency test
1977	2,702	Power Consumption and pump efficiency test
1978	3,216	Power Consumption and pump efficiency test
1979	3,275	Power Consumption and pump efficiency test
1980	12,700	Power Consumption and pump efficiency test
1981	12,700	Power Consumption and pump efficiency test
1982	12,700	Power Consumption and pump efficiency test
1983	9,960	Power Consumption and pump efficiency test
1984	9,800	Power Consumption and pump efficiency test
1985	9,850	Power Consumption and pump efficiency test
1986	9,850	Power Consumption and pump efficiency test
1987	6,640	Power Consumption and pump efficiency test
1988	6,830	Power Consumption and pump efficiency test
1989	7,064	Power Consumption and pump efficiency test
1990	6,187	Power Consumption and pump efficiency test
1991	6,737	Power Consumption and pump efficiency test
1992	7,104	Power Consumption and pump efficiency test
1993	7,701	Power Consumption and pump efficiency test
1994	7,504	Power Consumption and pump efficiency test
1995	7,427	Power Consumption and pump efficiency test
1996	7,807	Power Consumption and pump efficiency test
1997	7,800	Power Consumption and pump efficiency test
1998	7,800	Power Consumption and pump efficiency test
1999	6,030	Power Consumption and pump efficiency test
2000	6,990	Power Consumption and pump efficiency test
2001	6,160	Power Consumption and pump efficiency test
2002	5,210	Power Consumption and pump efficiency test
2003	6,410	Power Consumption and pump efficiency test
2004	6,460	Power Consumption and pump efficiency test
2005	5,350	Power Consumption and pump efficiency test
2006	7,010	Power Consumption and pump efficiency test
2007	7,590	Power Consumption and pump efficiency test
2008	7,680	Power Consumption and pump efficiency test
2009	8,760	Power Consumption and pump efficiency test
2010	6,880	Power Consumption and pump efficiency test
2011	6,840	Power Consumption and pump efficiency test
2012	7,660	Power Consumption and pump efficiency test
2013	8,070	Power Consumption and pump efficiency test
2014	8,920	Power Consumption and pump efficiency test
2015	8,030	Power Consumption and pump efficiency test
2016	7,580	Power Consumption and pump efficiency test
2017	6,301	Power Consumption and pump efficiency test

**Table H-2**  
**Data Source Used For Groundwater Production Estimation**

Year	Groundwater Production (acre-foot)	Estimate Method
2018	4,755	Flowmeter
2019	4,403	Flowmeter

**Notes:**

- Monthly power consumption is listed in Appendix H-1: Power Consumption Data
- Total annual power consumption and pump efficiency test data is listed in Appendix H-2: Pump Efficiency and Estimated Annual Production

**Table H-3  
Reported Annual Groundwater Production Between 2010 and 2014 (unit: acre-foot)**

Year	Number of Wells	Annual Production - Questionnaire 1*	Monthly Average	Annual Production - IWVGA	Monthly Average	Discrepancy %	Annual Production - Cooperative Group	Monthly Average	Discrepancy %	Annual Production - Verification*	Monthly Average	Discrepancy %
2010	11	6,880	573.3	N/A	N/A	N/A	9,437	786.42	-37.2%	6,053	504.38	12.0%
2011	11	6,840	570.0	N/A	N/A	N/A	9,827	818.92	-43.7%	5,763	480.22	15.8%
2012	11	7,660	638.3	N/A	N/A	N/A	9,876	823.00	-28.9%	6,818	568.15	11.0%
2013	11	8,070	672.5	N/A	N/A	N/A	9,354	779.50	-15.9%	6,852	570.98	15.1%
2014	11	8,920	743.3	N/A	N/A	N/A	7,524	627.00	15.7%	N/A	N/A	N/A

**Notes:**

- Discrepancy % is calculated by using

$$Discrepancy \% = \left[ 1 - \frac{Reported\ Extraction\ (IWVGA,\ Cooperative\ Group,\ or\ Verification)}{Reported\ Extraction\ (Questionnaire\ 1)} \right] \times 100\%$$

\* Using available Edison monthly power consumption (kWh) and energy efficiency from pump tests (kWh/AF), annual groundwater extractions between 2010 and 2013 were recalculated (Appendix H-2) by dividing power consumption by energy efficiency. Pump test records were not provided for 2014, so annual production was unable to be verified

- Results indicate the recalculated extraction are slightly less than the reported extraction (GW extracted estimate excludes Coyote Trails Well and HQ Well due to no hydraulic test and power consumption data)

- Meadowbrook reported groundwater production of 4,403 AF in 2019. The IWVGA report also has a record of 4,403 AF in 2019. The discrepancy is 0.0%

**Table H-4**  
**Reported Annual Groundwater Production Between 1937 and 2016 (unit: acre-foot)**

Year	Number of Well	Annual Production - Questionnaire 1	Monthly Average	Annual Production - IWVGA	Monthly Average	Discrepancy %	Annual Production - Cooperative Group	Monthly Average	Discrepancy %
1937-1974	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1975	N/A	1,516	126.3	N/A	N/A	N/A	1,516	126.3	0.0%
1976	N/A	1,494	124.5	N/A	N/A	N/A	1,494	124.5	0.0%
1977	N/A	2,702	225.2	N/A	N/A	N/A	2,702	225.2	0.0%
1978	N/A	3,216	268.0	N/A	N/A	N/A	3,216	268.0	0.0%
1979	N/A	3,275	272.9	N/A	N/A	N/A	3,257	271.4	0.5%
1980	N/A	12,700	1,058.3	N/A	N/A	N/A	7,515	626.3	40.8%
1981	N/A	12,700	1,058.3	N/A	N/A	N/A	10,036	836.3	21.0%
1982	N/A	12,700	1,058.3	N/A	N/A	N/A	10,324	860.3	18.7%
1983	N/A	9,960	830.0	N/A	N/A	N/A	10,087	840.6	-1.3%
1984	N/A	9,800	816.7	N/A	N/A	N/A	10,312	859.3	-5.2%
1985	N/A	9,850	820.8	N/A	N/A	N/A	10,100	841.7	-2.5%
1986	N/A	9,850	820.8	N/A	N/A	N/A	5,389	449.1	45.3%
1987	N/A	6,640	553.3	N/A	N/A	N/A	4,141	345.1	37.6%
1988	N/A	6,830	569.2	N/A	N/A	N/A	5,255	437.9	23.1%
1989	N/A	7,064	588.7	N/A	N/A	N/A	7,064	588.7	0.0%
1990	N/A	6,187	515.6	N/A	N/A	N/A	6,187	515.6	0.0%
1991	N/A	6,737	561.4	N/A	N/A	N/A	6,737	561.4	0.0%
1992	N/A	7,104	592.0	N/A	N/A	N/A	7,104	592.0	0.0%
1993	N/A	7,701	641.8	N/A	N/A	N/A	7,701	641.8	0.0%
1994	N/A	7,504	625.3	N/A	N/A	N/A	7,504	625.3	0.0%
1995	N/A	7,427	618.9	N/A	N/A	N/A	7,427	618.9	0.0%
1996	N/A	7,807	650.6	N/A	N/A	N/A	7,807	650.6	0.0%
1997	N/A	7,800	650.0	N/A	N/A	N/A	7,800	650.0	0.0%
1998	N/A	7,800	650.0	N/A	N/A	N/A	7,800	650.0	0.0%
1999	N/A	6,030	502.5	N/A	N/A	N/A	7,800	650.0	-29.4%
2000	N/A	6,990	582.5	N/A	N/A	N/A	7,800	650.0	-11.6%
2001	N/A	6,160	513.3	N/A	N/A	N/A	8,150	679.2	-32.3%
2002	N/A	5,210	434.2	N/A	N/A	N/A	8,460	705.0	-62.4%
2003	N/A	6,410	534.2	N/A	N/A	N/A	9,420	785.0	-47.0%
2004	N/A	6,460	538.3	N/A	N/A	N/A	9,370	780.8	-45.0%
2005	N/A	5,350	445.8	N/A	N/A	N/A	9,580	798.3	-79.1%
2006	N/A	7,010	584.2	N/A	N/A	N/A	9,460	788.3	-35.0%
2007	N/A	7,590	632.5	N/A	N/A	N/A	9,270	772.5	-22.1%
2008	N/A	7,680	640.0	N/A	N/A	N/A	8,957	746.4	-16.6%
2009	N/A	8,760	730.0	N/A	N/A	N/A	9,536	794.7	-8.9%
2010	N/A	6,880	573.3	N/A	N/A	N/A	9,437	786.4	-37.2%
2011	N/A	6,840	570.0	N/A	N/A	N/A	9,827	818.9	-43.7%
2012	N/A	7,660	638.3	N/A	N/A	N/A	9,876	823.0	-28.9%
2013	N/A	8,070	672.5	N/A	N/A	N/A	9,354	779.5	-15.9%
2014	N/A	8,920	743.3	N/A	N/A	N/A	7,524	627.0	15.7%
2015	N/A	8,030	669.2	N/A	N/A	N/A	6,517	543.1	18.8%
2016	N/A	7,580	631.7	N/A	N/A	N/A	6,387	532.3	15.7%

# APPENDIX H-1

## **Power Consumption**

### **Data**

**Appendix H-1: Power Consumption Data**

Year	Service Address	Power Consumption (kWh)											
		January	February	March	April	May	June	July	August	September	October	November	December
2008	112 Plant W1 Inyokern, CA	6,495	21,375	102,897	100,449	80,880	60,244	50,480	56,887	58,674	50,047	8,878	0
	113 Plant W2 Inyokern, CA	586	3,648	13,923	16,127	4,604	0	7	0	0	0	0	0
	114 Plant W7 Inyokern, CA	15	18,965	60,708	33,848	54,913	59,748	53,405	47,291	57,677	46,687	11,856	37
	117 Plant W6 Inyokern, CA	18	10,990	40,780	27,099	38,870	47,457	52,162	46,614	40,343	42,869	7,724	48
	115 Plant W8 Inyokern, CA	1	9,923	34,050	23,904	34,330	38,010	41,367	38,090	36,110	31,563	6,792	45
	7650 Brown Rd W5 Inyokern, CA	37	20,363	54,718	29,078	57,308	59,667	56,672	54,224	46,744	62,992	10,045	61
	127 Plant W4 Inyokern, CA	25,672	39,968	31,403	55,473	60,318	57,975	8,738	44,783	42,113	63,576	9,998	16
	105 Plant W3 Inyokern, CA	2,430	26,751	77,601	49,367	61,683	68,464	67,748	58,426	64,572	54,274	14,833	126
	8902 N Bighorn Inyokern, CA	N/A	N/A	N/A	N/A	N/A	31,784	101,068	412	52,503	53,780	12,250	99
	<b>Total</b>	35,254	151,983	416,080	335,345	392,906	423,349	431,647	346,727	398,736	405,788	82,376	432
	2009	112 Plant W1 Inyokern, CA	0	96	14,329	11,225	23,905	48,939	51,532	24,556	0	87,895	41,511
113 Plant W2 Inyokern, CA		0	0	0	0	0	0	0	0	0	9,957	4,943	0
114 Plant W7 Inyokern, CA		38	6,677	53,393	69,024	54,903	57,069	64,161	50,825	64,378	37,462	20,543	21
117 Plant W6 Inyokern, CA		46	8,210	49,448	56,162	37,347	47,872	64,503	62,754	50,444	33,805	21,093	44
115 Plant W8 Inyokern, CA		880	6,061	24,160	47,968	36,555	40,446	47,532	43,488	44,052	30,258	14,511	38
7650 Brown Rd W5 Inyokern, CA		54	8,077	42,620	66,426	54,746	56,948	52,456	62,111	68,239	39,889	24,047	35
127 Plant W4 Inyokern, CA		14	3,063	62,492	52,853	62,613	57,873	61,203	59,198	62,673	45,647	24,270	15
105 Plant W3 Inyokern, CA		9,448	26,452	63,165	84,373	50,084	85,400	65,214	14,232	79,834	62,365	34,972	121
8902 N Bighorn Inyokern, CA		127	12,094	113,645	168,976	110,476	62,041	95,889	102,084	135,924	531	325	104
<b>Total</b>		10,607	70,730	423,252	557,007	430,629	456,588	502,490	419,248	505,544	347,789	186,215	378
2010		112 Plant W1 Inyokern, CA	0	11,107	70	0	4,137	42,772	77,589	45,959	52,394	62,349	13,535
	113 Plant W2 Inyokern, CA	0	997	0	0	0	0	44	0	0	3,138	1,922	1,006
	114 Plant W7 Inyokern, CA	3,112	9,131	47,633	39,316	49,242	50,374	56,851	54,504	52,452	50,002	4,457	33
	117 Plant W6 Inyokern, CA	36	9,678	52,541	45,076	41,423	49,841	58,776	49,771	56,631	41,524	552	41
	115 Plant W8 Inyokern, CA	1,853	3,218	23,311	31,123	31,276	46,181	45,762	43,573	35,672	22,030	4,628	1,542
	7650 Brown Rd W5 Inyokern, CA	0	32	47,190	41,992	57,880	24,367	65,439	4,993	35,578	31,970	2,099	3,390
	127 Plant W4 Inyokern, CA	15	22	47,136	41,067	49,582	30,287	11,463	108	21,908	28,345	9,535	3,666
	105 Plant W3 Inyokern, CA	965	10,010	55,312	54,023	46,012	63,461	80,935	79,194	52,850	35,786	16,292	8,788
	8902 N Bighorn Inyokern, CA	110	4,634	103,387	84,140	91,892	73,205	67,736	78,472	64,421	41,092	199	165
	<b>Total</b>	6,091	48,829	376,400	336,737	371,444	380,488	464,595	356,574	371,906	316,236	53,219	25,906
	2011	112 Plant W1 Inyokern, CA	0	3,206	92	6,196	12,145	1,032	1,250	22,291	0	25,195	0
113 Plant W2 Inyokern, CA		0	0	0	0	0	0	0	0	0	0	0	0
114 Plant W7 Inyokern, CA		32	11,857	17,931	32,705	30,299	54,093	35,955	57,222	6,037	28,486	14,511	4,760
117 Plant W6 Inyokern, CA		4,804	12,707	17,247	34,046	23,139	51,311	30,404	42,609	20,169	26,605	15,871	4,806
115 Plant W8 Inyokern, CA		38	1,150	15,836	35,846	29,985	32,383	38,750	42,692	41,028	27,022	6,573	11
7650 Brown Rd W5 Inyokern, CA		50	2,715	32,143	49,459	34,898	54,412	43,782	59,649	55,790	39,564	16,993	2,516
127 Plant W4 Inyokern, CA		2	2,514	38,234	46,146	34,421	51,301	56,731	52,281	61,423	35,709	14,038	3,228
105 Plant W3 Inyokern, CA		87	4,198	44,441	57,308	47,076	60,620	53,107	65,241	65,092	46,657	16,015	3,502
8902 N Bighorn Inyokern, CA		110	3,389	81,551	91,614	103,269	118,830	117,766	130,918	125,927	81,320	40,720	6,759
<b>Total</b>		5,123	41,736	247,475	353,320	315,232	423,982	377,745	472,903	375,466	310,558	124,721	25,582
2012		112 Plant W1 Inyokern, CA	0	1,280	0	0	0	0	2,643	5,446	0	0	0
	113 Plant W2 Inyokern, CA	0	0	0	0	0	0	663	825	0	0	0	0
	114 Plant W7 Inyokern, CA	3,197	12,157	41,156	55,030	56,099	64,303	59,431	43,751	60,403	32,082	19,598	2,725
	117 Plant W6 Inyokern, CA	3,216	22,619	35,738	57,900	53,730	63,237	58,440	57,389	64,667	36,950	15,238	6
	115 Plant W8 Inyokern, CA	2,911	13,432	13,490	10	18,986	45,788	31,754	25,965	12,877	15,185	9,839	2,538
	7650 Brown Rd W5 Inyokern, CA	44	19,594	39,859	49,970	60,249	62,749	56,660	56,317	61,982	36,036	12,370	46
	127 Plant W4 Inyokern, CA	13	11,954	40,995	45,184	58,357	56,494	59,636	51,705	59,873	42,879	9,770	14
	105 Plant W3 Inyokern, CA	118	26,875	45,731	46,439	63,575	69,446	68,292	56,982	70,607	58,360	8,492	122
	8902 N Bighorn Inyokern, CA	118	51,451	102,665	70,327	159,453	141,346	139,128	133,374	129,920	123,770	7,511	107
	<b>Total</b>	9,617	159,362	319,634	324,860	470,449	503,363	476,647	431,754	460,329	345,262	82,818	5,558
	2013	112 Plant W1 Inyokern, CA	0	0	68	0	0	0	0	0	0	0	0
113 Plant W2 Inyokern, CA		0	0	0	0	0	0	0	0	0	0	0	0
114 Plant W7 Inyokern, CA		20	5,527	49,329	52,080	64,308	60,605	62,983	63,438	56,717	50,882	9,360	8
117 Plant W6 Inyokern, CA		61	17,678	54,846	46,317	63,450	59,759	60,807	67,927	53,805	50,909	12,282	46
115 Plant W8 Inyokern, CA		1,575	7,359	17,647	22,031	3,497	32,007	38,137	30,643	27,930	30,214	2,973	25
7650 Brown Rd W5 Inyokern, CA		117	15,292	52,917	48,656	64,672	62,406	59,838	60,140	52,826	42,140	11,649	51
127 Plant W4 Inyokern, CA		69	15,635	55,292	52,925	75,988	65,283	56,060	53,811	47,984	38,291	11,893	945
105 Plant W3 Inyokern, CA		121	12,492	59,865	57,671	338	38,506	69,307	86,193	71,161	37,437	12,475	15,331
8902 N Bighorn Inyokern, CA		3,363	37,958	105,836	127,629	170,677	80,213	87,581	99,770	110,735	94,193	27,487	7,179
<b>Total</b>		5,326	111,941	395,800	407,309	442,930	398,779	434,713	461,922	421,158	344,066	88,119	23,585
2014		112 Plant W1 Inyokern, CA	0	0	0	0	6,703	5,524	0	0	0	0	0
	113 Plant W2 Inyokern, CA	0	0	0	1	0	0	0	0	0	0	0	0
	114 Plant W7 Inyokern, CA	4,220	17,804	62,761	43,308	65,143	65,939	71,552	53,065	55,382	49,021	3,869	12
	117 Plant W6 Inyokern, CA	3,998	18,730	64,827	50,471	65,255	69,059	72,819	57,906	48,505	50,364	3,108	23
	115 Plant W8 Inyokern, CA	1,801	7,020	26,223	22,729	31,937	31,429	38,540	31,324	30,474	27,498	3,622	19
	7650 Brown Rd W5 Inyokern, CA	4,145	20,395	65,018	54,812	49,987	67,600	61,063	57,423	55,168	42,643	4,808	3,463
	127 Plant W4 Inyokern, CA	2,954	286	46,487	59,015	58,451	61,081	74,764	55,703	49,554	30,172	2,771	13
	105 Plant W3 Inyokern, CA	20,454	61,850	91,835	70,412	68,184	73,790	16,113	169	85,411	58,393	20,671	113
	8902 N Bighorn Inyokern, CA	15,166	52,929	148,542	121,710	146,391	155,019	162,339	132,291	161,197	129,463	7,137	255
	<b>Total</b>	52,738	179,014	505,693	422,458	492,051	529,441	497,190	387,881	485,691	387,554	45,986	3,898
	2015	112 Plant W1 Inyokern, CA	0	94	0	0	8,653	0	0	0	0	0	0
113 Plant W2 Inyokern, CA		0	0	0	0	779	0	0	0	0	0	0	0
114 Plant W7 Inyokern, CA		31	24,803	60,061	46,098	58,525	65,225	58,332	58,679	49,275	14,627	14,106	41
117 Plant W6 Inyokern, CA		2,649	27,496	57,711	46,144	54,526	66,745	56,409	64,838	49,951	15,119	6,308	67
115 Plant W8 Inyokern, CA		9	10,623	23,885	22,796	30,348	33,621	28,866	30,942	25,989	7,778	5,230	1,314
7650 Brown Rd W5 Inyokern, CA		10,075	34,021	61,158	19,161	57,641	77,711	3,929	21,470	52,340	18,515	14,563	1,637
127 Plant W4 Inyokern, CA		22	32,679	37,827	56,857	56,887	53,083	49,124	68,141	69,388	5,020	9,902	2,821
105 Plant W3 Inyokern, CA		1,564	26,846	74,702	62,515	72,618	70,370	72,995	78,108	73,991	1,098	18,107	3,495
8902 N Bighorn Inyokern, CA		123	71,296	130,362	132,641	140,941	132,713	151,435	145,839	129,941	21,279	20,859	12,515
<b>Total</b>		14,473	227,858	445,706	386,212	471,486	508,900	421,090	468,017	450,875	83,436	89,075	21,890

APPENDIX H-2  
**Pump Efficiency and  
Estimated Annual Production**

**Appendix H-2: Pump Efficiency and Estimated Annual Production**

	Well Name/Number	Date Drilled	Service Status	Date of Pump Test	Power Usage (kWh per AF)	Total Power Consumption (kWh)	Estimated GW Extraction (AF)
2009	Well 1 (North)	1979/Apr	Active	2/10/2009	571	303,988	532
	Well 2 (Big Horn)	2008/Mar	Active	2/10/2009	526	802,216	1,525
	Well 3 (New)	2006/Feb	Active	N/A	N/A	575,660	N/A
	Well 4	1981/May	Active	1/29/2009	588	491,914	837
	Well 4R	2020/Feb	Active	N/A	N/A	N/A	N/A
	Well 5	1976/Mar	Active	1/29/2009	465	475,628	1,023
	Well 6	1980/Jan	Active	1/29/2009	672	431,728	642
	Well 7	1980/Jan	Active	1/29/2009	469	478,494	1,020
	Well 8	1979/Dec	Active	1/29/2009	757	335,949	444
	Coyote Trails Well	1980/Feb	Active	N/A	N/A	N/A	N/A
	HQ Well	2014/May	Active	N/A	N/A	N/A	N/A
	Old Well 2	1979/Apr	Inactive	N/A	N/A	N/A	N/A
	Old Well 3	1977/Mar	Inactive	N/A	N/A	N/A	N/A
Old HQ Well	1970/Jun	Inactive	N/A	N/A	N/A	N/A	
						<i>Total</i>	6,023
2010	Well 1 (North)	1979/Apr	Active	3/4/2010	640	317,187	496
	Well 2 (Big Horn)	2008/Mar	Active	3/4/2010	566	609,453	1,077
	Well 3 (New)	2006/Feb	Active	3/4/2010	464	503,628	1,085
	Well 4	1981/May	Active	3/4/2010	498	243,134	488
	Well 4R	2020/Feb	Active	N/A	N/A	N/A	N/A
	Well 5	1976/Mar	Active	3/4/2010	470	314,930	670
	Well 6	1980/Jan	Active	3/4/2010	426	405,890	953
	Well 7	1980/Jan	Active	3/4/2010	472	417,107	884
	Well 8	1979/Dec	Active	3/4/2010	725	289,989	400
	Coyote Trails Well	1980/Feb	Active	N/A	N/A	N/A	N/A
	HQ Well	2014/May	Active	N/A	N/A	N/A	N/A
	Old Well 2	1979/Apr	Inactive	N/A	N/A	N/A	N/A
	Old Well 3	1977/Mar	Inactive	N/A	N/A	N/A	N/A
Old HQ Well	1970/Jun	Inactive	N/A	N/A	N/A	N/A	
						<i>Total</i>	6,053
2011	Well 1 (North)	1979/Apr	Active	3/7/2011	603	71,407	118
	Well 2 (Big Horn)	2008/Mar	Active	3/7/2011	570	902,173	1,583
	Well 3 (New)	2006/Feb	Active	3/7/2011	516	463,344	898
	Well 4	1981/May	Active	3/8/2011	509	396,028	778
	Well 4R	2020/Feb	Active	N/A	N/A	N/A	N/A
	Well 5	1976/Mar	Active	3/8/2011	477	391,971	822
	Well 6	1980/Jan	Active	3/7/2011	500	283,718	567
	Well 7	1980/Jan	Active	3/8/2011	492	293,888	597
	Well 8	1979/Dec	Active	3/8/2011	680	271,314	399
	Coyote Trails Well	1980/Feb	Active	N/A	N/A	N/A	N/A
	HQ Well	2014/May	Active	N/A	N/A	N/A	N/A
	Old Well 2	1979/Apr	Inactive	N/A	N/A	N/A	N/A
	Old Well 3	1977/Mar	Inactive	N/A	N/A	N/A	N/A
Old HQ Well	1970/Jun	Inactive	N/A	N/A	N/A	N/A	
						<i>Total</i>	5,763
2012	Well 1 (North)	1979/Apr	Active	2/28/2012	579	9,369	16
	Well 2 (Big Horn)	2008/Mar	Active	2/28/2012	534	1,059,170	1,983
	Well 3 (New)	2006/Feb	Active	2/28/2012	524	515,039	983
	Well 4	1981/May	Active	2/28/2012	491	436,874	890
	Well 4R	2020/Feb	Active	N/A	N/A	N/A	N/A
	Well 5	1976/Mar	Active	3/6/2012	460	455,876	991
	Well 6	1980/Jan	Active	3/6/2012	553	469,130	848
	Well 7	1980/Jan	Active	3/6/2012	521	449,932	864
	Well 8	1979/Dec	Active	3/6/2012	795	192,775	242
	Coyote Trails Well	1980/Feb	Active	N/A	N/A	N/A	N/A
	HQ Well	2014/May	Active	N/A	N/A	N/A	N/A
	Old Well 2	1979/Apr	Inactive	N/A	N/A	N/A	N/A
	Old Well 3	1977/Mar	Inactive	N/A	N/A	N/A	N/A
Old HQ Well	1970/Jun	Inactive	N/A	N/A	N/A	N/A	
						<i>Total</i>	6,818
2013	Well 1 (North)	1979/Apr	Active	2/27/2013	584	68	0
	Well 2 (Big Horn)	2008/Mar	Active	2/27/2013	541	952,621	1,761
	Well 3 (New)	2006/Feb	Active	2/27/2013	652	460,897	707
	Well 4	1981/May	Active	2/27/2013	456	474,176	1,040
	Well 4R	2020/Feb	Active	N/A	N/A	N/A	N/A
	Well 5	1976/Mar	Active	3/12/2013	464	470,704	1,014
	Well 6	1980/Jan	Active	10/29/2013	474	487,887	1,029
	Well 7	1980/Jan	Active	3/12/2013	551	475,257	863
	Well 8	1979/Dec	Active	3/2/2013	489	214,038	438
	Coyote Trails Well	1980/Feb	Active	N/A	N/A	N/A	N/A
	HQ Well	2014/May	Active	N/A	N/A	N/A	N/A
	Old Well 2	1979/Apr	Inactive	N/A	N/A	N/A	N/A
	Old Well 3	1977/Mar	Inactive	N/A	N/A	N/A	N/A
Old HQ Well	1970/Jun	Inactive	N/A	N/A	N/A	N/A	
						<i>Total</i>	6,852
2015	Well 1 (North)	1979/Apr	Active	2/10/2015	616	8,747	14
	Well 2 (Big Horn)	2008/Mar	Active	2/10/2015	573	1,089,944	1,902
	Well 3 (New)	2006/Feb	Active	2/17/2015	599	566,409	929
	Well 4	1981/May	Active	2/10/2015	564	441,751	783
	Well 4R	2020/Feb	Active	N/A	N/A	N/A	N/A
	Well 5	1976/Mar	Active	2/10/2015	471	372,221	790
	Well 6	1980/Jan	Active	2/17/2015	522	447,963	858
	Well 7	1980/Jan	Active	2/17/2015	563	449,803	799
	Well 8	1979/Dec	Active	2/17/2015	501	221,401	442
	Coyote Trails Well	1980/Feb	Active	N/A	N/A	N/A	N/A
	HQ Well	2014/May	Active	N/A	N/A	N/A	N/A
	Old Well 2	1979/Apr	Inactive	N/A	N/A	N/A	N/A
	Old Well 3	1977/Mar	Inactive	N/A	N/A	N/A	N/A
Old HQ Well	1970/Jun	Inactive	N/A	N/A	N/A	N/A	
						<i>Total</i>	6,518

**Notes:**

- Pump test records for 2014 were not provided
- Least power usage (kWh per AF) value chosen if multiple tests occurred on a single date or throughout year
- GW extracted estimate excludes Coyote Trails Well and HQ Well due to no hydraulic test and power consumption data
- Total Power Consumption data obtained from Appendix H-1
- Estimated Groundwater Extraction obtained by dividing Total Power Consumption (kWh) by power usage (kW per AF).



**APPENDIX I**  
**Verification Report for**  
**Patricia Davis (Amberglow)**

## **Appendix I: Pumping Verification Report for Patricia Davis (Amberglow)**

The purpose of this Pumping Verification Report (Report) is to verify and certify to the extent possible, all groundwater production from Ms. Patricia Davis (i.e. Amberglow Ranch) for the years between 1937 and 2019, with particular emphasis on the Base Period for use in establishing Annual Pumping Allocations and determining eligibility for the Transient Pool. An analysis of the verification data, the methods of verification, and findings on the Producer's pumping are presented herein.

### **History**

Ms. Davis owns 12 acres of property in Ridgecrest, California (APNs: 352-510-01, 352-510-05, and 352-510-06). The property is located within the Basin boundary. Ms. Davis reports that the property deed includes appurtenant water rights. Groundwater extraction started in 1968 for household use only, and expanded to agricultural use in 1983. There are three (3) wells located on this property. There is no information to suggest that any wells existed on this property prior to 1968. According to the response to the Questionnaire, groundwater is extracted from a well drilled under a Kern County Permit; however, the Permit Number was not provided. Currently, most of the extracted groundwater is used for agricultural purposes (pistachios), though the annual volume of water used for irrigation varies depends on the size of the pistachio orchard.

### **Description of Facilities**

There are currently two (2) active wells (Wells 1 and 2) and one (1) inactive well (Well 3) located within this property. According to the well construction data provided by Ms. Davis, Well 1 was drilled in 1987 with a total depth of 350 feet and a static water level of 242 feet below ground surface (bgs). Well 2 was drilled in 2016 with a total depth of 462 feet and a static water level of 280 feet bgs. Ms. Davis indicated in the response to the Questionnaire that the well driller reports for both active wells have been submitted to the County; however, the well driller reports were not provided in the response to the Questionnaire. The inactive well was drilled in 1968, and groundwater extraction began at this well in 1968. The inactive well ceased extraction in 1987 due to well collapse. Ms.

## **Appendix I: Pumping Verification Report for Patricia Davis (Amberglow)**

Davis installed a drip irrigation system in 1983 to minimize the waste of extracted groundwater for pistachio tree irrigation. Groundwater extractions were not monitored until 2019 when flow meters were installed at the wells. Information on the year the wells were drilled, well depth, static water level, and service status for the three (3) wells is provided in Table I-1.

### **Groundwater Production**

The Indian Wells Valley Cooperative Groundwater Management Group (Cooperative Group) do not have records of groundwater production at this property. The Authority also does not have reported monthly groundwater production from Ms. Davis. According to the response to the Questionnaire, Ms. Davis provided the combined estimated and metered groundwater production for the period between 1983 and 2019. Table I-2 summarizes the annual groundwater production estimates. Groundwater production between 1983 and 2018 were estimated based on the total number of irrigated trees and the total number of hours irrigated, while the 2019 groundwater production was based on meter reading records. It should be noted that Ms. Davis reported that a total of 1,700 pistachios trees have been located on her property every year since 1983. As documented in a 2015 study<sup>1</sup> conducted by the University of California Cooperative Extension, approximately 128 pistachio trees may be planted per acre of land. The number of pistachio trees reported by Ms. Davis is reasonable for 12 acres of property.

### **Verification Data and Information**

All of the data described below were used in the verification of groundwater production by Ms. Davis from the Basin.

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<sup>1</sup> *Sample Costs to Establish and Produce Pistachios*. University of California Cooperative Extension, 2015.

### **Groundwater Production Questionnaire**

Historical annual groundwater production between 1983 and 2019 were estimated by Ms. Davis by taking the product of the number of trees, the flow rate of the drip irrigation system [in gallon per hour,(GPH)], irrigation hours per day, and irrigation days per year. The data provided in the response to the Questionnaire were tabulated and are presented in Table I-2. Though a breakdown of extracted groundwater for agricultural and domestic use was not provided in the response to the Questionnaire, most of the extracted groundwater has been used for agricultural purposes. Between 2010 and 2014, annual groundwater production reported in the Questionnaire ranged from a minimum of 67.58 AF (between 2012 and 2014) to a maximum of 75.09 AF (between 2010 and 2011)

### **Land Use Data**

Generally, groundwater production can be approximately estimated by applying crop water requirements to the total irrigated acreage. Groundwater production estimates based on this approach may vary significantly due to various uncertainties in weather conditions, tree growth stage, irrigation efficiency, etc. However, this approach provides a general understanding of the potential annual water requirement for pistachio trees irrigation in a given year. According to the response to the Questionnaire, the total pistachio orchard acreage owned by Ms. Davis has been 12 acres since 1983; therefore, it is expected that the annual volume of groundwater extracted each year over the period between 1983 and 2019 would be relatively similar.

### **Basis of Verification**

The available data discussed in the “**Verification Data and Information**” section was considered in the verification of groundwater production by Ms. Davis.

### **Groundwater Production Questionnaire**

Although the data presented in Table I-2 for annual groundwater production estimates (e.g. number of pistachio trees, irrigation flow rate, and irrigation time per year) cannot be verified, annual groundwater production estimates can be reproduced between 1983 and 2018 based on the methodology provided by Ms. Davis. Table I-2 shows a comparison and the annual production differences between the annual groundwater production estimated by Ms. Davis and the reproduced annual groundwater productions based on Ms. Davis's methodology. The annual production differences between 1983 and 2018 shown on Table I-2 indicate that the reported annual groundwater production can be reproduced relatively accurately. There are minor discrepancies between the reported production in the response to the Questionnaire and the reproduced production, likely due to errors caused by rounding of conversion factors. It should be noted that the 2019 groundwater production of 50.23 AF (Table I-2) was reported through meter reading. If Ms. Davis' methodology is applied to 2019, the annual groundwater production estimate would be 45.08, which still shows reasonable similarity.

Verifications of groundwater production reported in the response to the Questionnaire using records of groundwater production from the Authority and the Cooperative Group were not performed due to the lack of available production data for Ms. Davis from these entities.

### **Land Use Data**

Pistachios are generally considered to be crops with a high volume of irrigation water demand. Typically, the annual water requirement to grow pistachio trees is approximately three (3) to four (4) AF per acre of pistachio orchard. If this range of water requirement (3 AF to 4 AF) is applied to the 12 acres of pistachio orchard owned by Ms. Davis, the annual groundwater production would be between 36 AF and 48 AF. Based on this approach, the estimated annual groundwater production reported in the response to the Questionnaire for the period between 1997 and 2007, as well as 2018 and 2019, were in reasonable agreement with this approach. However, it appears that the reported groundwater production of less than 10 AFY prior to 1989 was significantly

underestimated, and the reported groundwater production of greater than 90 AFY for the period between 2008 and 2008 was overestimated.

### **Review of Methods and Verification and Conclusions**

Ms. Davis (i.e. Amberglow Ranch) reports that groundwater extraction started in 1968 mainly for household use, and expanded to agricultural use in 1983. Although the reported groundwater production in the response to the Questionnaire covers the period between 1985 and 2019, verification of groundwater production with data collected from the Authority and the Cooperative Group were not performed because records of groundwater production for Ms. Davis were not available from these entities.

The annual groundwater production reported in the response to the Questionnaire between 1983 and 2018 were estimated based on the number of pistachio trees, the irrigation flow rates, and irrigation time per year. The estimated groundwater production based on the methodology used by Ms. Davis may be subject to significant uncertainty due to the lack of available data on various factors such as weather conditions, tree growth stage, irrigation efficiency, etc. If an annual water requirement of 3 AF to 4 AF per acre of pistachio orchard is assumed and applied to the 12-acre pistachio orchard owned by Ms. Davis, the estimated annual water requirements (between 36 AF and 48 AF) to meet the pistachio orchard water demands are inconsistent with the reported groundwater productions and land use estimates in the response to the Questionnaire. Specifically, the reported annual groundwater production of less than 10 AF prior to 1989 appears to be significantly underestimated, and the reported annual groundwater production for the Base Period (between 2010 and 2014) ranging from 67.58 AF (between 2012 and 2014) and 75.09 AF (between 2010 and 2011) appears to be slightly overestimated.

Finally, in accordance with the Sustainable Groundwater Management Act (SGMA) and California water law, the period between January 2010 and December 2014 has been considered by the IWVGA to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment. Annual groundwater production reported in the response to the Questionnaire during the Base Period are shown in Table I-2. As reported in the response to the Questionnaire, Ms. Davis's lowest

## **Appendix I: Pumping Verification Report for Patricia Davis (Amberglow)**

annual Base Period groundwater production of 67.58 AF occurred in 2010 and 2011, estimated using the product of the number of pistachio trees, the irrigation flow rate, and the irrigation time per year provided by Ms. Davis.

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**Table I-1  
Well Construction Information**

<b>Well Name/ Number</b>	<b>Date Drilled</b>	<b>Well Depth (feet)</b>	<b>Casing Length (feet)</b>	<b>Static WL (ft, bgs)</b>	<b>Pumping Depth (ft, bgs)</b>	<b>Pump Type</b>	<b>Motor Horsepower</b>	<b>Manufacturer' s Pump Rating (gpm)</b>	<b>Pump Test</b>	<b>Date of Pump Test</b>	<b>Service Status</b>
1	1987	350	N/A	242	N/A	N/A	N/A	N/A	N/A	N/A	Active
2	2016	462	N/A	280	N/A	N/A	N/A	N/A	N/A	N/A	Active
3	1968	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive

**Notes:**

- Ms. Davis indicated she obtained the well permit to drill Wells 1 and 2 on her property.
- Extraction started in 1968 for household and expanded for pistachio trees (12 acres) in 1983.



**Table I-2  
Annual Groundwater Production Estimates Between 1937 and 2019**

Year	Extracted Groundwater Estimates Provided in the Questionnaire						Water Use Recalculation		
	Number of Trees (1)	Drippers GPH (2)	Time Watered hours (3)	Days Watered per Year (4)	Total Production (gallon)	Total Production (AF)	Water Use per year (gallon) [(1) x (2) x(3) x(4)]	Groundwater Production (AF)	Production Difference** (AF)
1937 to 1983	NA	NA	NA	NA	NA	NA	NA	NA	NA
1983	1700	1	2	180	612,000	1.88	612,000	1.88	0.00
1984	1700	1	2	180	612,000	1.88	612,000	1.88	0.00
1985	1700	1	3	180	918,000	2.82	918,000	2.82	0.00
1986	1700	1	3	180	918,000	2.82	918,000	2.82	0.00
1987	1700	1	4	180	1,224,000	3.75	1,224,000	3.76	0.00
1988	1700	1	4	180	1,224,000	3.75	1,224,000	3.76	0.00
1989	1700	1	8	180	2,448,000	7.51	2,448,000	7.51	0.00
1990	1700	2	8	180	4,896,000	15.02	4,896,000	15.03	0.01
1991	1700	2	10	180	6,120,000	18.77	6,120,000	18.78	0.01
1992	1700	2	10	180	6,120,000	18.77	6,120,000	18.78	0.01
1993	1700	2	12	180	7,344,000	22.53	7,344,000	22.54	0.01
1994	1700	2	12	180	7,344,000	22.53	7,344,000	22.54	0.01
1995	1700	2	14	180	8,568,000	26.28	8,568,000	26.29	0.01
1996	1700	2	14	180	8,568,000	26.28	8,568,000	26.29	0.01
1997	1700	2	16	180	9,792,000	30.04	9,792,000	30.05	0.01
1998	1700	2	16	180	9,792,000	30.04	9,792,000	30.05	0.01
1999	1700	2	18	180	11,016,000	33.79	11,016,000	33.81	0.02
2000	1700	2	18	180	11,016,000	33.79	11,016,000	33.81	0.02
2001	1700	2	24	180	14,688,000	45.06	14,688,000	45.08	0.02
2002	1700	2	24	180	14,688,000	45.06	14,688,000	45.08	0.02
2003	1700	2	24	180	14,688,000	45.06	14,688,000	45.08	0.02

**Table I-2  
Annual Groundwater Production Estimates Between 1937 and 2019**

Year	Extracted Groundwater Estimates Provided in the Questionnaire						Water Use Recalculation		
	Number of Trees (1)	Drippers GPH (2)	Time Watered hours (3)	Days Watered per Year (4)	Total Production (gallon)	Total Production (AF)	Water Use per year (gallon) [(1) x (2) x(3) x(4)]	Groundwater Production (AF)	Production Difference** (AF)
2004	1700	2	24	180	14,688,000	45.06	14,688,000	45.08	0.02
2005	1700	2	24	180	14,688,000	45.06	14,688,000	45.08	0.02
2006	1700	2	24	180	14,688,000	45.06	14,688,000	45.08	0.02
2007	1700	2	24	180	14,688,000	45.06	14,688,000	45.08	0.02
2008	1700	4	24	180	29,376,000	90.11	29,376,000	90.15	0.04
2009	1700	4	24	180	29,376,000	90.11	29,376,000	90.15	0.04
2010	1700	4	20	180	24,480,000	75.09	24,480,000	75.13	0.03
2011	1700	4	20	180	24,480,000	75.09	24,480,000	75.13	0.03
2012	1700	4	18	180	22,032,000	67.58	22,032,000	67.61	0.03
2013	1700	4	18	180	22,032,000	67.58	22,032,000	67.61	0.03
2014	1700	4	18	180	22,032,000	67.58	22,032,000	67.61	0.03
2015	1700	4	18	180	22,032,000	67.58	22,032,000	67.61	0.03
2016	1700	4	16	180	19,584,000	60.07	19,584,000	60.10	0.03
2017	1700	4	16	180	19,584,000	60.07	19,584,000	60.10	0.03
2018	1700	4	14	180	17,136,000	52.56	17,136,000	52.59	0.02
2019*	1700	4	12	180	16,376,145	50.23	14,688,000	45.08	-5.16

**Note:**

- Ms. Davis only provided production estimates between 1983 and 2019.

\* 2019 groundwater production was obtained through meter readings.

\*\* Production difference is the difference between the recalculated groundwater production and the reported groundwater production in the Questionnaire.

**Table I-3  
Reported Annual Groundwater Production Between 2010 and 2014 (unit: acre-foot)**

Year	Number of Wells	Annual Production - Questionnaire 1	Monthly Average	Annual Production - IWVGA	Monthly Average	Discrepancy %	Annual Production - Cooperative Group	Monthly Average	Discrepancy %	Annual Production - Verification*	Monthly Average	Discrepancy %
2010	2	75.13	6.26	N/A	N/A	N/A	N/A	N/A	N/A	75.13	6.26	0.0%
2011	2	75.13	6.26	N/A	N/A	N/A	N/A	N/A	N/A	75.13	6.26	0.0%
2012	2	67.61	5.63	N/A	N/A	N/A	N/A	N/A	N/A	67.61	5.63	0.0%
2013	2	67.61	5.63	N/A	N/A	N/A	N/A	N/A	N/A	67.61	5.63	0.0%
2014	2	67.61	5.63	N/A	N/A	N/A	N/A	N/A	N/A	67.61	5.63	0.0%

**Note:**

- Discrepancy % is calculated by using

$$Discrepancy \% = \left[ 1 - \frac{Reported\ Extraction\ (IWVGA,\ Cooperative\ Group,\ or\ Verification)}{Reported\ Extraction\ (Questionnaire\ 1)} \right] \times 100\%$$

- Patrica Davis's groundwater extraction can be verified between 1983 and 2018 based on the data provided.

- Patrica Davis's metered groundwater extraction was 45.08 AF in 2019. The estimated groundwater extraction was 50.26 AF in 2019.

- The discrepancy is about -10% which indicates the estimated extraction is about 10 AF more than the metered extraction in 2019.

**APPENDIX J**  
**Verification Report for**  
**Quist Farms**

The purpose of this Pumping Verification Report (Report) is to verify and certify to the extent possible, all groundwater production from Quist Farms for the years between 1937 and 2019, with particular emphasis on the Base Period for use in establishing Annual Pumping Allocations and determining eligibility for the Transient Pool. An analysis of the verification data, the methods of verification, and findings on the Producer's pumping are presented herein.

## **History**

Quist Farms is located in Ridgecrest, California with a total land size of approximately 150 acres. Mr. Donald Quist indicated that the land is located within the Basin boundary, and groundwater has been extracted for beneficial use since 1973. There are currently seven (7) active wells drilled within this property, and there is no information to suggest that any wells existed on this property prior to 1973. Extracted groundwater has been reportedly used for domestic, livestock, and agricultural purposes, though the quantities of extracted groundwater for domestic and livestock purposes were not specified in the response to the Questionnaire. The annual volume of water used for irrigation varies depending on the amount of agricultural land in production and crop types.

## **Description of Facilities**

Quist Farms started groundwater extraction mainly for agricultural purposes in 1975. The agricultural land size gradually expanded from one (1) acre in 1975 to 150 acres in 2019. Similarly, crop types have also changed from alfalfa in 1975 to pistachios (both bearing and non-bearing pistachios) in 2019. There are currently seven (7) active wells and no inactive wells located within these properties:

- East Well
  - Kern County Assessor Parcel Number (APN) 352-300-10-00-2;
- Center Well

## Appendix J: Pumping Verification Report for Quist Farms

- APN 352-300-11-00-5;
- West Well
  - APN 352-300-19-00-9;
- B, C, D and E Wells
  - APN 352-261-16-00-6

The Center Well was the first well owned by Quist Farms. The Center Well was drilled in 1974 and later deepened to the current depth of 404 feet in 1994. There are seven (7) submersible pumps installed for these wells. The pump power ratings range from 5 horsepower to 30 horsepower, and pump flow rates range from 37 gallons per minute (gpm) to 285 gpm (see Table J-1). Pump tests were performed at the East Well, the West Well, and the D well in 1991, 1991, and 2015, respectively. Extracted groundwater is fed into a double line drip irrigation system with computer-automated controls.

Information on the County permit for groundwater extraction from these wells was not provided in the response to the Questionnaire. The well driller reports for these seven (7) wells are provided in Appendix J-1. General information on well construction, water level, well pumps, and service status is provided in Table J-1.

### **Groundwater Production**

According to the response to the Questionnaire, groundwater extraction at Quist Farms started in 1973, though the first well owned by Quist Farms (Center Well) was not drilled until 1974. Groundwater extraction data for 1973 and 1974 was not provided in the response to the Questionnaire. The first record of groundwater production provided in the response to the Questionnaire was in 1975, and the extracted groundwater water was mainly for drought-tolerant but high-water requirement alfalfa. The volume of groundwater extraction has gradually increased since 1975 due to the increase in land in agricultural production. For example, the total groundwater production in 1975 was 8 acre-feet (AF); however, groundwater production in 2019 was 637.5 AF. Historical crop types and annual groundwater production as provided in the response to the Questionnaire for Quist Farms for the period between 1975 and 2019 is provided in Table J-2. During the Base Period

(between 2010 and 2014), annual groundwater production ranged from 410.9 AF in 2011 to 496.4 AF in 2014.

### **Verification Data and Information**

All of the data provided in the Questionnaire that can be used in the verification of groundwater production are described below.

#### **Groundwater Production Questionnaire**

Quist Farms provided combined annual groundwater production data between 1975 and 2019. Historical crop types, corresponding irrigated acres, and total annual groundwater production is shown on Table J-2. In the response to the Questionnaire, Quist Farms estimated annual groundwater production based on irrigated acreage and anticipated water use for the years 1975 to 2008 and power consumption records for years 2009 to 2019.

A breakdown of irrigated acres by crop and total estimated water use between 2010 and 2014 is provided in Table J-3. Between 2010 and 2014, annual groundwater production reported in the Questionnaire ranged from 410.9 AF in 2011 to 496.4 AF in 2014.

#### **Power Consumption**

Tabulated electric power consumption records (see Appendix J-2) from the Southern California Edison Company (Edison) for the property was submitted with the response to the Questionnaire. The data shown in Appendix J-2 includes monthly power consumption and monthly solar power usage (in kilowatt-hours, kWh) for the Quist Farms property for the years 2009 to 2019.

## Land Use Data

In the response to the Questionnaire, Quist Farms reported that annual groundwater production estimates were based on pump curves and logged time data. However, in reporting the annual production for the bearing pistachio and nonbearing pistachio crops, it appears that the amount of irrigated land, crop type, and their corresponding water requirements were used for the period between 1975 and 2008, and power consumption data was used for years 2009 to 2019. Annual groundwater production (acre-feet) was obtained by multiplying the irrigated land for alfalfa, bearing pistachio trees, and nonbearing pistachio trees (acres) by their respective water requirement that year (acre-feet/ acre) and taking their summation.

Quist Farms' annual irrigated acreage between 1975 and 2008 is shown on Table J-2. The irrigated lands were initially used for alfalfa in 1975, and gradually changed to bearing and non-bearing pistachio trees. Generally, groundwater production can be estimated by applying the crop water requirement to the total irrigated acreage. Therefore, the annual volume of extracted groundwater should correlate to the acreage of irrigated land. For alfalfa, Quist Farms has had 1 acre of land for alfalfa between 1975 and 1979, 10 acres between 1980 and 1985, 7 acres between 1986 and 1987, and no agricultural land for alfalfa thereafter. Quist Farms started to plant pistachios in 1984. The acreage of pistachio orchards (non-bearing pistachio) in 1984 was 2 acres, increasing gradually after 1984 with a mixture of both bearing and non-bearing pistachio trees. In 2019, the total irrigated acreage for pistachio orchard was 150 acres, which includes 136.8 acres for bearing pistachio trees and 7.2 acres for nonbearing pistachio trees.

## Basis of Verification

The available data discussed in the “**Verification Data and Information**” section was considered in the verification of groundwater production by Quist Farms.



## **Records of Groundwater Production from the Authority and Cooperative Group**

The Cooperative Group's records of groundwater production indicate that Quist Farms extracted groundwater at 750 AF per year between 2002 and 2016. The differences between the Cooperative Group's records and the reported production in the response to the Questionnaire range from 218.4 AF (2016) to 376 AF (2002, 2003, and 2004). In general, the production data recorded by the Cooperative Group for Quist Farms is significantly higher than the reported production in the response to the Questionnaire. A comparison of groundwater production as provided in the response to the Questionnaire to records of groundwater production from the Cooperative Group are provided on Table J-4.

The Authority does not have production records for Quist Farms prior to August 2018. However, groundwater production data reported to the Authority in 2019 was 636.3 AF, which is essentially equal to the reported production of 637.5 AF in the response to the Questionnaire with a discrepancy of about 0.18 percent.

### **Land Use Data**

Quist Farms estimated groundwater productions based on irrigated acreage for the period between 1975 and 2008 and power consumption records for years 2009 to 2019. However, Quist Farms also provided annual groundwater production estimates for years 2009 to 2019 using the irrigated acreage estimation method.

As shown in Table J-5, the reported annual groundwater extractions as provided in the response to the Questionnaire are generally slightly higher when estimating production using irrigated land, crop type, and their corresponding water requirements. For example, a crop water requirement of 421.9 AF was estimated for the bearing and nonbearing pistachio orchards with land sizes of 79.2 acres and 55.8 acres, respectively, in 2010; the 2010 reported groundwater production based on power consumption records was 443.8 AF, a difference of approximately 22 AF. Similarly, the differences between the estimated water requirement based on irrigated acreage and reported groundwater

production based on power consumption for 2011, 2012, 2013 and 2014 are 11 AF, 16 AF, 63 AF, and 24 AF, respectively. The comparison suggests that the reported groundwater production from Quist Farms prior to 2009 reasonably represents the crop water requirements based on the irrigated acreage provided in the response to the Questionnaire, when potential variations in weather conditions are considered.

### **Power Consumption Data**

Based on the data shown in Appendix J-2, the annual groundwater production can be determined by totaling the monthly power consumption (kWh) in a single year, and dividing it by the kWh required to pump 1 AF of water. In estimating the kWh required to pump 1 AF, several operating parameters were assumed such as motor efficiency, pump efficiency, and drawdown. In 2019, the Authority's production records show the groundwater production by Quist Farms was 636.3 AF in 2019, which is consistent with the 637.5 AF estimated from power consumption data.

### **Review of Methods and Verification and Conclusions**

Though the Cooperative Group has records of groundwater production for the period between 2002 and 2016, the production records from the Cooperative Group may be questionable as the production data is a constant number (750 AFY) for the entire reported period. The Authority's production records show that groundwater production by Quist Farms was 636.3 AF in 2019, which is essentially equal to the production of 637.5 AF as reported in the response to the Questionnaire.

The annual groundwater production reported in the response to the Questionnaire between 2010 and 2014 was estimated based power consumption records. For the Base Period, Quist Farms provided annual groundwater production estimates based on irrigated acreage and from power consumption. The comparison between the two estimation methods suggests that the reported groundwater production in Quist Farms' response to the questionnaire is fairly consistent between both methods.

## Appendix J: Pumping Verification Report for Quist Farms

Finally, in accordance with the Sustainable Groundwater Management Act (SGMA) and California water law, the period between January 2010 and December 2014 has been considered by the Authority to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment. Annual groundwater production reported in the response to the Questionnaire during the Base Period are shown in Table J-3. As reported in the response to the Questionnaire, the lowest annual Base Period groundwater production of 410.9 AF occurred in 2011 at Quist Farms, estimated using power consumption records.

J:\2652 IWVGA\Pumping Verification Reports\Quist Farms\APP-J\_Pumping Verification Report (Quist).docx

**Table J-1**  
**Well Construction Information**

Well Name/ Number	Date Drilled	Well Depth (feet)	Casing Length (feet)	Static WL (ft, bgs)	Pumping Depth (ft, bgs)	Pump Type	Motor Horsepower	Manufacturer's Pump Rating (gpm)	Pump Test	Date of Pump Test	Service Status
East Well	1991/Apr	405	400	226	294	Submersible	10	89	250 gpm	1991/Apr	Active
Center Well <sup>1</sup>	1974	404	399	262	320	Submersible	5	37	N/A	N/A	Active
West Well	1991/May	405	400	232	273	Submersible	10	85	300 gpm	1991/May	Active
Well B <sup>2</sup>	1994/Mar	450	450	263	315	Submersible	30	267	N/A	N/A	Active
Well C	1994/Mar	457	455	240	315	Submersible	30	285	N/A	N/A	Active
Well D	2015/Mar	500	500	271	315	Submersible	30	285	300 gpm	2015/Mar	Active
Well E <sup>3</sup>	1995/Sep	455	455	272	315	Submersible	30	285	N/A	N/A	Active

**Notes:**

<sup>1</sup> Center well was drilled in 1974 and was deepened in 1994. Static water level was measured on 7/18/2018.

<sup>2</sup> Well B static water level was measured on 7/1/2018.

<sup>3</sup> Well E static water level was measured on 4/4/2014.

**Table J-2  
Annual Groundwater Production Estimates Between 1937 And 2019**

Year	Crop	Questionnaire				
		Irrigated Acreage (acre)	Groundwater Production (AFY)	Estimate Method	Average Water Use per Acre (AF)	Total Groundwater Production (AFY)
1937 to 1974	NA	NA	NA	NA	NA	NA
1975	Alfalfa	1.0	8.0	Irrigation Land	8.00	8.0
1976	Alfalfa	1.0	8.0	Irrigation Land	8.00	8.0
1977	Alfalfa	1.0	8.0	Irrigation Land	8.00	8.0
1978	Alfalfa	1.0	8.0	Irrigation Land	8.00	8.0
1979	Alfalfa	1.0	8.0	Irrigation Land	8.00	8.0
1980	Alfalfa	10.0	80.0	Irrigation Land	8.00	80.0
1981	Alfalfa	10.0	80.0	Irrigation Land	8.00	80.0
1982	Alfalfa	10.0	80.0	Irrigation Land	8.00	80.0
1983	Alfalfa	10.0	80.0	Irrigation Land	8.00	80.0
1984	Alfalfa	10.0	80.0	Irrigation Land	8.00	80.4
	Nonbearing Pistachio	2.0	0.4		0.20	
1985	Alfalfa	10.0	80.0	Irrigation Land	8.00	84.4
	Nonbearing Pistachio	11.0	4.4		0.40	
1986	Alfalfa	7.0	56.0	Irrigation Land	8.00	63.5
	Nonbearing Pistachio	15.0	7.5		0.50	

**Table J-2  
Annual Groundwater Production Estimates Between 1937 And 2019**

Year	Crop	Questionnaire				
		Irrigated Acreage (acre)	Groundwater Production (AFY)	Estimate Method	Average Water Use per Acre (AF)	Total Groundwater Production (AFY)
1987	Alfalfa	7.0	56.0	Irrigation Land	8.00	68.0
	Nonbearing Pistachio	15.0	12.0		0.80	
1988	Nonbearing Pistachio	20.6	24.7	Irrigation Land	1.20	24.7
1989	Nonbearing Pistachio	20.6	43.3	Irrigation Land	2.10	43.3
1990	Nonbearing Pistachio	20.6	68.0	Irrigation Land	3.30	68.0
1991	Nonbearing Pistachio	20.6	98.9	Irrigation Land	4.80	98.9
1992	Bearing Pistachio	20.6	99.0	Irrigation Land	4.81	99.0
1993	Bearing Pistachio	20.6	99.0	Irrigation Land	4.81	106.2
	Nonbearing Pistachio	14.3	7.2		0.50	
1994	Bearing Pistachio	20.6	99.0	Irrigation Land	4.81	119.1
	Nonbearing Pistachio	28.7	20.1		0.70	
1995	Bearing Pistachio	20.6	99.0	Irrigation Land	4.81	133.4
	Nonbearing Pistachio	43.0	34.4		0.80	
1996	Bearing Pistachio	20.6	99.0	Irrigation Land	4.81	167.8
	Nonbearing Pistachio	57.3	68.8		1.20	
1997	Bearing Pistachio	20.6	99.0	Irrigation Land	4.81	207.9
	Nonbearing Pistachio	57.3	108.9		1.90	

**Table J-2  
Annual Groundwater Production Estimates Between 1937 And 2019**

Year	Crop	Questionnaire				
		Irrigated Acreage (acre)	Groundwater Production (AFY)	Estimate Method	Average Water Use per Acre (AF)	Total Groundwater Production (AFY)
1998	Bearing Pistachio	20.6	99.0	Irrigation Land	4.81	265.2
	Nonbearing Pistachio	57.3	166.2		2.90	
1999	Bearing Pistachio	20.6	99.0	Irrigation Land	4.81	316.7
	Nonbearing Pistachio	57.3	217.7		3.80	
2000	Bearing Pistachio	20.6	99.0	Irrigation Land	4.81	351.1
	Nonbearing Pistachio	57.3	252.1		4.40	
2001	Bearing Pistachio	20.6	99.0	Irrigation Land	4.81	374.0
	Nonbearing Pistachio	57.3	275.0		4.80	
2002	Bearing Pistachio	77.9	374.0	Irrigation Land	4.80	374.0
2003	Bearing Pistachio	77.9	374.0	Irrigation Land	4.80	374.0
2004	Bearing Pistachio	78.0	374.0	Irrigation Land	4.79	374.0
2005	Bearing Pistachio	78.1	375.0	Irrigation Land	4.80	375.0
2006	Bearing Pistachio	78.3	376.0	Irrigation Land	4.80	376.0
2007	Bearing Pistachio	78.3	376.0	Irrigation Land	4.80	376.0
2008	Bearing Pistachio	79.2	380.0	Irrigation Land	4.80	380.0
2009	Bearing Pistachio	79.2	442.9	Power Consumption	NA	442.9
	Nonbearing Pistachio	55.8				

**Table J-2  
Annual Groundwater Production Estimates Between 1937 And 2019**

Year	Crop	Questionnaire				
		Irrigated Acreage (acre)	Groundwater Production (AFY)	Estimate Method	Average Water Use per Acre (AF)	Total Groundwater Production (AFY)
2010	Bearing Pistachio	79.2	443.8	Power Consumption	NA	443.8
	Nonbearing Pistachio	55.8				
2011	Bearing Pistachio	79.2	410.9	Power Consumption	NA	410.9
	Nonbearing Pistachio	55.8				
2012	Bearing Pistachio	81.0	426.0	Power Consumption	NA	426.0
	Nonbearing Pistachio	55.8				
2013	Bearing Pistachio	81.0	429.3	Power Consumption	NA	429.3
	Nonbearing Pistachio	55.8				
2014	Bearing Pistachio	81.0	496.4	Power Consumption	NA	496.4
	Nonbearing Pistachio	55.8				
2015	Bearing Pistachio	81.8	492.7	Power Consumption	NA	492.7
	Nonbearing Pistachio	55.8				
2016	Bearing Pistachio	81.8	531.6	Power Consumption	NA	531.6
	Nonbearing Pistachio	55.8				
2017	Bearing Pistachio	81.8	509.2	Power Consumption	NA	509.2
	Nonbearing Pistachio	55.8				



**Table J-2  
Annual Groundwater Production Estimates Between 1937 And 2019**

Year	Crop	Questionnaire				
		Irrigated Acreage (acre)	Groundwater Production (AFY)	Estimate Method	Average Water Use per Acre (AF)	Total Groundwater Production (AFY)
2018	Bearing Pistachio	136.8	648.8	Power Consumption	NA	648.8
	Nonbearing Pistachio	7.2				
2019	Bearing Pistachio	136.8	637.5	Power Consumption	NA	637.5
	Nonbearing Pistachio	7.2				

**Notes:**

- Power Consumption was estimated by kWh data provided by Southern California Edison and assumed operating parameters such as motor efficiency, pump efficiency, and drawdown.

**Table J-3  
Summary of Land and Water Use**

Year	Agricultural			Domestic Usage (AF)	Commercial Usage (AF)	Industrial Usage (AF)	Total Water Usage (AF)
	Crop	Irrigated Acreage (acre)	Water Use (AF)				
2010	Bearing Pistachio	79.2	443.8	N/A	N/A	N/A	443.8
	Nonbearing Pistachio	55.8					
2011	Bearing Pistachio	79.2	410.9	N/A	N/A	N/A	410.9
	Nonbearing Pistachio	55.8					
2012	Bearing Pistachio	81.0	426.0	N/A	N/A	N/A	426.0
	Nonbearing Pistachio	55.8					
2013	Bearing Pistachio	81.0	429.3	N/A	N/A	N/A	429.3
	Nonbearing Pistachio	55.8					
2014	Bearing Pistachio	81.0	496.4	N/A	N/A	N/A	496.4
	Nonbearing Pistachio	55.8					

**Table J-4**  
**Reported Annual Groundwater Production Between 2010 and 2014 (unit: acre-foot)**

Year	Number of Wells	Annual Production - Questionnaire 1	Monthly Average	Annual Production - IWVGA	Monthly Average	Discrepancy %	Annual Production - Cooperative Group	Monthly Average	Discrepancy %
2010	7	443.8	36.98	N/A	N/A	N/A	750	62.5	-69.0%
2011	7	410.9	34.24	N/A	N/A	N/A	750	62.5	-82.5%
2012	7	426.0	35.50	N/A	N/A	N/A	750	62.5	-76.1%
2013	7	429.3	35.78	N/A	N/A	N/A	750	62.5	-74.7%
2014	7	496.4	41.37	N/A	N/A	N/A	750	62.5	-51.1%

**Notes:**

- Discrepancy % is calculated by using

$$Discrepancy \% = \left[ 1 - \frac{Reported\ Extraction\ (IWVGA\ or\ Cooperative\ Group)}{Reported\ Extraction\ (Questionnaire\ 1)} \right] \times 100\%$$

- Quist Farms reported groundwater production of 637.5 AF in 2019.

- The Authority has a record of 636.3 AF in 2019. The discrepancy is 0.18 %.

**Table J-5**

**Comparison of Estimation Methods for Groundwater Usage Between 2009 and 2019**

<b>Year</b>	<b>Crop Type</b>	<b>Irrigated Acreage (acre)</b>	<b>Estimation Method: Irrigation Land (AF)</b>	<b>Estimation Method: Power Consumption (AF)</b>	<b>Difference (AF)</b>
2009	Bearing Pistachio	79.2	380.0	442.9	21.0
	Nonbearing Pistachio	55.8	41.9		
	Subtotal:	135.0	421.9		
2010	Bearing Pistachio	79.2	380.0	443.8	21.9
	Nonbearing Pistachio	55.8	41.9		
	Subtotal:	135.0	421.9		
2011	Bearing Pistachio	79.2	380.0	410.9	11.0
	Nonbearing Pistachio	55.8	41.9		
	Subtotal:	135.0	421.9		
2012	Bearing Pistachio	81.0	389.0	426.0	16.0
	Nonbearing Pistachio	55.8	53.0		
	Subtotal:	136.8	442.0		
2013	Bearing Pistachio	81.0	389.0	429.3	62.9
	Nonbearing Pistachio	55.8	103.2		
	Subtotal:	136.8	492.2		
2014	Bearing Pistachio	81.0	348.0	496.4	23.5
	Nonbearing Pistachio	55.8	171.9		
	Subtotal:	136.8	519.9		
2015	Bearing Pistachio	81.8	344.0	492.7	44.9
	Nonbearing Pistachio	55.8	193.6		
	Subtotal:	137.6	537.6		
2016	Bearing Pistachio	81.8	335.0	531.6	35.5
	Nonbearing Pistachio	55.8	232.1		
	Subtotal:	137.6	567.1		
2017	Bearing Pistachio	81.8	327.0	509.2	49.9
	Nonbearing Pistachio	55.8	232.1		
	Subtotal:	137.6	559.1		
2018	Bearing Pistachio	136.8	657.0	648.8	16.1
	Nonbearing Pistachio	7.2	7.9		
	Subtotal:	144.0	664.9		
2019	Bearing Pistachio	136.8	629.0	637.5	2.7
	Nonbearing Pistachio	7.2	5.8		
	Subtotal:	144.0	634.8		

**Notes:**

- Quist Farms provided groundwater production estimates based on irrigated land and based on power consumption records for the years 2009 to 2019.

# APPENDIX J-1

## **Well Drillers Report**

TRIPPLICATE  
Owner's Copy

STATE OF CALIFORNIA  
THE RESOURCES AGENCY  
DEPARTMENT OF WATER RESOURCES  
WATER WELL DRILLERS REPORT

Do not fill in

No. 351047

Notice of Intent No. 25044  
Local Permit No. or Date 04/01/91

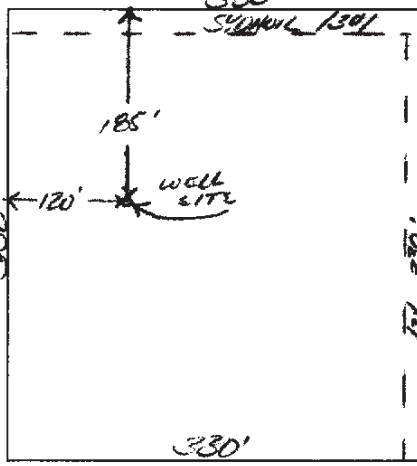
State Well No. \_\_\_\_\_  
Other Well No. \_\_\_\_\_

(1) OWNER: Name DONALD QUIST  
Address 3751 SYDNOR AVE.  
City RIDGECREST, CA. ZIP 93555

(12) WELL LOG: Total depth 405 ft. Completed depth 400 ft.  
from ft. to ft. Formation (Describe by color, character, size or material)

(2) LOCATION OF WELL (See instructions):  
County KERN Owner's Well Number 1  
Well address if different from above \_\_\_\_\_  
Township 26-S Range 39-E Section 26-P  
Distance from cities, roads, railroads, fences, etc. \_\_\_\_\_  
APN: 352-300-10-00-2

0-120 - SAND, BRN. CLAY, GRAVEL  
120-300 - SAND, BRN. CLAY, SM. ROCKS  
- GRAVEL  
300-340 - SAND, BRN. CLAY  
340-405 - BRN. CLAY, SAND, SM. ROCKS



(3) TYPE OF WORK:  
New Well  Deepening   
Reconstruction   
Reconditioning   
Horizontal Well   
Destruction  (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:  
Domestic   
Irrigation   
Industrial   
Test Well   
Municipal   
Other  (Describe)

(5) EQUIPMENT:  
Rotary  Reverse   
Cable  Air   
Other  Bucket

(6) GRAVEL PACK:  
Yes  No  Size 3/8" S&A  
Diameter of bore 12.5"  
Packed from 50 to 405 ft.

(7) CASING INSTALLED:  
Steel  Plastic  Concrete

(8) PERFORATIONS:  
Type of perforation or size of screen

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
+1	339	8	S-21	339	279	.040
279	319	8	S-21	319	299	.040

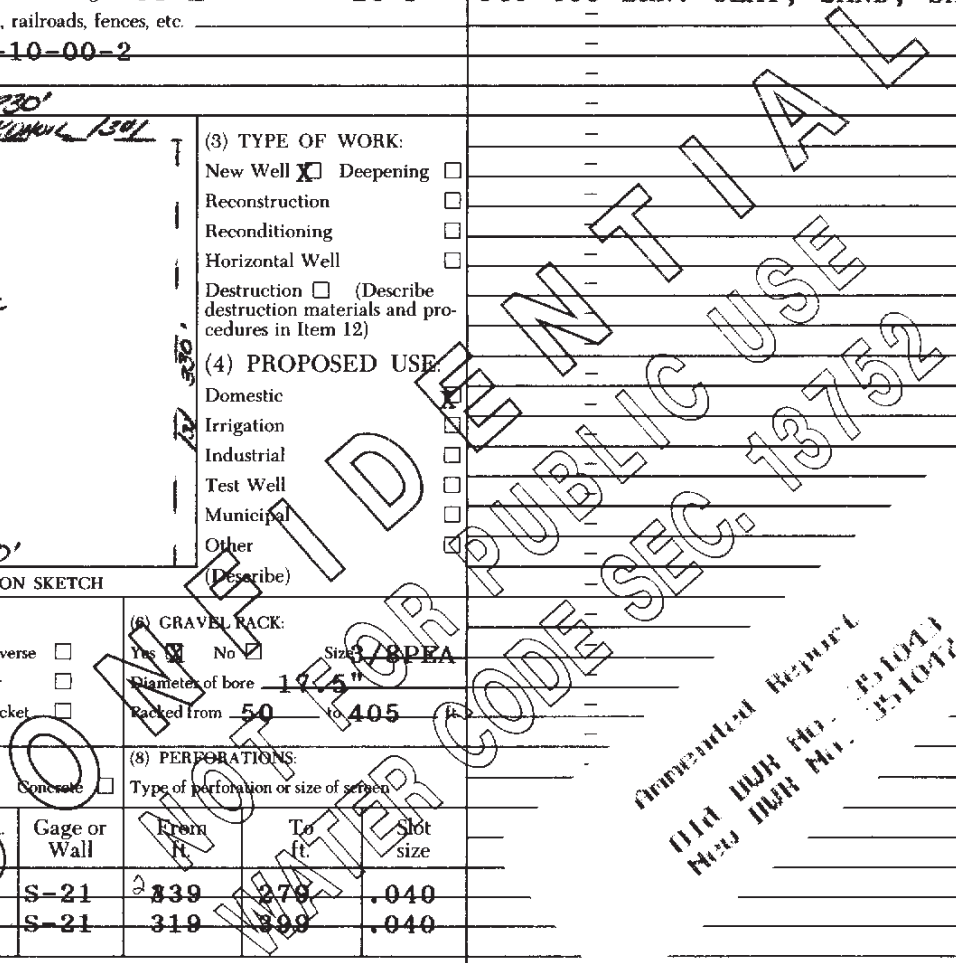
(9) WELL SEAL:  
Was surface sanitary seal provided? Yes  No  If yes, to depth 50 ft.  
Were strata sealed against pollution? Yes  No  Interval \_\_\_\_\_ ft.  
Method of sealing CEMENT GROUT

(10) WATER LEVELS:  
Depth of first water, if known 226 ft.  
Standing level after well completion 226 ft.

Work started 04/08 1991 Completed 04/19 1991

WELL DRILLER'S STATEMENT:  
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.  
Signed \_\_\_\_\_ (Well Driller)  
NAME KIRSCHENMAN'S WELL DRILLING  
(Person, firm, or corporation) (Typed or printed)  
Address P.O. BOX 119  
City INYOKERN ZIP 93555  
License No. 308367 Date of this report 04/25/91

(11) WELL TESTS:  
Was well test made? Yes  No  If yes, by whom? DRILLER  
Type of test Pump  Bailer  Air lift   
Depth to water at start of test 226 ft. At end of test U/R ft.  
Discharge 250 gal/min after 12 hours Water temperature \_\_\_\_\_  
Chemical analysis made? Yes  No  If yes, by whom? \_\_\_\_\_  
Was electric log made Yes  No  If yes, attach copy to this report



Amended Report  
Old DWR No. 351047  
New DWR No. 351047

TRIPLICATE

Owner's Copy

Page 1 of 1

Owner's Well No. 1

Date Work Began 12/19/94, Ended 12/22/94

Local Permit Agency

Permit No. Permit Date

STATE OF CALIFORNIA WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 396047

DWR USE ONLY - DO NOT FILL IN. STATE WELL NO./STATION NO., LATITUDE, LONGITUDE, APN/TRS/OTHER.

GEOLOGIC LOG and WELL OWNER sections. Includes orientation, depth to first water, well location (Ridgecrest, Kern), and activity (Deepen).

Table with columns for Depth from Surface, Bore-hole Dia., Casing(s) (Type, Material/Grade, Internal Diameter, Gauge or Wall Thickness, Slot Size), and Annular Material (Type, Cement, Bentonite, Fill, Filter Pack).

ATTACHMENTS section with checkboxes for Geologic Log, Well Construction Diagram, Geophysical Log(s), Soil/Water Chemical Analyses, and Other.

CERTIFICATION STATEMENT section with fields for Name (Kruscherman's Well Drilling), Address (P.O. Box 119, Ridgecrest, CA 93527), Date Signed (12/23/94), and License Number (384367).

TRIPPLICATE  
Owner's Copy

STATE OF CALIFORNIA  
THE RESOURCES AGENCY  
DEPARTMENT OF WATER RESOURCES  
WATER WELL DRILLERS REPORT

Do not fill in

No. 351046

Notice of Intent No. 250454  
Local Permit No. or Date 04/01/91

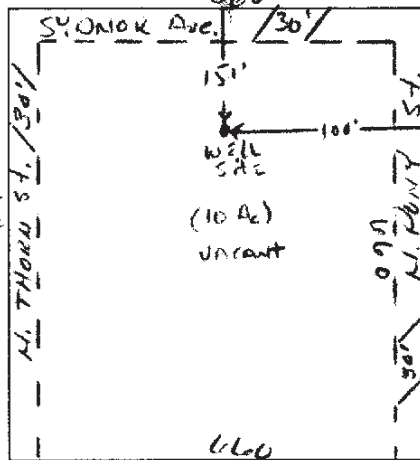
State Well No. \_\_\_\_\_  
Other Well No. \_\_\_\_\_

(1) OWNER: Name DONALD QUIST  
Address 3751 SYDNOR  
City RIDGECREST, CA. ZIP 93555

(12) WELL LOG: Total depth 405 ft. Completed depth 400 ft.  
from ft. to ft. Formation (Describe by color, character, size or material)

(2) LOCATION OF WELL (See instructions):  
County KERN Owner's Well Number 2  
Well address if different from above \_\_\_\_\_  
Township 26-S Range 39-E Section 26-P  
Distance from cities, roads, railroads, fences, etc. \_\_\_\_\_  
APN: 352-300-19-00-9

0-320 - SAND, BRN. CLAY, SM. ROCKS  
320-360 SAND, BRN. CLAY  
360-405 SAND, BRN. CLAY, WHITE CLAY



(3) TYPE OF WORK:  
New Well  Deepening   
Reconstruction   
Reconditioning   
Horizontal Well   
Destruction  (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:  
Domestic   
Irrigation   
Industrial   
Test Well   
Municipal   
Other  (Describe)

WELL LOCATION SKETCH

(5) EQUIPMENT:  
Rotary  Reverse   
Cable  Air   
Other  Bucket

(6) GRAVEL PACK:  
Yes  No  Size 1/8" PEA  
Diameter of bore 10.5"  
Packed from 50 to 405 ft.

(7) CASING INSTALLED:  
Steel  Plastic  Concrete

(8) PERFORATIONS:  
Type of perforation or size of screen

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
+1	239	8	S-21	239	279	.040
279	339	8	S-21	339	399	.040

(9) WELL SEAL:  
Was surface sanitary seal provided? Yes  No  If yes, to depth 50 ft.  
Were strata sealed against pollution? Yes  No  Interval \_\_\_\_\_ ft.  
Method of sealing CEMENT GROUTE

Work started 04/22 19 91 Completed 05/06 1991

(10) WATER LEVELS:  
Depth of first water, if known 232 ft.  
Standing level after well completion 232 ft.

WELL DRILLER'S STATEMENT:  
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

(11) WELL TESTS:  
Was well test made? Yes  No  If yes, by whom? DRILLER  
Type of test Pump  Bailer  Air lift   
Depth to water at start of test 232 ft. At end of test U/R ft.  
Discharge 300 gal/min after 12 hours Water temperature \_\_\_\_\_  
Chemical analysis made? Yes  No  If yes, by whom? \_\_\_\_\_  
Was electric log made Yes  No  If yes, attach copy to this report

Signed \_\_\_\_\_ (Well Driller)  
NAME KIRSCHENMAN'S WELL DRILLING  
(Person, firm, or corporation) (Typed or printed)  
Address P.O. BOX 119  
City INYOKERN ZIP 93555  
License No. 308367 Date of this report 06/06/91



TRIPLICATE

Owner's Copy

Page 1 of 1

Owner's Well No. unk

Date Work Began 3-7-94 Ended 3-15-94

Local Permit Agency Kern County Health Services

Permit No. 4-034-14 Permit Date

South

STATE OF CALIFORNIA WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 463867

DWR USE ONLY - DO NOT FILL IN. STATE WELL NO./STATION NO., LATITUDE, LONGITUDE, APN/TRS/OTHER.

GEOLOGIC LOG

ORIENTATION (X) VERTICAL HORIZONTAL ANGLE (SPECIFY)

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DESCRIPTION

Describe material, grain size, color, etc.

Table with columns: DEPTH FROM SURFACE (Ft. to Ft.), DESCRIPTION. Rows: 0-10 sand, 10-20 sand, 20-40 compact sand, 40-60 sand & rock (cobble stone), 60-180 sand & rock, 180-220 hard packed sand, 220-380 small hard packed sand, 380-400 large sand & small gravel, 400-450 small packed sand.

WELL OWNER

Name Don Quist, Mailing Address 3751 Sydnor Ave, Ridgecrest, CA 93555

Address 3751 Sydnor Ave, City Ridgecrest, County Kern

APN Book 26S, Page 39E, Parcel 352-261-16, Township, Range, Section 35-D

Latitude, Longitude

LOCATION SKETCH NORTH SOUTH WEST EAST. ACTIVITY (X) NEW WELL. MODIFICATION/REPAIR. DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG"). PLANNED USE(S) MONITORING. WATER SUPPLY Domestic, Public, Irrigation, Industrial, "TEST WELL", CATHODIC PROTECTION OTHER (Specify).

DRILLING METHOD Rotary FLUID Bentonite. WATER LEVEL & YIELD OF COMPLETED WELL. DEPTH OF STATIC WATER LEVEL (Ft.) & DATE MEASURED. ESTIMATED YIELD\* (GPM) & TEST TYPE. TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.). \* May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING 450 (Feet). TOTAL DEPTH OF COMPLETED WELL 450 (Feet)

Table with columns: DEPTH FROM SURFACE, BORE-HOLE DIA. (Inches), CASING(S) TYPE, MATERIAL/GRADE, INTERNAL DIAMETER (Inches), GAUGE OR WALL THICKNESS, SLOT SIZE IF ANY (Inches), ANNULAR MATERIAL TYPE, CE-MENT, BEN-TONITE, FILL, FILTER PACK (TYPE/SIZE). Rows: 0-10 15" PVC 8" 200, 10-210 15" PVC 8" 200 1/8x7x8rows, 210-450 15" gravel.

NOTE: Centralizers installed at 230', 270', 310', 350', 390', and 430'.

- ATTACHMENTS (X) Geologic Log, Well Construction Diagram, Geophysical Log(s), Soil/Water Chemical Analyses, Other.

CERTIFICATION STATEMENT. I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief. Randall N. Wallis. NAME (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED). P.O. Box 1400, Barstow, CA 92312. ADDRESS, CITY, STATE, ZIP. Signed, WELL DRILLER/AUTHORIZED REPRESENTATIVE, DATE SIGNED, C-57 LICENSE NUMBER.

TRIPPLICATE  
Owner's Copy

North

STATE OF CALIFORNIA  
**WELL COMPLETION REPORT**  
Refer to Instruction Pamphlet

DWR USE ONLY - DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

Page 1 of 1

Owner's Well No. unk

No. **463866**

Date Work Began 2-22-94, Ended 3-15-94

Local Permit Agency Kern County Health Services

Permit No. E4-153-94 Permit Date \_\_\_\_\_

**GEOLOGIC LOG**

ORIENTATION ( )		DEPTH TO FIRST WATER		DESCRIPTION <i>Describe material, grain size, color, etc.</i>
<input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> HORIZONTAL <input type="checkbox"/> ANGLE _____ (SPECIFY)		_____ (Ft.) BELOW SURFACE		
DEPTH FROM SURFACE		DESCRIPTION		
Ft.	to Ft.			
0	10	small rocks (cobblestone)		
10	80	cut up cobble stone		
80	120	hard packed sand		
120	300	cut up cobble stone & sand		
300	320	sand with 5% brown clay		
320	360	sand		
360	370	sand with 5% white clay		
370	415	sand		
415	457	sand with 3% cobble stone		

TOTAL DEPTH OF BORING 457 (Feet)  
TOTAL DEPTH OF COMPLETED WELL 455 (Feet)

**WELL OWNER**

Name Don Quist

Mailing Address 3751 Sydnor Ave  
Ridgecrest CA 93555

CITY STATE ZIP

**WELL LOCATION**

Address 3751 Sydnor Ave.  
City Ridgecrest  
County Kern

APN Book \_\_\_\_\_ Page \_\_\_\_\_ Parcel 352-261-16  
Township 26S Range 39E Section 35-D

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

DEG. MIN. SEC. NORTH Longitude DEG. MIN. SEC. WEST

**LOCATION SKETCH**

NORTH

WEST EAST

SOUTH

Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc. PLEASE BE ACCURATE & COMPLETE.

**ACTIVITY ( )**

NEW WELL

MODIFICATION/REPAIR

\_\_\_\_\_ Deepen

\_\_\_\_\_ Other (Specify)

**DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")**

**PLANNED USE(S)**

( )

MONITORING

**WATER SUPPLY**

Domestic

Public

Irrigation

Industrial

"TEST WELL"

CATHODIC PROTECTION

OTHER (Specify)

**DRILLING METHOD** Rotary FLUID Bentonite

**WATER LEVEL & YIELD OF COMPLETED WELL**

DEPTH OF STATIC WATER LEVEL \_\_\_\_\_ (Ft.) & DATE MEASURED \_\_\_\_\_

ESTIMATED YIELD\* \_\_\_\_\_ (GPM) & TEST TYPE \_\_\_\_\_

TEST LENGTH \_\_\_\_\_ (Hrs.) TOTAL DRAWDOWN \_\_\_\_\_ (Ft.)

\* May not be representative of a well's long-term yield.

DEPTH FROM SURFACE	BORE-HOLE DIA. (Inches)	CASING(S)						DEPTH FROM SURFACE	ANNULAR MATERIAL					
		TYPE ( )			MATERIAL/GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS		SLOT SIZE IF ANY (Inches)	TYPE				
Ft.	to Ft.	BLANK	SCREEN	CONDUCTOR				FILL PIPE				Ft.	to Ft.	CE-MENT ( )
0	235	15"	x			PVC	8"	200		00	50	x		6 sack
235	455	15"	x			PVC	8"	200	1/8x7x8rows	50	455		x	gravel

NOTE: Centralizers installed at 235', 275', 315', 355', 395', and 435'.

**ATTACHMENTS ( )**

- Geologic Log
  - Well Construction Diagram
  - Geophysical Log(s)
  - Soil/Water Chemical Analyses
  - Other \_\_\_\_\_
- ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

**CERTIFICATION STATEMENT**

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Randall N. Wallis  
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

P.O. Box 1400

Barstow

CA

92312

ADDRESS

CITY

STATE

ZIP

Signed Randall Wallis  
WELL DRILLER/AUTHORIZED REPRESENTATIVE

DATE SIGNED \_\_\_\_\_

C-57 LICENSE NUMBER \_\_\_\_\_



TRIPLICATE  
Owner's Copy

STATE OF CALIFORNIA  
**WELL COMPLETION REPORT**  
Refer to Instruction Pamphlet

DWR USE ONLY - DO NOT FILL IN									
STATE WELL NO./STATION NO.									
LATITUDE					LONGITUDE				
APN/TRS/OTHER									

Page      of       
 Owner's Well No. 4 No. **463922**  
 Date Work Began 8/21/95, Ended 9/8/95  
 Local Permit Agency Kern County Environmental Health Services  
 Permit No. PH 107-95 Permit Date 6/14/95

**GEOLOGIC LOG**

ORIENTATION (∠)  VERTICAL  HORIZONTAL  ANGLE  (SPECIFY)

DEPTH FROM SURFACE		DESCRIPTION
Ft.	to Ft.	
0	10	Small rocks & cobblestones
10	50	Cobblestone
50	90	Traces of brown clay & sand
90	300	Cobblestone & sand
300	350	Sand
350	420	Sand & cobblestone
420	455	(slow) Sand & cobblestone

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE \_\_\_\_\_

Describe material, grain size, color, etc.

**WELL OWNER**

Name Don Quist  
 Mailing Address 3751 Sydner  
Ridgecrest CA 93555  
 CITY STATE ZIP

**WELL LOCATION**

Address \_\_\_\_\_  
 City \_\_\_\_\_  
 County \_\_\_\_\_  
 APN Book \_\_\_\_\_ Page \_\_\_\_\_ Parcel 352-261-16  
 Township 268 Range 39E Section 35  
 Latitude \_\_\_\_\_ NORTH Longitude \_\_\_\_\_ WEST  
 DEG. MIN. SEC. DEG. MIN. SEC.

**LOCATION SKETCH**

NORTH SOUTH WEST EAST

Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc. PLEASE BE ACCURATE & COMPLETE.

**ACTIVITY (∠)**

NEW WELL  
 MODIFICATION/REPAIR  
 \_\_\_\_\_ Deepen  
 \_\_\_\_\_ Other (Specify) \_\_\_\_\_

DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

**PLANNED USE(S)**

MONITORING

**WATER SUPPLY**

Domestic  
 Public  
 Irrigation  
 Industrial  
 "TEST WELL"  
 CATHODIC PROTECTION  
 OTHER (Specify) agricultural

DRILLING METHOD rotary FLUID bentonite

**WATER LEVEL & YIELD OF COMPLETED WELL**

DEPTH OF STATIC WATER LEVEL \_\_\_\_\_ (Ft.) & DATE MEASURED \_\_\_\_\_  
 ESTIMATED YIELD\* \_\_\_\_\_ (GPM) & TEST TYPE \_\_\_\_\_  
 TEST LENGTH \_\_\_\_\_ (Hrs.) TOTAL DRAWDOWN \_\_\_\_\_ (Ft.)  
 \* May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE-HOLE DIA. (Inches)	CASING(S)				INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	ANNULAR MATERIAL				
Ft.	to Ft.		TYPE (∠)	MATERIAL / GRADE						DEPTH FROM SURFACE	TYPE			
Ft.	to Ft.		BLANK	SCREEN	CON- DUCTOR	FILL PIPE			Ft.	to Ft.	CE- MENT (∠)	BEN- TONITE (∠)	FILL (∠)	FILTER PACK (TYPE/SIZE)
0	245	15	x				PVC	8		0	70	x		5 ok S&S
245	455	15	x				PVC	8	1/8x7/8 8 rows	70	240			x crushed gravel
										240	455			x naturally rounded gravel

**ATTACHMENTS (∠)**

Geologic Log  
 Well Construction Diagram  
 Geophysical Log(s)  
 Soil/Water Chemical Analyses  
 Other \_\_\_\_\_

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

**CERTIFICATION STATEMENT**

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Randall N. Wallis  
 (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

P.O. Box 1400 Barstow CA 92312  
 ADDRESS CITY STATE ZIP

Signed Randall N. Wallis DATE SIGNED \_\_\_\_\_  
 WELL-DRILLER/AUTHORIZED REPRESENTATIVE 515955 C-57 LICENSE NUMBER

## APPENDIX **J-2**

### **Power Consumption**

#### **Data**



**APPENDIX K**  
**Verification Report for**  
**Searles Valley Minerals**

## **Appendix K: Pumping Verification Report for Searles Valley Minerals**

The purpose of this Pumping Verification Report (Report) is to verify and certify to the extent possible, all groundwater production from Searles Valley Minerals for the years between 1937 and 2019, with particular emphasis on the Base Period for use in establishing Annual Pumping Allocations and determining eligibility for the Transient Pool. An analysis of the verification data, the methods of verification, and findings on the Producer's pumping are presented herein.

### **History**

Searles Valley Minerals (SVM) reports that it has extracted groundwater continuously from the Basin since 1930, when one of SVM's predecessor companies, Westend Chemical Company (WCC), began full-scale operation in 1926 and drilled its first well in the Basin near Windy Acres Ranch in 1930. SVM reports that its start date of groundwater extraction within the Basin may have occurred prior to 1930. In 1942, another predecessor company, American Potash & Chemical Corporation (APCC), acquired land near Bonewits Ranch, which contained an operational well that was drilled in 1912 (Well 22). Both predecessor companies came under the same ownership when Kerr-McGee Corporation acquired APCC in 1967 and WCC in 1974. An extended history of SVM's predecessor companies and associated ownership changes is included in Appendix K-1.

Groundwater extracted by SVM is used for industrial and municipal purposes. SVM owns and operates five (5) metered wells that produce Basin groundwater, which is transported to Searles Valley for use at production facilities for minerals recovery and production processes. Searles Domestic Water Company (SDWC), a wholly owned subsidiary of SVM, was established in 1943 and currently serves the municipal needs of approximately 800 households in the Trona area in Searles Valley. SVM and SDWC have an annual purchase agreement under which SVM supplies "surplus water" to SDWC in an amount not to exceed 200 million gallons (614 acre-feet) per year.



## Description of Facilities

There are currently eleven (11) inactive or destroyed wells (Well 22, Well 23, Well 34, WE1, Windy Acres Well, WE3, 4A1, 4A2, 5A1, 5B1, and 5H1) in the Basin that are or were under the ownership of SVM. According to SVM's response to the Questionnaire, Wells 5A1, 5H1, and 4A2 were destroyed shortly after being drilled for unknown reasons. Well 5B1 was discovered to be dry after being drilled, and there is no readily available information for Well 4A1. The Windy Acres Well became inactive due to poor water quality during pumping. SVM stated that additional research is needed to determine whether Wells 4A1, 4A2, 5A1, 5B1, and 5H1 have historically been in service. All other wells became inactive due to sanding, low flowrates, or replacement by other wells. Well construction details for the inactive wells are shown on Table K-1.

There are currently five (5) metered, active wells (IW30, IW35, IW36, WE2, and WE4) in the Basin under the ownership of SVM located on these properties:

- Well IW30
  - Kern County Assessor Parcel Number (APN) 352-095-08;
- Well IW35
  - APN 454-080-01;
- West IW36
  - APN 352-095-27;
- Well WE2
  - APN 478-020-15;
- Well WE4
  - APN 508-030-04

There are two pipeline systems that convey water from the Basin to Searles Valley: the Westend System and the Indian Wells System. Wells WE2 and WE4 are on the Westend System and have production capacities of 700 gallons per minute (gpm) and 1,500 gpm, respectively. Wells IW30, IW35, and IW36 are on the Indian Wells System and have production capacities of 430 gpm, 750 gpm, and 1,200 gpm, respectively.

## **Appendix K: Pumping Verification Report for Searles Valley Minerals**

According to the data reported by SVM, Well WE2 was drilled in 1940 to replace the Windy Acres Well (drilled in 1930). Well WE2 has a total depth of 375 feet, a static water level of 116 feet below ground surface (bgs) (measured in 1948), and is equipped with a submersible pump installed at 131 feet bgs. Well IW30 was drilled in 1951 to replace Well 22 (drilled in 1912). Well IW30 has a total depth 387 feet, a static water level of 180 feet bgs at the time it was drilled, and is equipped with a submersible pumped installed at 184 feet bgs. IW36 was drilled in 1990 to replace Well 34 (drilled in 1953). IW36 was drilled and deepened to a total depth of 1,145 feet, had a static water level of 249 feet bgs at the time it was deepened, and has a submersible pump installed at 410 feet bgs.. Well WE4 was drilled in 1965 to a total depth of 866 feet. Well WE4 had a static water level of 214 feet bgs at the time it was drilled, and is equipped with a submersible pump installed at 231 feet bgs. Well IW35 was drilled in 1989 to a total depth of 850 feet, had a static water level of 233 feet bgs at the time it was drilled, and has a submersible pump installed at 290 feet bgs. Well construction details for the active wells are provided in Table K-1.

### **Groundwater Production**

SVM's reported historical groundwater production dating back to 1931 is shown in Appendix K-2. From historical reports submitted with the Questionnaire response, SVM's production was estimated based on pumping capacity with all wells pumping continuously prior to 1942. SVM reported that SDWC has had meters on all customer service connections since 1944. In the response to the Questionnaire, SVM submitted records from The Indian Wells Valley Cooperative Groundwater Management Group (Cooperative Group) showing groundwater production for SVM from the years 1975 to 2016. SVM has referenced these records for their estimated groundwater production during these years.

### **Verification Data and Information**

All of the data described below were used in the verification of the groundwater production by SVM from the Basin.

### **Groundwater Production Questionnaire and Historical Production Reports**

SVM provided combined groundwater production numbers for its active wells from 1931 to 1974. The groundwater production reported in the response to the Questionnaire was obtained from various historical reports that have estimated production based on either pumping capacity with continuous pumping, or metered records. The production provided by SVM was reviewed and verified to be consistent with the historical reports. SVM has referenced the Cooperative Group's recorded groundwater production estimates for the years 1975 to 2016.

Annual groundwater production during the Base Period (from 2010 to 2014) as reported in the response to the Questionnaire, is shown on Table K-2. (The production was previously recorded by the Cooperative Group.)

### **Basis of Verification**

The available data discussed in the "**Verification Data and Information**" section was considered in the verification of groundwater production by SVM.

### **Records of Groundwater Production from the Authority and Cooperative Group**

SVM provided combined groundwater production for its active wells from 1931 to 1974. The groundwater production reported in the response to the Questionnaire was obtained from various historical reports that have estimated production based on either pumping capacity with continuous pumping, or metered records. The production provided by SVM was reviewed and verified to be consistent with the historical reports.

The Cooperative Group has presented groundwater production for SVM from the years 1975 to 2016, and SVM has referenced this production record as their estimated production during these years. SVM provided internal water production records that showed estimated production values for 2016 through 2019 based on average monthly

pumping rates. In 2016, the Cooperative Group presented an annual groundwater production of 2,377 AF, and SVM's internal water production records for 2016 indicate an estimated production of 2,374 AF. In the response to the Questionnaire, SVM referenced their internal records and reported an annual groundwater production of 2,708 AF for 2019, exactly matching the Authority's 2019 records.

### **Review of Methods and Verification and Conclusions**

In the response to the Questionnaire, SVM reported that production from the Basin began in 1930 at a well near Windy Acres Ranch. The existence of this well and its production operations have been documented in two (2) reports that were attached to SVM's response to the Questionnaire:

- *X-19 Indian Wells Valley Water*
  - Prepared by American Potash and Chemical Corporation Research and Development Department, February 1942
- *Bulletin No. 91-9: Data on Water Wells in Indian Wells Valley Area, Inyo, Kern, and San Bernardino Counties, California*
  - Prepared for State of California, Department of Water Resources
  - Prepared by United States Department of Interior Geological Survey

There are currently two pipeline systems that convey groundwater produced by SVM from the Basin to Searles Valley: the Westend System and the Indian Wells System. Extracted groundwater is used by SVM for industrial (minerals recovery and production processes) and municipal (households in communities near Trona, Searles Valley) purposes. SDWC has an annual purchase agreement with SVM under which SVM supplies "surplus water" to SDWC in an amount not to exceed 200 million gallons (614 acre-feet) per year. There was no reported use of groundwater for agricultural irrigation by SVM.

Reported groundwater production prior to 1975 was verified against the historical reports submitted with the response to the Questionnaire. Production values obtained

## Appendix K: Pumping Verification Report for Searles Valley Minerals

from various historical reports have estimated production based on either pumping capacity with continuous pumping, or metered records. The Cooperative Group has recorded groundwater production from 1975 through 2016 for SVM, and SVM has referenced these numbers as their estimated production during these years in the response to the Questionnaire. SVM also provided internal production records that estimated groundwater production for the years 2016 through 2019. Based on the estimates in SVM's internal production records, SVM reported a production of 2,374 AF for 2016, while the Cooperative Group's recorded production was 2,377 AF. Based on the estimates in SVM's internal production records, SVM reported a production of 2,708 AF for 2019, which is consistent with production recorded by the Authority in 2019.

Finally, in accordance with the Sustainable Groundwater Management Act (SGMA) and California water law, the period between January 2010 and December 2014 has been considered by the IWVGA to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment. Annual groundwater production reported in the response to the Questionnaire during the Base Period are shown in Table K-2. As reported in the response to the Questionnaire, SVM's lowest annual Base Period groundwater production of 2,458 AF occurred in 2011, as presented by the Cooperative Group.

**Table K-1**  
**Well Construction Information**

Well Name/ Number	Date Drilled	Well Depth (feet)	Casing Length (feet)	Static Water Level (ft, bgs)	Pumping Depth (ft, bgs)	Pump Type	Motor Horsepower	Manufacturer's Pump Rating (gpm)	Pump Test	Date of Pump Test	Service Status
IW30	1951	387	N/A	180	183.75	N/A	100	N/A	N/A	N/A	Active
IW35	1989	850	850	233	290	N/A	N/A	N/A	1500 gpm	1989/May	Active
IW36	1990	1145	982	249	410	N/A	N/A	N/A	2000 gpm	1990/Aug	Active
WE2 <sup>1</sup>	1940	375	278	116	131	N/A	N/A	N/A	N/A	N/A	Active
WE4	1965	866	555	214	231	N/A	N/A	N/A	N/A	N/A	Active
Well 22 <sup>2</sup>	1912	N/A	N/A	175	N/A	N/A	N/A	N/A	N/A	N/A	Inactive
Well 23	1942	300	300	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive
Well 34 (Pribus)	1953	402	370	153	193.5	N/A	100	N/A	N/A	N/A	Inactive
WE 1	1931	185	N/A	114	119	N/A	N/A	N/A	125 gpm	1979/Mar	Inactive
Windy Acres Well	1930	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive
WE3	1946	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive
4A1	1959	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive
5B1	1959	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive

**Notes:**

- Searles Valley Minerals Inc currently owns 5 active wells, extracted groundwater is not for agricultural purposes.

- All inactive wells stopped groundwater extraction prior 1991 due to various reasons, including poor WQ, new well replacement, sanding issues, or unknown.

<sup>1</sup> WE2 static water level and pumping depth were measured in March 1948.

<sup>2</sup> Well 22 static water level was measured in February 1947.

**Table K-2**

**Reported Annual Groundwater Production Between 2010 and 2014 (unit: acre-foot)**

<b>Year</b>	<b>Number of Wells</b>	<b>Annual Production - Questionnaire 1</b>	<b>Monthly Average</b>	<b>Annual Production - IWVGA</b>	<b>Monthly Average</b>	<b>Discrepancy %</b>	<b>Annual Production - Cooperative Group</b>	<b>Monthly Average</b>	<b>Discrepancy %</b>
2010	N/A	2,586.6	215.55	N/A	N/A	N/A	2,586.6	215.55	0.0%
2011	N/A	2,457.5	204.79	N/A	N/A	N/A	2,457.5	204.79	0.0%
2012	N/A	2,743.0	228.58	N/A	N/A	N/A	2,743.0	228.58	0.0%
2013	N/A	2,706.0	225.50	N/A	N/A	N/A	2,706.0	225.50	0.0%
2014	N/A	2,679.0	223.25	N/A	N/A	N/A	2,679.0	223.25	0.0%

**Notes:**

- Discrepancy % is calculated by using

$$Discrepancy \% = \left[ 1 - \frac{Reported\ Extraction\ (IWVGA\ or\ Cooperative\ Group)}{Reported\ Extraction\ (Questionnaire\ 1)} \right] \times 100\%$$

- SVM reported groundwater production of 2,708 AF in 2019. The IWVGA report has a record of 2,708 AF. The discrepancy is 0%.

# APPENDIX K-1

## **Timeline History of Searles Valley Minerals Inc.**



### **Timeline History of Searles Valley Minerals Inc.:**

**1873** – John Searles and three partners stake claims to 640 acres in Searles Valley and form the San Bernardino Borax Mining Company (SBBM).

**1895** – The Pacific Coast Borax Company (PCBC) buys SBBM.

**1908** – California Trona Company is formed and leases buildings and equipment from SBBM to mine 258 claims.

**1913** – California Trona Company becomes American Trona Corporation.

**1914** – The Trona Railway Company completes 31 miles of track from Trona to the Searles Station junction with the Southern Pacific Railroad.

**1914** – American Trona Corporation establishes the company-owned town of Trona, CA.

**1916** – PCBC and The Solvay Company form the Borosolvay Company.

**1916** – The Borosolvay Company forms the town of Borosolvay, CA south of Trona

**1918** – PCBC leases land to build the Westend Chemical Company.

**1926** – American Trona Corporation becomes American Potash & Chemical Corporation (APCC).

**1926** – Westend Chemical Company (WCC) begins full-scale operation.

**1930**—WCC drills its first well near Windy Acres Ranch in IWVGB and begins transporting water to Searles Valley via a 19-mile long drill steel pipe, supplying water for both industrial and municipal uses in Searles Valley.

**1931**—WCC drills its second well (Well 1) in IWVGB near Fox Ranch and extends its 19-mile long pipeline to Well 1.

**1940**—WCC drills its third well (Well 2) in IWVGB near its second well (Well 1). This well (Well 2) is still in use today.

**1942**—APCC acquires land near Bonewits Ranch containing an operational well that was drilled in 1912 and begins transporting potable water to Searles Valley via a pipeline through the China Lake gap area (Well 22).

**1942**—APCC drills a second well (Well 23) near its first well (Well 22).

**1946**—WCC drills its fourth well (Well 3) in the IWVGB.

**1950**—APCC drills Well 30 in the IWVGB, completes work in 1951.

**1953**—APCC drills Well 34 also known as Pribus Well in the IWVGB.

**1956** – Stauffer Chemical Company acquires Westend Chemical Company (WCC).

**1965**—Stauffer drills Well 4 in the IWVGB.

**1967** – Kerr-McGee Corporation acquires APCC.

**1974**—Kerr-McGee buys the Westend Chemical Company from Stauffer Chemical Company.

**1989**—Kerr-McGee drills Well 35 in the IWVGB.

**1990**—Kerr-McGee drills Well 36 in the IWVGB.

**1990** – D. George Harris and Associates acquires the Soda Products Division of the Kerr-McGee Chemical Corporation (both the Trona and Westend plants) and forms the North American Chemical Company.

**1998** – IMC Global, Incorporated acquires North American Chemical Company.

**2004** - Sun Capital acquires IMC Chemicals, Incorporated and renames the business Searles Valley Minerals, Incorporated.

**2008** - Nirma Ltd. acquires Searles Valley Minerals, Incorporated.

APPENDIX K-2  
**Reported Groundwater  
Production (Questionnaire)**

Year	WCC/Stauffer	APCC/Trona	Total Company	Reference/Notes
	AFY	AFY	AFY	
1930	unknown			Ritchie, 1942
1931-1939	At least 291		At least 291	Moyle, 1963
1940	565		565	Ritchie, 1942
1941	565		565	Ritchie, 1942
1942	565	161	726	Turnbull, 1952 , Ritchie, 1942
1943	565	649	1213	Turnbull, 1952
1944	565	651	1215	Turnbull, 1952
1945	565	628	1192	Turnbull, 1952
1946	565	626	1190	Turnbull, 1952
1947	565	674	1238	Turnbull, 1952
1948	unk	577	unk	Turnbull, 1952
1949	unk	537	unk	Turnbull, 1952
1950	unk	368	unk	Turnbull, 1952
1951	unk	346	unk	APCC Internal Production Report
1952	unk	345	unk	APCC Internal Production Report
1953	unk	375	unk	APCC Internal Production Report
1954	837	392	1230	Mulqueen 1979, APCC Internal Production Report
1955	unk	370	unk	APCC Internal Production Report
1956	unk	398	unk	Stauffer Chemical bought WCC
1957	unk	433	unk	APCC Internal Production Report
1958	1212	396	1609	Mulqueen 1979, APCC Internal Production Report
1959	1328	411	1740	Mulqueen 1979, APCC Internal Production Report
1960	1339	370	1710	Mulqueen 1979, APCC Internal Production Report
1961	1369	469	1839	Mulqueen 1979, APCC Internal Report
1962	1474	601	2076	Mulqueen 1979, APCC Internal Report
1963	1486	650	2137	Mulqueen 1979, APCC Internal Report
1964	1257	660	1918	Mulqueen 1979, APCC Internal Report
1965	1539	unk	unk	Mulqueen, 1979
1966	1677	786*	2464	Mulqueen 1979, APCC Internal Report
1967	1642	899	2543	Mulqueen 1979, APCC Internal Report
1968	1649	999	2649	Mulqueen 1979
1969	unk	1069*	unk	APCC internal prod rept
1970	1640	1028	2668	APCC Int. prod rept, Sonia, Bornemann ltr 1971
1971	unk	1178	unk	APCC internal prod rept
1972	unk	1117	unk	APCC internal prod rept
1973	unk	1210	unk	Mulqueen 1979
1974	1741	1119	2860	Mulqueen 1979 Kerr McGee buys Westend
1975			2781	IWVGA Spreadsheet
1976			2911	IWVGA Spreadsheet
1977			3315	IWVGA Spreadsheet
1978			3081	IWVGA Spreadsheet
1979			3081	IWVGA Spreadsheet
1980			2887	IWVGA Spreadsheet
1981			3065	IWVGA Spreadsheet
1982			2887	IWVGA Spreadsheet
1983			2476	IWVGA Spreadsheet
1984			2307	IWVGA Spreadsheet
1985			2397	IWVGA Spreadsheet
1986			2557	IWVGA Spreadsheet
1987			2560	IWVGA Spreadsheet
1988			2560	IWVGA Spreadsheet
1989			2320	IWVGA Spreadsheet
1990			2505	IWVGA Spreadsheet
1991			2406	IWVGA Spreadsheet
1992			2528	IWVGA Spreadsheet
1993			2607	IWVGA Spreadsheet
1994			2607	IWVGA Spreadsheet
1995			2710	IWVGA Spreadsheet
1996			2620	IWVGA Spreadsheet
1997			2522	IWVGA Spreadsheet

Year	WCC/Stauffer AFY	APCC/Trona AFY	Total Company AFY	Reference/Notes
1998			2527	IWVGA Spreadsheet
1999			2537	IWVGA Spreadsheet
2000			2701	IWVGA Spreadsheet
2001			2732	IWVGA Spreadsheet
2002			2564	IWVGA Spreadsheet
2003			2561	IWVGA Spreadsheet
2004			2470	IWVGA Spreadsheet
2005			2504	IWVGA Spreadsheet
2006			2591	IWVGA Spreadsheet
2007			2530	IWVGA Spreadsheet
2008			2521	IWVGA Spreadsheet
2009			2535	IWVGA Spreadsheet
2010			2587	IWVGA Spreadsheet
2011			2458	IWVGA Spreadsheet
2012			2743	IWVGA Spreadsheet
2013			2706	IWVGA Spreadsheet
2014			2679	IWVGA Spreadsheet
2015			2518	IWVGA Spreadsheet
2016			2377	IWVGA Spreadsheet
2017			2706	Internal Water Production Records
2018			2679	Internal Water Production Records
2019			2708	Internal Water Production Records

**Notes:**

- Prior to 1975, annual extraction is the sum of WCC and APCC due to separate ownership.

**APPENDIX L**  
**Verification Report for**  
**Sierra Shadows Ranch**

## Appendix L: Pumping Verification Report for Sierra Shadows Ranch

The purpose of this Pumping Verification Report (Report) is to verify and certify to the extent possible, all groundwater production from Sierra Shadows Ranch for the years between 1937 and 2019, with particular emphasis on the Base Period for use in establishing Annual Pumping Allocations and determining eligibility for the Transient Pool. An analysis of the verification data, the methods of verification, and findings on the Producer's pumping are presented herein.

Sierra Shadows Ranch's initial response to the Questionnaire, postmarked March 2, 2020, was submitted by Mr. John T. Conaway and was received by Authority staff on March 4, 2020. Historical pumping data provided in the initial response included only two items: (1) a copy of the Cooperative Group's recorded production data from 1975 to 2017, on which Sierra Shadows Ranch is not listed explicitly by name, and (2) a bar graphic showing the history of parcel acquisition by Sierra Shadows Ranch since its establishment in 1972. Based on the information contained in the initial response to the Questionnaire, a pumping verification for Sierra Shadows Ranch was not conducted, and a write-up on Sierra Shadows Ranch's response to the Questionnaire was included in the appendix for pumpers with insufficient information to verify pumping.

A letter from Brownstein Hyatt Farber Schreck, LLP on behalf of Mojave Pistachios, LLC, the Nugent Family Trust, and Sierra Shadows Ranch (collectively referred to as "Mojave" in the letter) was submitted to the Authority on May 29, 2020. The letter included historical pumping and crop data for Sierra Shadows Ranch but was not considered in this Report because it was not submitted in a reasonably timely manner and was not provided to Authority staff for the purpose of commenting on the draft report released on June 3, 2020.

After release of the draft Report for comments on June 3, 2020, Mr. John T. Conaway provided Authority staff with additional files of historical groundwater use by Sierra Shadows Ranch since establishment. The files largely overlapped with the data provided in the letter from Brownstein Hyatt Farber Schreck, LLP, but other data that was not included in the letter was also provided by Mr. Conaway. **Only the files provided directly by Mr. Conaway were considered during the preparation of this Report.**

## **History**

Sierra Shadows Ranch owns a total of 200 acres of land within the Basin boundaries and reports that groundwater extractions from the Basin began in 1972. In the response to the Questionnaire, Sierra Shadows Ranch reported owning and operating seven (7) active wells and one (1) inactive well. The lands owned by Sierra Shadows Ranch are mainly used for agricultural production. Ten (10) acres of land were used for apricot production for the period between 1972 and 1982. Agricultural production changed from apricots to pistachios in 1983, and 200 acres of land have been used for pistachio production since 1983.

## **Description of Facilities**

There are currently seven (7) active wells and one (1) inactive well located on Sierra Shadows Ranch's properties. The inactive well was active prior to 2000 but was made inactive due to maintenance issues. Sierra Shadows estimates the construction date for the inactive well to be sometime in the 1960s. Information on well construction, static water level, and pump information are not available due to a local fire that occurred at the well driller's facilities. Information on permits for all groundwater wells were not provided except for one (1) well located on parcel number 352-260-16 drilled under County Permit Number WP14551. Extracted groundwater is fed into a closed-loop, constant-pressure drip system for agricultural purposes. The Sierra Shadows Ranch parcel acquisition information (31 parcels) between 1971 and 2014 as provided in the response to the Questionnaire is shown on Appendix L-1.

## **Groundwater Production**

Groundwater production at Sierra Shadows Ranch began in 1972. In the response to the Questionnaire, Sierra Shadows Ranch attributed their current agricultural practices and groundwater production trends to three developmental individual phases. In the first developmental phase from 1972 to 1982, apricot trees were planted and Sierra Shadows

## **Appendix L: Pumping Verification Report for Sierra Shadows Ranch**

Ranch decided to transition to pistachio farming, ceasing all irrigation of the existing apricot trees. In the second developmental phase from 1983 to 2003, pistachios were interplanted within the same apricot fields and environmentally-friendly farming practices were researched and designed for. In the last developmental phase, an intergraded modular irrigation system was installed in the years 2010 to 2016.

The reported annual groundwater production values between 1972 and 2019 are provided on Table L-2. Sierra Shadows Ranch provided the combined groundwater production of the active wells in the response to the Questionnaire and reports total production is estimated from the number of trees and corresponding required drip emitters. Water usage information specific to the irrigation drips was not provided.

The Authority and The Indian Wells Valley Cooperative Groundwater Management Group (Cooperative Group) do not have historic reported groundwater production specific to Sierra Shadows Ranch; however, the Authority has groundwater production records from September 2018 to December 2019.

### **Verification Data and Information**

All of the data described below were utilized in the verification of the groundwater production by Sierra Shadows Ranch from the Basin.

#### **Groundwater Production Questionnaire**

Sierra Shadows Ranch provided the combined groundwater production of its active wells in the response to the Questionnaire, estimated from number of trees and drip emitters. Annual groundwater production during the Base Period (from 2010 to 2014) as reported in the response to the Questionnaire are shown on Table L-3. Due to the lack of available groundwater production records from the Cooperative Group, a comparison of groundwater production as reported in the response to the Questionnaire and as documented by the Cooperative Group was not performed in Table L-3. The Authority



does not have production records prior to September 2018; therefore, a comparison between the reported production in the Questionnaire and the data documented by the Authority was not performed either.

### **Basis of Verification**

The available data discussed in the “**Verification Data and Information**” section was considered in the verification of groundwater production by Sierra Shadows Ranch.

### **Records of Groundwater Production from the Authority and Cooperative Group**

The Authority does not have historic reported groundwater production specific to Sierra Shadows Ranch, except for the Authority’s monthly groundwater production records between September 2018 and December 2019. In their response to the Questionnaire, Sierra Shadows Ranch reported an annual groundwater production of 501.14 AF for 2019, whereas the Authority has a record of 457.32 AF. It should be noted that the Authority’s records for calendar year 2019 show Sierra Shadows Ranch producing 0 AF of water for the months January through April and October through December.

### **Review of Methods and Verification and Conclusions**

Sierra Shadows Ranch owns a total of 200 acres of land within the Basin boundaries and uses extracted groundwater for agricultural purposes (irrigation of apricot trees and pistachio orchards). Ten (10) acres of land were used for apricot production for the period between 1972 and 1982. Agricultural production changed from apricots to pistachios in 1983, and 200 acres of land have been used for pistachio production since 1983.

Reported groundwater production in the response to the Questionnaire covers the period between 1972 and 2019. The Indian Wells Valley Cooperative Groundwater

## Appendix L: Pumping Verification Report for Sierra Shadows Ranch

Management Group (Cooperative Group) does not have historic reported groundwater production specific to Sierra Shadows Ranch and the Authority has groundwater production records from September 2018 to December 2019. Sierra Shadows Ranch reported an annual groundwater production of 501.14 AF for 2019, whereas the Authority has a record of 457.32 AF.

Finally, in accordance with the Sustainable Groundwater Management Act (SGMA) and California water law, the period between January 2010 and December 2014 has been considered by the IWVGA to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment. Annual groundwater production reported in the response to the Questionnaire during the Base Period are shown in Table L-3. Sierra Shadows Ranch's lowest annual Base Period groundwater production is about 241.68 acre-feet, estimated from number of trees and drip emitters.

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**Table L-1  
Well Construction Information**

Well Name/ Number*	Date Drilled	Well Depth	Casing Length	Static Water Level (ft, bgs)	Pumping Depth (ft, bgs)	Pump Type	Motor Horsepower	Manufacturer's Pump Rating (gpm)	Pump Test	Date of Pump Test	Service Status
Well 1	N/A	N/A	N/A	N/A	N/A	N/A	200	N/A	N/A	N/A	Active
Well 2	N/A	N/A	N/A	N/A	N/A	N/A	50	N/A	N/A	N/A	Active
Well 3	N/A	N/A	N/A	N/A	N/A	N/A	15	N/A	N/A	N/A	Active
Well 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
Well 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
Well 6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
Well 7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
Well 8	1960's	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive

**Notes:**

- Well names and ID's were not provided in the response to the Questionnaire.
- Sierra Shadows Ranch stated that a well installed in the 1960's was made inactive in 2000 due to the well requiring maintenance.
- No other well construction details were provided.

**Table L-2**  
**Data Source Used For Groundwater Production Estimation**

<b>Year</b>	<b>Crop</b>	<b>Irrigated Acreage</b>	<b>Groundwater Production (acre-foot)</b>	<b>Estimate Method</b>
1972	Apricot	10	5	Number of Trees and Drip Emitters
1973	Apricot	10	N/A	Number of Trees and Drip Emitters
1974	Apricot	10	10	Number of Trees and Drip Emitters
1975	Apricot	10	N/A	Number of Trees and Drip Emitters
1976	Apricot	10	24	Number of Trees and Drip Emitters
1977	Apricot	10	N/A	Number of Trees and Drip Emitters
1978	Apricot	10	24	Number of Trees and Drip Emitters
1979	Apricot	10	N/A	Number of Trees and Drip Emitters
1980	Apricot	10	24	Number of Trees and Drip Emitters
1981	Apricot	10	N/A	Number of Trees and Drip Emitters
1982	Apricot	10	24	Number of Trees and Drip Emitters
1983	Pistachio	200	N/A	Number of Trees and Drip Emitters
1984	Pistachio	200	30	Number of Trees and Drip Emitters
1985	Pistachio	200	55	Number of Trees and Drip Emitters
1986	Pistachio	200	76	Number of Trees and Drip Emitters
1987	Pistachio	200	76	Number of Trees and Drip Emitters
1988	Pistachio	200	161.68	Number of Trees and Drip Emitters
1989	Pistachio	200	161.68	Number of Trees and Drip Emitters
1990	Pistachio	200	161.68	Number of Trees and Drip Emitters
1991	Pistachio	200	161.68	Number of Trees and Drip Emitters
1992	Pistachio	200	161.68	Number of Trees and Drip Emitters
1993	Pistachio	200	161.68	Number of Trees and Drip Emitters
1994	Pistachio	200	161.68	Number of Trees and Drip Emitters
1995	Pistachio	200	161.68	Number of Trees and Drip Emitters
1996	Pistachio	200	161.68	Number of Trees and Drip Emitters
1997	Pistachio	200	161.68	Number of Trees and Drip Emitters
1998	Pistachio	200	161.68	Number of Trees and Drip Emitters
1999	Pistachio	200	161.68	Number of Trees and Drip Emitters
2000	Pistachio	200	161.68	Number of Trees and Drip Emitters
2001	Pistachio	200	201.68	Number of Trees and Drip Emitters
2002	Pistachio	200	201.68	Number of Trees and Drip Emitters
2003	Pistachio	200	201.68	Number of Trees and Drip Emitters
2004	Pistachio	200	241.68	Number of Trees and Drip Emitters
2005	Pistachio	200	241.68	Number of Trees and Drip Emitters
2006	Pistachio	200	241.68	Number of Trees and Drip Emitters
2007	Pistachio	200	241.68	Number of Trees and Drip Emitters

**Table L-2  
Data Source Used For Groundwater Production Estimation**

<b>Year</b>	<b>Crop</b>	<b>Irrigated Acreage</b>	<b>Groundwater Production (acre-foot)</b>	<b>Estimate Method</b>
2008	Pistachio	200	241.68	Number of Trees and Drip Emitters
2009	Pistachio	200	241.68	Number of Trees and Drip Emitters
2010	Pistachio	200	241.68	Number of Trees and Drip Emitters
2011	Pistachio	200	241.68	Number of Trees and Drip Emitters
2012	Pistachio	200	241.68	Number of Trees and Drip Emitters
2013	Pistachio	200	288.00	Number of Trees and Drip Emitters
2014	Pistachio	200	299.14	Number of Trees and Drip Emitters
2015	Pistachio	200	370.14	Number of Trees and Drip Emitters
2016	Pistachio	200	390.14	Number of Trees and Drip Emitters
2017	Pistachio	200	433.14	Number of Trees and Drip Emitters
2018	Pistachio	200	461.14	Number of Trees and Drip Emitters
2019	Pistachio	200	501.14	Number of Trees and Drip Emitters

Table L-3

Reported Annual Groundwater Production Between 2010 and 2014 (unit: acre-foot)

Year	Number of Wells	Annual Production - Questionnaire 1	Monthly Average	Annual Production - IWVGA	Monthly Average	Discrepancy %	Annual Production - Cooperative Group	Monthly Average	Discrepancy %
2010	7	241.68	20.1	N/A	N/A	N/A	N/A	N/A	N/A
2011	7	241.68	20.1	N/A	N/A	N/A	N/A	N/A	N/A
2012	7	241.68	20.1	N/A	N/A	N/A	N/A	N/A	N/A
2013	7	288.00	24.0	N/A	N/A	N/A	N/A	N/A	N/A
2014	7	299.14	24.9	N/A	N/A	N/A	N/A	N/A	N/A

**Notes:**

- Discrepancy % is calculated by using

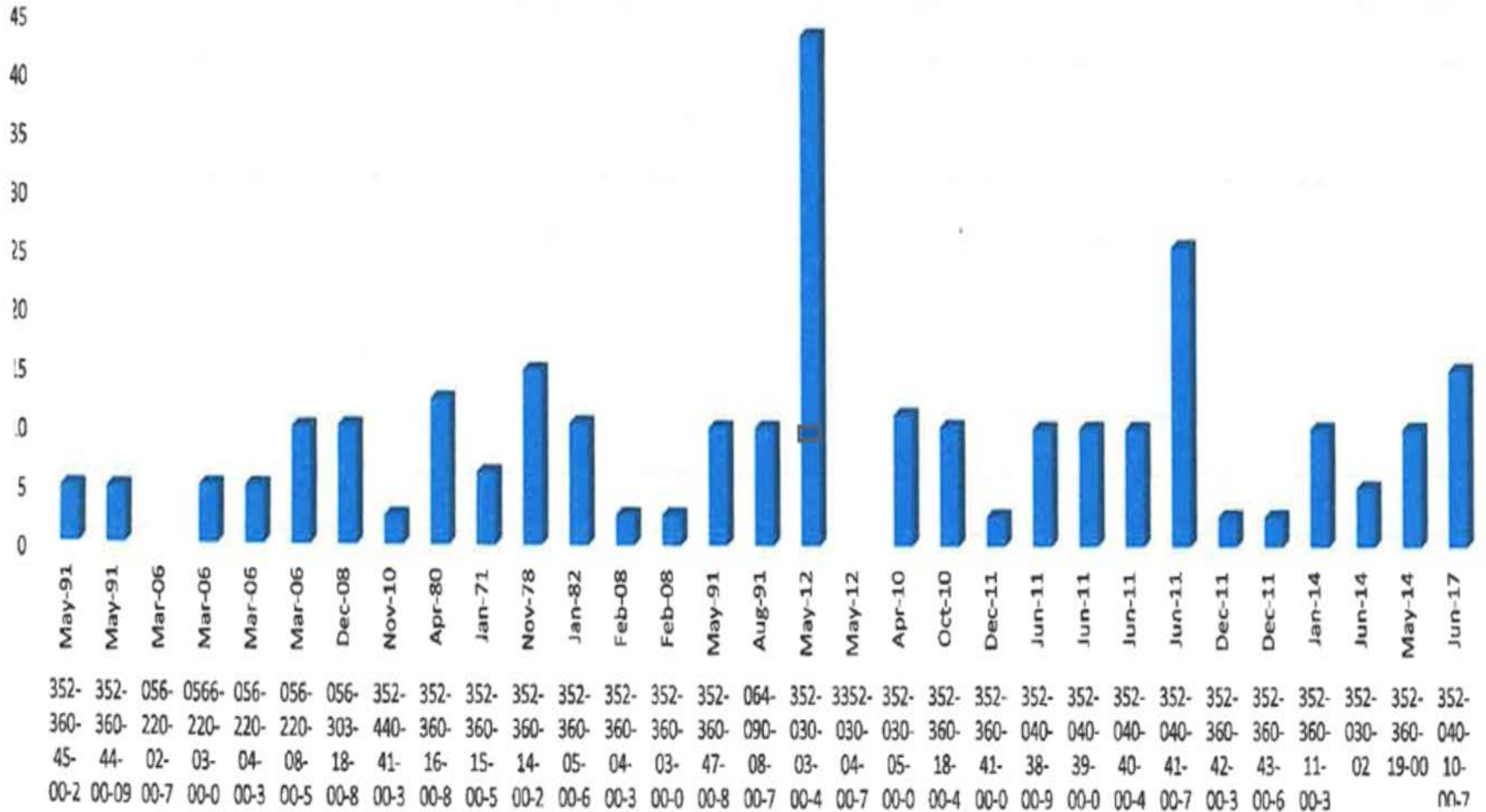
$$Discrepancy \% = \left[ 1 - \frac{Reported\ Extraction\ (IWVGA\ or\ Cooperative\ Group)}{Reported\ Extraction\ (Questionnaire\ 1)} \right] \times 100\%$$

- Sierra Shadows Ranch reported groundwater production of 501.14 AF in 2019. The IWVGA report has a record of 457.32 AF.

## **APPENDIX L-1**

### **Fifty-Year Period of Sierra Shadows Ranch Parcel Acquisition and Assessor Parcel Numbers**

## Sierra Shadows Ranch Parcel Acquisition (Acres) Fifty-Year Period





**APPENDIX M**  
**Verification Report for**  
**Simmons Farms**

## **Appendix M: Pumping Verification Report for Simmons Farms**

The purpose of this Pumping Verification Report (Report) is to verify and certify to the extent possible, all groundwater production from Simmons Farms for the years between 1937 and 2019, with particular emphasis on the Base Period for use in establishing Annual Pumping Allocations and determining eligibility for the Transient Pool. An analysis of the verification data, the methods of verification, and findings on the Producer's pumping are presented herein.

### **History**

Simmons Farms owns a total of 168 acres of land within the Basin boundaries. One hundred thirty-three (133) acres of land use extracted groundwater for agricultural purposes, and thirty five (35) acres of land use extracted groundwater for non-agricultural purposes. Simmons Farms reports that its property was purchased in the summer of 2010. The property included two wells that were drilled in 1960 by the previous owner but are still currently used by Simmons Farm. Simmons Farms' groundwater extractions from the Basin began in summer of 2010, though pumping for agricultural irrigation did not begin until the larger agricultural well was drilled in 2012. In the response to the Questionnaire, Simmons Farms reported owning and operating a total of three (3) active wells. Extracted groundwater has been reportedly used for domestic, landscaping, and agricultural (irrigation of alfalfa and grain hay) purposes. Alfalfa has been grown and irrigated from 2012 to 2019, and grain hay was grown and irrigated from 2012 through 2017.

### **Description of Facilities**

There are currently three (3) active wells and no inactive wells located on Simmons Farms' properties. The Small Ag Well and Domestic well were drilled in early 1960, and the Large Ag Well was drilled in 2012 (see Table M-1). The exact drilling dates of the Domestic Well and Small Ag Well were not provided, and no groundwater extraction records for these two wells were provided in the response to the Questionnaire. The Large Ag Well has a flowmeter installed, though neither the Domestic Well nor the Small Ag

Well have flowmeters installed. No additional information was provided regarding well construction, water levels, or pumps. Extracted groundwater is either fed into wheel lines or a center pivot irrigation system for agricultural purposes.

### **Groundwater Production**

Groundwater production at Simmons Farms began in summer of 2010, so there are no historical production records prior to this. The Authority does not have historic reported groundwater production specific to Simmons Farms, except for the Authority's monthly groundwater production records between September 2018 and December 2019. The Indian Wells Valley Cooperative Groundwater Management Group (Cooperative Group) has recorded groundwater production estimates for Simmons Farms from the years 2013 to 2016.

Simmons Farms provided the combined groundwater production of the three (3) active wells in the response to the Questionnaire and reports that total production was estimated from the installed meter on the Large Ag Well. It is unclear how annual production from the Small Ag Well and Domestic Well factor in to the total production estimate. A methodology for annual groundwater production estimates for 2010 and 2011 was not provided. The reported annual groundwater production values between 2010 and 2019 are provided on Table M-2.

### **Verification Data and Information**

All of the data described below were utilized in the verification of the groundwater production by Simmons Farms from the Basin.

#### **Groundwater Production Questionnaire**

Simmons Farms provided the combined groundwater production of its active wells in the response to the Questionnaire, estimated from the installed meter on the Large Ag Well. Annual groundwater production during the Base Period (from 2010 to 2014) as

reported in the response to the Questionnaire are shown on Table M-3. Due to the lack of available groundwater production records from the Cooperative Group from 2010-2012, a comparison of groundwater production as reported in the response to the Questionnaire and as documented by the Cooperative Group was not performed in Table M-3 for 2010-2012. The Authority does not have production records prior to September 2018; therefore, a comparison between the reported production in the Questionnaire and the data documented by the Authority was not performed either.

### **Basis of Verification**

The available data discussed in the “**Verification Data and Information**” section was considered in the verification of groundwater production by Simmons Farms.

### **Records of Groundwater Production from the Authority and Cooperative Group**

The Authority does not have historic reported groundwater production specific to Simmons Farms, except for the Authority’s monthly groundwater production records between September 2018 and December 2019. The Cooperative Group has recorded groundwater production estimates for Simmons Farms from the years 2013 to 2016. As reported in the response to the Questionnaire, all annual groundwater production is identical to the values reported by the Cooperative Group for the years 2013 through 2016. Annual groundwater production during 2019 was 471 AFY, as reported in the response to the Questionnaire. Groundwater production data during 2019 as recorded by the Authority was 471 AF. Due to the lack of other available production data for Simmons Farm, the years 2010, 2011, 2012, 2017, and 2018 were unable to be verified.

### **Review of Methods and Verification and Conclusions**

Simmons Farms owns a total of 168 acres of land within the Basin boundaries. One hundred thirty-three (133) acres of land use extracted groundwater for agricultural

## Appendix M: Pumping Verification Report for Simmons Farms

purposes, and thirty five (35) acres of land use extracted groundwater for non-agricultural purposes. Extracted groundwater has been reportedly used for domestic and landscaping purposes since 2010, and for agricultural purposes (irrigation of alfalfa and grain hay) since 2012. Alfalfa has been grown and irrigated from 2012 to 2019, and grain hay was grown and irrigated from 2012 through 2017.

Reported groundwater production in the response to the Questionnaire covers the period between summer 2010 and 2019. The Cooperative Group reported groundwater production estimates for the years 2013 through 2016, and production was reported for 2019 to the Authority. Based on the respective 2013 through 2016 and 2019 records, Simmons Farm's reported groundwater production was identical (see Table M-3).

Finally, in accordance with the Sustainable Groundwater Management Act (SGMA) and California water law, the period between January 2010 and December 2014 has been considered by the IWVGA to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment. Annual groundwater production reported in the response to the Questionnaire during the Base Period are shown in Table M-3. As reported in the response to the Questionnaire, Simmons Farm did produce groundwater continuously during the entirety of the Base Period (i.e. domestic and landscaping pumping began during summer 2010, though pumping for agricultural irrigation did not begin until 2012); therefore, Simmons Farms' lowest annual Base Period groundwater production is 56 acre-feet in 2010.

**Table M-1  
Well Construction Information**

Well Name/ Number	Date Drilled	Well Depth	Casing Length	Static Water Level (ft, bgs)	Pumping Depth (ft, bgs)	Pump Type	Motor Horsepower	Manufacturer's Pump Rating (gpm)	Pump Test	Date of Pump Test	Service Status
Domestic Well	Early 1960	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active
Small Ag Well	Early 1960	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive
Large Ag Well	2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive

**Notes:**

- Simmons Farms has three active wells. Groundwater extraction for Simmons Farms usage started in 2010.
- Simmons Farm reported three wells serving four legal parcels with no additional details.
- The Domestic Well and the Small Ag Well wer drilled in early 1960, but there were no extraction records to confirm when production started.

**Table M-2**  
**Data Source Used For Groundwater Production Estimation**

<b>Year</b>	<b>Groundwater Production (acre-foot)</b>	<b>Estimate Method</b>	<b>Remark</b>
2010	56	N/A	
2011	58	N/A	
2012	918	Flowmeter	Flowmeter installed on Large Ag Well
2013	918	Flowmeter	Flowmeter installed on Large Ag Well
2014	1087	Flowmeter	Flowmeter installed on Large Ag Well
2015	1003	Flowmeter	Flowmeter installed on Large Ag Well
2016	918	Flowmeter	Flowmeter installed on Large Ag Well
2017	625	Flowmeter	Flowmeter installed on Large Ag Well
2018	389	Flowmeter	Flowmeter installed on Large Ag Well
2019	471	Flowmeter	Flowmeter installed on Large Ag Well

**Table M-3**

**Reported Annual Groundwater Production Between 2010 and 2014 (unit: acre-foot)**

Year	Number of Wells	Annual Production - Questionnaire 1	Monthly Average	Annual Production - IWVGA	Monthly Average	Discrepancy %	Annual Production - Cooperative Group	Monthly Average	Discrepancy %
2010	2	56	4.7	N/A	N/A	N/A	N/A	N/A	N/A
2011	2	58	4.8	N/A	N/A	N/A	N/A	N/A	N/A
2012	3	918	76.5	N/A	N/A	N/A	N/A	N/A	N/A
2013	3	918	76.5	N/A	N/A	N/A	918	76.5	0.0%
2014	3	1087	90.6	N/A	N/A	N/A	1087	90.6	0.0%

**Notes:**

- Discrepancy % is calculated by using

$$Discrepancy \% = \left[ 1 - \frac{Reported\ Extraction\ (IWVGA\ or\ Cooperative\ Group)}{Reported\ Extraction\ (Questionnaire\ 1)} \right] \times 100\%$$

- Simmons reported groundwater production of 471 AF in 2019. The IWVGA also has a record of 471 AF in 2019.



**APPENDIX N**  
**Verification Report for**  
**Terese Farms**

## **Appendix N: Pumping Verification Report for Terese Farms**

The purpose of this Pumping Verification Report (Report) is to verify and certify to the extent possible, all groundwater production from Terese Farms for the years between 1937 and 2019, with particular emphasis on the Base Period for use in establishing Annual Pumping Allocations and determining eligibility for the Transient Pool. An analysis of the verification data, the methods of verification, and findings on the Producer's pumping are presented herein.

### **History**

Terese Farms owns 80 acres utilizing extracted groundwater for agricultural purposes and 110 acres for non-agricultural purposes for a total of 190 acres within the Basin boundaries. Terese Farms claims groundwater production began in 1984. In the response to the Questionnaire, Terese Farms reported owning and operating five (5) active wells, but only provided static water level information, construction details, and well names for four (4) wells. Extracted groundwater has been reportedly used for domestic and agricultural (irrigation of pistachio orchards) purposes, though the quantity of extracted groundwater for domestic purposes was not specified in the response to the Questionnaire.

### **Description of Facilities**

There are currently five (5) active wells and no inactive wells located within Terese Farms' property. In the response to the Questionnaire, Terese Farms reported owning and operating five (5) active wells, but only provided information for four (4) wells. According to the well construction data provided by Terese Farms, the North Well was drilled in 1982 with a total depth of 500 feet, a static water level of 390 feet below ground surface (bgs), and a submersible pump installed at 450 feet bgs. The East Well was drilled in 1998 with a total depth of 600 feet, a static water level of 420 feet bgs, and a submersible pump installed at 500 feet bgs. The South Well was drilled in 2015 with a total depth of 622 feet and a static water level of 431 feet. The Bow Well was drilled in 2009 with a total depth of 401 feet and a static water level of 229 feet. Information for the

fifth well was not provided. General information provided by Terese Farms on well construction, water level, well pumps, and service status of Terese Farms wells is provided in Table N-1.

### **Groundwater Production**

Historical groundwater production based on metered records are not available because flow meters are not installed on the Terese Farms wells. The Indian Wells Valley Cooperative Groundwater Management Group (Cooperative Group) and the Authority do not have historic reported groundwater production specific to Terese Farms, except for the Authority's monthly groundwater production records between December 2018 and December 2019. Terese Farms provided the estimated combined groundwater production of the active wells in the response to the Questionnaire. Estimates of production were determined from the amount of acreage irrigated and from pistachio water use rates from a referenced report prepared by the University of California Davis. Details of the production estimates are discussed in the following sections. The annual groundwater production estimates between 1984 and 2019 are provided on Table N-2.

### **Verification Data and Information**

All of the data described below were utilized in the verification of the groundwater production by Terese Farms from the Basin.

#### **Groundwater Production Questionnaire**

Terese Farms provided the combined groundwater production of the active wells between 1984 and 2019. Groundwater production for the period between 1984 and 2019 was estimated based on the irrigated acreage and water use rates of pistachio trees. Terese Farms' estimation of water usage per acreage for pistachios referenced a study done by the University of California, Davis (Beede et al., 2008). It is unclear whether Terese Farms has used or currently uses the irrigation methods mentioned in the study.

## **Appendix N: Pumping Verification Report for Terese Farms**

Annual groundwater production during the Base Period (from 2010 to 2014) as reported in the Questionnaire, are shown on Table N-3. Due to the lack of available groundwater production records from the Cooperative Group, a comparison of groundwater production as reported in the Questionnaire and as documented by the Cooperative Group was not performed in Table N-3. The Authority does not have production records prior to December 2018; therefore, a comparison between the reported production in the Questionnaire and the data documented by the Authority was not performed either.

### **Power Consumption Data**

Terese Farms submitted electric power consumption data from the Southern California Edison Company (Edison) in their response to the Questionnaire. The data includes monthly power usage (in kilowatt-hour, kWh) for the years 2009 through 2018. Because pump test data was not available and no pumping rates were provided, groundwater production is not able to be estimated. It should be noted that the power consumption data submitted with the response to the Questionnaire may include power consumption for agricultural pumping, domestic, and other uses.

### **Basis of Verification**

The available data discussed in the “**Verification Data and Information**” section was considered in the verification of groundwater production by Terese Farms.

### **Records of Groundwater Production from the Authority and Cooperative Group**

Records of groundwater production from the Authority and the Cooperative Group were not available for this property except for monthly groundwater production reports submitted to the Authority between December 2018 and December 2019. As reported in

the response to the Questionnaire, Terese Farms' annual groundwater production during 2019 was 320 AF; groundwater production data reported by the Authority in 2019 was 322 AF. The discrepancy is approximately 0.63%.

### **Power Consumption Data**

Monthly electric power consumption data from Edison for Terese Farms was submitted with the response to the Questionnaire. Summarized annual power consumption data can be found in Appendix N-1. Assuming that the power consumption data in Appendix N-1 is solely for agricultural irrigation, it can be assumed that a positive correlation should exist between power usage and groundwater production amount; larger power consumption should result in increased amounts of production. From the Edison data and reported production values provided by Terese Farms, there seems to be no clear relationship between power consumption and groundwater extraction. It should be noted that power consumption shown in Appendix N-1 was only provided for the period between 2009 and 2018, so the analysis described above only applies to the period between 2009 and 2018.

### **Review of Methods and Verification and Conclusions**

Terese Farms owns 80 acres utilizing extracted groundwater and 110 acres for non-agricultural purposes for a total of 190 acres within Basin boundaries. Extracted groundwater has been reportedly used for domestic and agricultural (irrigation of pistachio orchards) purposes, though the quantity of extracted groundwater for domestic purposes were not specified in the responses of the Questionnaire.

Although the reported groundwater production in the response to the Questionnaire covers the period between 1984 and 2019, verifications of groundwater production between data collected from the Cooperative Group and the response to the Questionnaire were not performed because the Cooperative Group has no production records for this property. Groundwater production by Terese Farms was reported in the response to the Questionnaire for 2019, and the reported 2019 production in the response

## Appendix N: Pumping Verification Report for Terese Farms

to the Questionnaire is approximately equal to the 2019 production reported to the Authority (see Table N-2).

The annual groundwater production reported in the response to the Questionnaire between 1984 and 2019 was estimated based on the acreage of the pistachio orchard and approximate water requirements for pistachios. The method to estimate groundwater production based on acreage and water requirements is generally subject to uncertainty due to unknown factors such as irrigation schedule and irrigation management. Reported power consumption data was used view potential relationships between electricity use and groundwater production, but none were found (see Appendix N-1).

Finally, in accordance with the Sustainable Groundwater Management Act (SGMA) and California water law, the period between January 2010 and December 2014 has been considered by the IWVGA to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment. Annual groundwater production reported in the response to the Questionnaire during the Base Period are shown in Table N-3. As reported in the response to the Questionnaire, Terese Farm's lowest annual Base Period groundwater production of 260 acre-feet (AF) occurred in 2010, estimated using approximate water requirements and acreage.

**Table N-1  
Well Construction Information**

Well Name/ Number	Date Drilled	Well Depth (feet)	Casing Length (feet)	Static Water Level (ft, bgs)	Pumping Depth (ft, bgs)	Pump Type	Motor Horsepower	Manufacturer's Pump Rating (gpm)	Pump Test	Date of Pump Test	Service Status
North	1982	500	N/A	390	450	N/A	N/A	N/A	N/A	N/A	Active
East	1998	600	N/A	420	500	N/A	N/A	N/A	N/A	N/A	Active
South	2015	622	N/A	431	N/A	N/A	N/A	N/A	N/A	N/A	Active
Bow	2009	401	N/A	229	N/A	N/A	N/A	N/A	N/A	N/A	Active
Well 5*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active

**Notes:**

- It is stated in the Questionnaire response that there are 5 active groundwater wells serving the property.
- Photos of the South and Bow wells were included as a Questionnaire attachment and indicated the drill date.
- \* Information for 4 of the 5 wells was provided. The remaining well was not given a well name.

**Table N-2  
Data Source Used For Groundwater Production Estimation**

Year	Crop	Questionnaire				
		Irrigated Acreage (acres)	First Planting Groundwater Use (ft/ac)	Second Planting Groundwater Use (ft/ac)	Third Planting Groundwater Use (ft/ac)	Estimated Groundwater Production (AFY)
1937 to 1983	N/A	N/A	N/A	N/A	N/A	N/A
1984	Pistachios	20.0	1.5	--	--	30.0
1985	Pistachios	20.0	2.0	--	--	40.0
1986	Pistachios	20.0	2.3	--	--	46.0
1987	Pistachios	20.0	3.1	--	--	62.0
1988	Pistachios	20.0	3.5	--	--	70.0
1989	Pistachios	20.0	3.9	--	--	78.0
1990	Pistachios	20.0	4.0	--	--	80.0
1991	Pistachios	20.0	4.0	--	--	80.0
1992	Pistachios	20.0	4.0	--	--	80.0
1993	Pistachios	20.0	4.0	--	--	80.0
1994	Pistachios	20.0	4.0	--	--	80.0
1995	Pistachios	20.0	4.0	--	--	80.0
1996	Pistachios	20.0	4.0	--	--	80.0
1997	Pistachios	20.0	4.0	--	--	80.0
1998	Pistachios	20.0	4.0	--	--	80.0
1999	Pistachios	50.0	4.0	1.5	--	125.0
2000	Pistachios	50.0	4.0	2.0	--	140.0
2001	Pistachios	50.0	4.0	2.3	--	149.0
2002	Pistachios	50.0	4.0	3.1	--	173.0
2003	Pistachios	50.0	4.0	3.5	--	185.0
2004	Pistachios	50.0	4.0	3.9	--	197.0
2005	Pistachios	50.0	4.0	4.0	--	200.0
2006	Pistachios	50.0	4.0	4.0	--	200.0
2007	Pistachios	50.0	4.0	4.0	--	200.0
2008	Pistachios	50.0	4.0	4.0	--	200.0
2009	Pistachios	80.0	4.0	4.0	1.5	245.0
2010	Pistachios	80.0	4.0	4.0	2.0	260.0
2011	Pistachios	80.0	4.0	4.0	2.3	269.0
2012	Pistachios	80.0	4.0	4.0	3.1	293.0
2013	Pistachios	80.0	4.0	4.0	3.5	305.0
2014	Pistachios	80.0	4.0	4.0	3.9	317.0
2015	Pistachios	80.0	4.0	4.0	4.0	320.0
2016	Pistachios	80.0	4.0	4.0	4.0	320.0
2017	Pistachios	80.0	4.0	4.0	4.0	320.0
2018	Pistachios	80.0	4.0	4.0	4.0	320.0
2019	Pistachios	80.0	4.0	4.0	4.0	320.0

**Notes:**

- Estimation Method: COST AND RETURNS TO PRODUCE PISTACHIOS; Robert H. Beede, Craig E. Kallsen, Mark W. Freeman, Brent A. Holtz, UC Davis; Pistachio Irrigation, Determining Water Needs and Managing Drought; David Doll UCCE Merced County.



**Table N-3**

**Reported Annual Groundwater Production Between 2010 and 2014 (unit: acre-foot)**

Year	Number of Wells	Annual Production - Questionnaire 1	Monthly Average	Annual Production - IWVGA	Monthly Average	Discrepancy %	Annual Production - Cooperative Group	Monthly Average	Discrepancy %
2010	5	260	21.7	N/A	N/A	N/A	N/A	N/A	N/A
2011	5	269	22.4	N/A	N/A	N/A	N/A	N/A	N/A
2012	5	293	24.4	N/A	N/A	N/A	N/A	N/A	N/A
2013	5	305	25.4	N/A	N/A	N/A	N/A	N/A	N/A
2014	5	317	26.4	N/A	N/A	N/A	N/A	N/A	N/A

**Notes:**

- Discrepancy % is calculated by using

$$Discrepancy \% = \left[ 1 - \frac{Reported\ Extraction\ (IWVGA\ or\ Cooperative\ Group)}{Reported\ Extraction\ (Questionnaire\ 1)} \right] \times 100\%$$

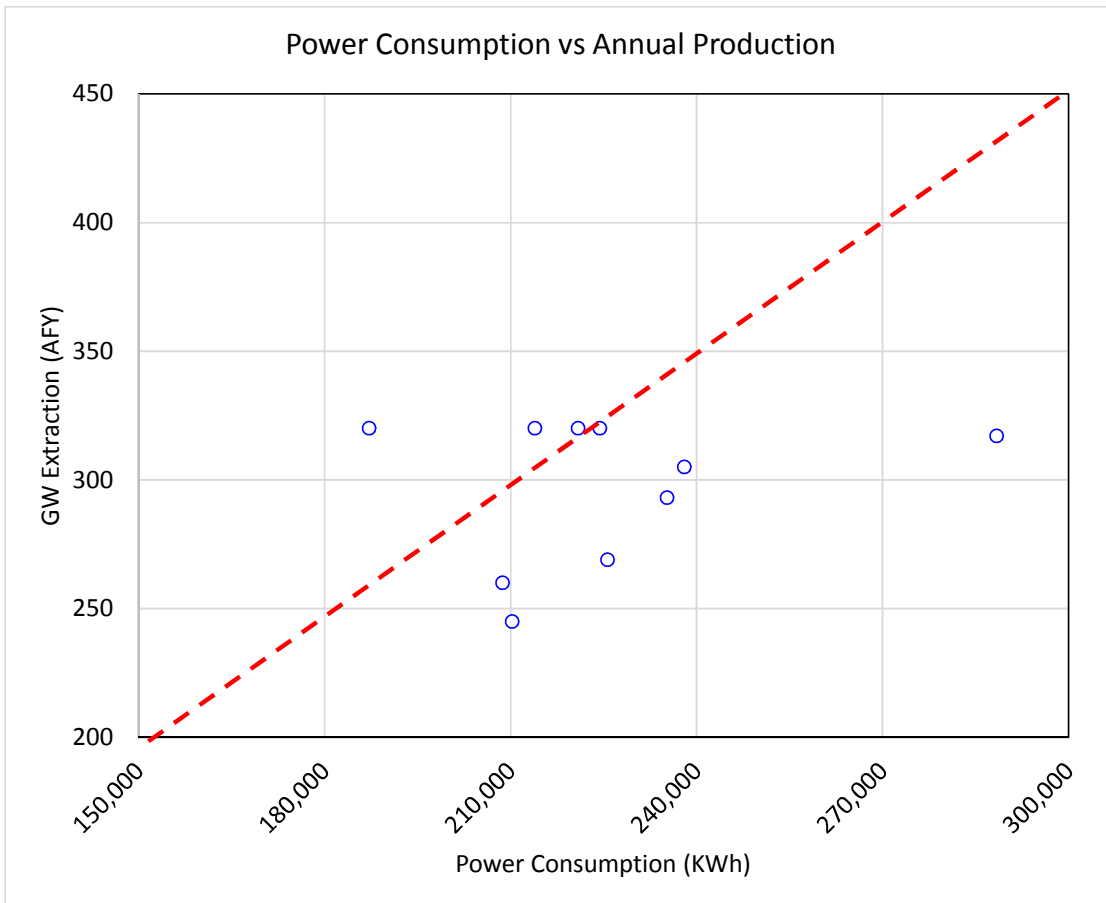
- Terese reported groundwater production of 320 AF in 2019. The IWVGA report has a record of 322 AF in 2019. The discrepancy is -0.63%.

# APPENDIX N-1

## **Annual Power**

## **Consumption Data**

Year	Total Usage (KWh)	Annual GW Extraction (AFY)
2009	210,265	245
2010	208,724	260
2011	225,639	269
2012	235,246	293
2013	238,018	305
2014	288,393	317
2015	220,894	320
2016	213,942	320
2017	187,201	320
2018	224,401	320



Derived from electric power consumption data from the Southern California Edison Company (Edison) that Terese Farms submitted with the Questionnaire

**APPENDIX O**  
**Verification Report for**  
**Pumpers with Insufficient Information Reported in the**  
**Response to the Questionnaire**

## **Appendix O: Pumping Verification Report for Pumpers With Insufficient Information**

The purpose of this appendix is to summarize pumpers who did not provide sufficient information for the verification and certification of groundwater production for the years between 1937 and 2019, with particular emphasis on the Base Period for use in establishing the Annual Pumping Allocation and determining eligibility for the Transient Pool. Pumpers who did not provide adequate groundwater production information in the response to the Questionnaire are tabulated in Table O-1. This appendix summarizes and presents the information collected from the pumpers' responses to the Questionnaire. Verification of groundwater production for these pumpers was generally not performed due to a lack of relevant information provided in the response to the Questionnaire. Table O-1 summarizes groundwater usage and information on well construction, water level, well pumps, and well service status for the all pumpers discussed in this appendix.

### **Carey Marvin**

Mr. Carey Marvin owns 2.52 acres of property in Inyokern, California (APN: 352-390-12-00-5), and the property is located within the Basin boundary. This property was established in 1980, and Mr. Marvin purchased this property in 2016. There is one (1) groundwater well located within this property; however, well construction information is not available. Mr. Marvin indicated in the response to the Questionnaire that the well had existed on this property prior to the establishment of the dwelling. The groundwater well is currently active, and extracted groundwater is for domestic water use (residential indoor and outdoor uses). Mr. Marvin did not provide annual groundwater production data or any other information that may assist in estimating groundwater production. In addition, records of groundwater production from the Cooperative Group are not available either.

In accordance with SGMA and California water law, the period between January 2010 and December 2014 has been considered by the Authority to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment; however, the lowest annual Base Period groundwater production cannot be determined based on the data provided in the response to the Questionnaire.

**Crestview Water**

According to the response to the Questionnaire, Mr. Kessler moved to this property in 1986 with a well located on the property, suggesting that groundwater extractions may have started prior to 1986. Mr. Kessler indicated that the property deed includes appurtenant water rights. The groundwater service area is approximately 20 acres with eight (8) customer connections served by eight (8) extraction wells; however, only six (6) connections are currently active to receive potable water service. Information on well construction, static water level, pump, and historical groundwater extractions were not provided. Estimates of groundwater production by Crestview Water were not provided in the response to the Questionnaire, and records of groundwater production from the Cooperative Group and the Authority are not available either.

**Dixie Water Company**

Dixie Water Company is located in Ridgecrest, California (APN not available). Groundwater has been extracted at this property to provide potable water to customers since March 1985; however, it is not clear if groundwater extraction is regulated or if extracted groundwater is produced by a well under a county Permit. The service area is approximately 40 acres with 12 service connections. There is one (1) well owned by Dixie Water Company. Well construction, static water level, and pump flow rate and intake location were not provided; however, the pump is manufactured by Grundfos (Model No. 40S50-a) and rated 5 horsepower. Dixie Water Company indicated in the response to the Questionnaire that flow meters have been using to monitor groundwater extraction since 1985, and the average annual groundwater production is approximately 350,000 gallons (1.07 AFY); however, annual groundwater production records are not provided. The average annual groundwater production estimate provided in the response to the Questionnaire cannot be verified because records of groundwater production from the Cooperative Group are not available. In addition, the Authority has a partial record of the 2018 and 2019 groundwater production (between October 2018 and January 2019), and the total groundwater production during this period is 1.32 AF.

## **Appendix O: Pumping Verification Report for Pumpers With Insufficient Information**

In accordance with SGMA and California water law, the period between January 2010 and December 2014 has been considered by the Authority to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment; however, the lowest annual Base Period groundwater production cannot be determined based on the data provided in the response to the Questionnaire.

### **Donna Sue Water Company**

Donna Sue Water Company is a 501C12 nonprofit organization located in Inyokern, California (APN: 084-242-30-00). Groundwater has been extracted to provide potable water service by a well drilled under Kern County Permit Number 802746 since January 1990. The total service area is approximately 40 acres with 14 service connections. There is one (1) well located on this property. The well was drilled in 1988 with a static water level of 356.5 feet below ground surface (bgs), measured while the pump was installed, and a total depth of 450 feet bgs. The pump is manufactured by Goulds (model number 701), and the groundwater intake is located at 360 feet bgs. There is a master flow meter installed in a well house to monitor groundwater extraction; however, the owner of the pump does not know how to read the flow meter. Consequently, annual groundwater production is not available. Records of groundwater production from the Cooperative Group are not available; however, the Authority has a 2019 groundwater production record of 2.63 AF for Donna Sue Water Company.

In accordance with SGMA and California water law, the period between January 2010 and December 2014 has been considered by the Authority to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment; however, the lowest annual Base Period groundwater production cannot be determined based on the data provided in the response to the Questionnaire.

### **Hammer Water Cooperative**

Hammer Water Cooperative is located in Inyokern, California (APN not available). The Secretary of Hammer Water Cooperative claimed that Hammer Water Cooperative

## **Appendix O: Pumping Verification Report for Pumpers With Insufficient Information**

is a De Minimis water extractor per Water Code Section 10721(e). Groundwater has been extracted from this property by a well under Kern County Permit Number WA0002719. The beginning date of groundwater extraction at this property is not available. There is one (1) well located in this property. The well was drilled in 1980 with a total depth of 289 feet bgs, but the static water level is not available. The manufacturer of the pump and groundwater intake location were not provided; however, the pump is rated 5 horsepower with a 50 gallons per minute (gpm) flow rate. The pump flow meter was installed in 2018 to monitor groundwater extraction; however, groundwater production is not provided in the response to the Questionnaire. Records of groundwater production from the Cooperative Group are not available; however, the Authority has a 2019 groundwater production record of 0.78 AF for Hammer Water Cooperative.

In accordance with SGMA and California water law, the period between January 2010 and December 2014 has been considered by the Authority to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment; however, the lowest annual Base Period groundwater production cannot be determined based on the data provided in the response to the Questionnaire.

### **Heritage Village Master Community Association**

Heritage Village Master Community Association (HVMCA) is located in Ridgecrest, California (APN: N/A). The property lot size is approximately 3.5 acres and located within the Basin boundary. The manager of the Heritage Village Master Community Association indicated in the response to the Questionnaire that there is one (1) groundwater well located within the Heritage Village Master Community Association property, and that extracted groundwater is not used for customer service or for agricultural purposes. Information regarding well construction, pump, use of flow meters, and annual groundwater production is not provided. Records of groundwater production from the Cooperative Group are not available.



## **Appendix O: Pumping Verification Report for Pumpers With Insufficient Information**

In accordance with SGMA and California water law, the period between January 2010 and December 2014 has been considered by the Authority to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment; however, the lowest annual Base Period groundwater production cannot be determined based on the data provided in the response to the Questionnaire.

### **Inyokern Community Services District**

Inyokern Community Services District (Inyokern CSD) is located in Inyokern, California (APN: N/A). Groundwater has been extracted by a well drilled under Kern County Permit Number 86-016 to provide potable water to customers since 1985. The service area is approximately 141 acres with 277 metered service connections. According to the SWRCB online database, Inyokern CSD owns a total of four (4) wells: one (1) active well, one (1) pending well, and two (2) inactive wells. Information on well construction, static water level, and pump data is not provided except for the active well. The active well was drilled in 1995 with a static water level of 292 feet bgs measured while the well was drilled, and a total well depth of 500 feet bgs. The manufacturer of the pump is not provided; however, the pump is rated 35 horsepower and groundwater intake is located at 450 feet bgs. Inyokern CSD indicated in the response to the Questionnaire that the annual groundwater production is 48,282 cubic feet (approximately 1.11 AFY); however, it is not clear whether the annual groundwater production is an average or the groundwater production for any specific year. The Authority has a record of 148.1 AFY of groundwater extracted in 2019; and the Cooperative Group also has records of annual groundwater productions for the period between 1975 and 2016 as shown in the table below.

**Appendix O: Pumping Verification Report for Pumpers With Insufficient Information**

***Records of Annual Groundwater Production for Inyokern CSD from the Cooperative Group (in acre-feet)***

<b>Year</b>	<b>Production</b>	<b>Year</b>	<b>Production</b>	<b>Year</b>	<b>Production</b>	<b>Year</b>	<b>Production</b>
1975	300.0	1986	300.0	1997	139.0	2008	118.0
1976	300.0	1987	300.0	1998	102.0	2009	118.0
1977	300.0	1988	173.0	1999	104.0	2010	118.0
1978	300.0	1989	175.0	2000	111.0	2011	118.0
1979	300.0	1990	170.0	2001	97.0	2012	117.9
1980	300.0	1991	150.0	2002	115.6	2013	117.7
1981	300.0	1992	141.0	2003	126.0	2014	108.0
1982	300.0	1993	150.0	2004	118.4	2015	90.5
1983	300.0	1994	146.0	2005	135.0	2016	102.3
1984	300.0	1995	125.0	2006	135.0		
1985	300.0	1996	134.0	2007	90.7		

There is a significant discrepancy between the groundwater production (1.11 AFY) reported in the response to the Questionnaire and the groundwater production records from the Authority and the Cooperative Group, suggesting that further investigation is needed to verify groundwater production.

In accordance with SGMA and California water law, the period between January 2010 and December 2014 has been considered by the Authority to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment; however, the lowest annual Base Period groundwater production cannot be determined due to the inconsistent groundwater production data between the Inyokern CSD reported production and the production records from the Authority and the Cooperative Group.

**Larry Schiller**

Mr. Larry Schiller owns 4 acres of property in Ridgecrest, California (APN not available), and the property is located within the Basin boundary. There is one (1) groundwater well located within this property. The well was drilled in 1969 with a static water level of 210 feet bgs, measured while the well was constructed, and a total well

## **Appendix O: Pumping Verification Report for Pumpers With Insufficient Information**

depth of 279 feet bgs. The pump was manufactured by Grundfos (Model No. 25330-15), rated 3 horsepower with a flow rate of 25 gpm. The well is currently active, and the extracted groundwater is used for domestic water purposes (residential indoor and outdoor uses). Annual groundwater extractions were not provided; however, Mr. Schiller indicated in the response to the Questionnaire that the estimated annual groundwater extraction is between 2 AF and 3 AF. Records of groundwater production from the Cooperative Group are not available, and the Authority does not have a record of groundwater production for Mr. Schiller.

In accordance with SGMA and California water law, the period between January 2010 and December 2014 has been considered by the Authority to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment; however, the lowest annual Base Period groundwater production cannot be determined based on the data provided in the response to the Questionnaire.

### **Life Water Cooperative**

Life Water Cooperative is located in Inyokern, California (APN not available). There is one (1) active well owned by Life Water Cooperative. According to the SWRCB online database, it appears Life Water Cooperative owns two (2) groundwater extraction wells, one (1) active and one (1) standby; however, Life Water Cooperative only provided the active well information in the response to the Questionnaire. The active well was drilled in 2010 with a static water level of 325 feet bgs, measured while the well was constructed, and a total depth of 500 feet bgs. The manufacturer of the pump and the pump flow rate were not provided; however, the pump is rated 7.5 horsepower.

Groundwater has been extracted by a well drilled under Kern County Permit Number WP11908 to provide potable water to customers since 1980. The service area is approximately 60 acres with 18 service connections. Individual flow meters have been installed at each service connection to monitor groundwater extractions; however, Life Water Cooperative did not provide groundwater extraction data except for 2019. Life Water Cooperative indicated in the response to the Questionnaire that the 2019

## **Appendix O: Pumping Verification Report for Pumpers With Insufficient Information**

groundwater production was 3,532,720 gallons (approximately 10.84 AF). Records of groundwater production from the Cooperative Group are not available for Life Water Cooperative; however, the Authority has the 2019 groundwater production record of 10.84 AF, which is the same as the 2019 groundwater production provided in the response to the Questionnaire.

In accordance with SGMA and California water law, the period between January 2010 and December 2014 has been considered by the Authority to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment; however, the lowest annual Base Period groundwater production cannot be determined based on the data provided in the response to the Questionnaire.

### **Mirage St. Water Cooperative**

Mirage St. Water Cooperative is located in Inyokern, California (APN not available). Mirage St. Water Cooperative indicated in the response to the Questionnaire that there is one (1) active well located within their property. The well was drilled in 1980 with a static water level of 313 feet bgs, measured while the well was constructed, and a total depth of 352 feet bgs. A submersible pump manufactured by Pentair (model number 40S50) is located 337 feet bgs. The pump is rated 5 horsepower, and the pump flow rate is not available.

Groundwater has been extracted by a well drilled under Kern County Permit Number WA0000553 to provide potable water to customers since April 1980. The service area is approximately 20 acres with 6 service connections. There is no flow meter installed to monitor groundwater extractions; however, Mirage St. Water Cooperative indicated that there was no groundwater extraction prior to 1980, and that the average annual groundwater production is equal to or less than 2 AF for the period between 1980 and present. Records of groundwater production from the Cooperative Group are not available for Mirage St. Water Cooperative; however, the Authority has the 2019 groundwater production record of 3.15 AF, which reasonably matches the reported production of approximately 2 AF in the response to the Questionnaire.

## **Appendix O: Pumping Verification Report for Pumpers With Insufficient Information**

In accordance with SGMA and California water law, the period between January 2010 and December 2014 has been considered by the Authority to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment; however, the lowest annual Base Period groundwater production cannot be determined based on the data provided in the response to the Questionnaire.

### **Northeast Leliter Water Cooperative**

Northeast Leliter Water Cooperative was established in 1990 and is located in Inyokern, California (APN not available). Northeast Leliter Water Cooperative owns two (2) wells: Steve St. Well and Marvin Gardens Well. Steve St. Well was drilled in 1987 with a static water level of 120 feet bgs, measured during well construction, and a total well depth of 220 feet bgs. The pump associated with the Steve St. Well is rated 5 horsepower. Pump and flow rate data were not provided. Marvin Gardens Well was drilled in 1982 with a static water level of 132 feet bgs, measured during well construction, and a total well depth of 234 feet bgs. The pump associated with Marvin Gardens Well is rated 5 horsepower. Pump and flow rate data were not provided. Both wells were drilled under the same County Permit Number 2609 to provide potable water to customers since April 1990. The service area is approximately 75 acres with 14 service connections. Pump flow meters were installed in August 2018, and groundwater productions prior to August 2018 were not provided. Records of groundwater production from the Cooperative Group are not available for Northeast Leliter Water Cooperative; however, the Authority has the monthly groundwater production records for the period between September 2018 and present. According to the Authority records, the total groundwater production for the period between September 2018 and January 2020 is 33.33 AF, which is the same as the reported groundwater production of 1,451,970 cubic feet (approximately 33.33 AF) in the response to the Questionnaire.

In accordance with SGMA and California water law, the period between January 2010 and December 2014 has been considered by the Authority to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA

## **Appendix O: Pumping Verification Report for Pumpers With Insufficient Information**

enactment; however, the lowest annual Base Period groundwater production cannot be determined based on the data provided in the response to the Questionnaire.

### **Owens Peak Water Cooperative**

The Owens Peak Water Cooperative provided no response to the Questionnaire except for a statement that reads as follows:

*“The Owens Peak Water Cooperative is a De minimis water extractor per Water Code 10721(e)”.*

Based on the previous well information submittal, the Owens Peak Water Cooperative owns one (1) active well. The well construction date is not provided; however, the well has a total depth of 336 feet bgs and a static water level of 306.5 feet bgs (date measured is not available). The pump associated with the well was manufactured by Berkeley with a 30 gpm flow rate and rated 5 horsepower. Records of groundwater production from the Cooperative Group are not available for the Owens Peak Water Cooperative; however, the Authority has monthly groundwater production records for the period from September 2018 to July 2019 and from October 2019 to December 2019, and the total groundwater production for this period is 9.36 AF.

In accordance with SGMA and California water law, the period between January 2010 and December 2014 has been considered by the Authority to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment; however, the lowest annual Base Period groundwater production cannot be determined based on the data provided in the response to the Questionnaire.

### **Pinon Water Cooperative**

Pinon Water Cooperative (PWC) is located in Inyokern, California (APN: 352-360-37-4). The name of the property owner was not specified in the response to the Questionnaire, though the owner indicated that this property was purchased in 1989.

## Appendix O: Pumping Verification Report for Pumpers With Insufficient Information

PWC indicated in the response to the Questionnaire that the previous property owner drilled a well on this property back in the late 1970's or early 1980's. Initial well construction data is not available; however, well construction was re-measured on December 4, 2006, showing a static water level of 119 feet bgs and a total well depth of 230 feet bgs. The pump was manufactured by Grundfos (rated 3 horsepower), and the groundwater intake is located at 160 feet bgs. The well has extracted groundwater for not-for-profit potable water usage (personal water usage) since the 1970's and 1980's. The service area is approximately 20 acres with 8 metered service connections.

Annual groundwater extractions were not provided in the response to the Questionnaire, except for approximately 3,000 cubic feet (0.069 AF) in 2019. Authority well registration records indicate that PWC water usage was approximately 3,738 cubic feet (0.086 AF) in 2016, and approximately 3,983 cubic feet (0.091 AF) in 2017. Records of groundwater production from the Cooperative Group are not available for PWC; however, the Authority has a 2019 groundwater production record for PWC of 2.42 AF. Because the extracted groundwater is for personal/domestic water usage, the reported groundwater production in the response to the Questionnaire may possibly be underestimated (0.069 AF versus 2.42 AF). According to the United States Environmental Protection Agency (EPA) study, the average family of 4 uses 400 gallons per day, or approximately 0.45 AF of water per year. PWC has 8 service connections, so the total annual water usage would be approximately 3.6 AF, which reasonably matches the 2019 Authority production record of 2.42 AF.

In accordance with SGMA and California water law, the period between January 2010 and December 2014 has been considered by the Authority to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment; however, the lowest annual Base Period groundwater production cannot be determined based on the data provided in the response to the Questionnaire.

**Southern California Edison**

Southern California Edison (SCE) indicated in the response to the Questionnaire that the SCE performed field checks and confirmed that no SCE wells or groundwater extraction facilities exist in the Basin. Records of groundwater production from the Cooperative Group and the Authority also indicate no groundwater extraction by the SCE. Consequently, determination of the lowest annual Base Period groundwater production for the SCE is not necessary.

**TNT Western Home, Inc.**

The TNT Western Home, Inc. is located in Inyokern, California (APNs: 352-440-9-00, 352-440-10-00, 352-440-11-00, 352-440-36-00, 352-440-37-00, 352-440-38-00, 352-440-39-00, 352-440-45-00, 352-440-46-00). There are two (2) wells (1 active and 1 inactive) owned by the TNT Western Home, Inc. The active well was drilled in July 2007 with a static water level of 116 feet bgs, measured while the well was constructed. The total depth of the well is not provided. The manufacture data of the active well is not known, but the groundwater intake of the active well pump is located at 163 feet bgs. The inactive well was also drilled in July 2007 with a static water level of 116 feet bgs measured while the well was constructed. The depth of the inactive well, manufacture of the pump, and pump depth are not provided. The inactive well is used as a backup well. The service area is approximately 23 acres with 9 service connections, and the service area is located within the Basin boundary. Historical groundwater production records were not provided. The TNT Western Home, Inc is planning to install flow meters at each service connection in the near future. Records of groundwater production from the Cooperative Group and the Authority for the TNT Western Home, Inc. are not available.

In accordance with SGMA and California water law, the period between January 2010 and December 2014 has been considered by the Authority to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment; however, the lowest annual Base Period groundwater production cannot be determined based on the data provided in the response to the Questionnaire.



**Welfl's Mini Mart**

The Welfl's Mini Mart is a 2-acre convenience store located in Inyokern, California (APN: N/A). There is one (1) well owned by the Welfl's Mini Mart, and the well has two (2) service connections for general store usage. The response to the Questionnaire indicated that the Welfl's Mini Mart started to extract groundwater in 1974; however, information of well construction, static water level, pump, and historical groundwater extractions were not provided. Records of groundwater production from the Cooperative Group and the Authority for the Welfl's Mini Mart are not available.

In accordance with SGMA and California water law, the period between January 2010 and December 2014 has been considered by the Authority to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment; however, the lowest annual Base Period groundwater production cannot be determined based on the data provided in the response to the Questionnaire.

**West Valley Mutual Water Cooperative**

The West Valley Mutual Water Cooperative (WVMWC) was founded in 1978 as a volunteer organization without a physical address. The WVMWC owns two (2) wells. One well was drilled in 1978 and the other well was drilled in 2008. Groundwater extractions started in 1978 and both well have been operating intermittently to provide potable water to customers. There is a master flowmeter installed to measure groundwater extractions; however, the installation date of the master flowmeter is not provided and the master flowmeter has been discovered highly inaccurate. According to the response to the Questionnaire, flowmeters were later installed at each customer connection; however, groundwater extractions of these two (2) wells are very limited and not reliable. Annual groundwater productions between 1978 and 2019 are provided below.

**Appendix O: Pumping Verification Report for Pumpers With Insufficient Information**

<b>Year</b>	<b>Groundwater Production (AF)</b>
1978 to 1988	N/A
1989	106.0
1990	N/A
1991	109.5
1992 to 12018	N/A
2019	20.0

Records of groundwater production from the Cooperative Group and the Authority for the WVMWC are not available. According to the response to the Questionnaire, the WVMWC appears to extract groundwater for an unknown usage; however, information of starting year of groundwater pumping, historical groundwater extraction, well construction, static water level, and well pump is either scattered, unorganized, and/or not available. Records of groundwater production from the the Cooperative Group for the West Valley Mutual Water Cooperative are not available; however, groundwater production record from the Authority shows the total groundwater production between September 2018 and February 2019 is 8.9 AF.

In accordance with SGMA and California water law, the period between January 2010 and December 2014 has been considered by the Authority to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment; however, the lowest annual Base Period groundwater production cannot be determined due to scattered and unreliable groundwater production data.

**Yellow Bird Water Cooperative**

The Yellow Bird Water Cooperative is located in Ridgecrest, California (APN: N/A). Groundwater has been extracted by a well drilled under Kern County Permit Number 0005789 to provide potable water service since 1986. There is one (1) well owned by the Yellow Bird Water Cooperative. The well was drilled in 1984 with a total depth of 353 feet bgs. The static water level measured while the well was constructed is not available; however, a water level of 310 feet bgs was measured on January 12, 2016. The submersible pump was manufactured by Grundfos (rated 3 horsepower); however, the

## **Appendix O: Pumping Verification Report for Pumpers With Insufficient Information**

location of the groundwater intake is not provided. The service area is approximately 20 acres with 8 service connections. According to the response to the Questionnaire, the quantity of extracted groundwater is monitoring by a flow meter installed at the pump and individual flow meter install at each service connection; however, historical groundwater productions are not provided. Records of groundwater production from the Cooperative Group for the Yellow Bird Water Cooperative are not available; however, the Authority the 2019 groundwater production record of 2.71 acre-feet (AF) for Yellow Bird Water Cooperative.

In accordance with SGMA and California water law, the period between January 2010 and December 2014 has been considered by the Authority to be the Base Period for the purpose of evaluating groundwater production that occurred prior to SGMA enactment; however, the lowest annual Base Period groundwater production cannot be determined based on the data provided in the response to the Questionnaire.

**Table O-1  
Well Construction Information for Pumpers with Insufficient Well/Extraction Information**

Owner/Contact	Well Name/ Number	Date Drilled	Well Depth (feet)	Casing Length (feet)	Static WL (ft, bgs)	Pumping Depth (ft, bgs)	Pump Type	Motor HP	Manufacturer's Pump Rating (gpm)	Pump Test	Date of Pump Test	Service Status	Questionnaire Groundwater Production (AFY)	Lowest Annual Production in Base Period (AFY) <sup>1</sup>	Year of Lowest Base Period Production <sup>1</sup>
Carey Marvin	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active	NA	N/A	N/A
Crestview Water	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active	NA	N/A	N/A
Donna Sue Water Company/ Jim Tooker	1	1988	450	N/A	356.5	360	N/A	7.5	Goulds 701	N/A	N/A	Active	2.63 AF in 2019 (Authority Record)	N/A	N/A
Hammer Water Cooperative/ John W Ayers	1	1980	289	N/A	N/A	N/A	N/A	3	50	N/A	N/A	Active	0.78 AF in 2019 (Authority Record)	N/A	N/A
Dixie Water Company/ Michael R. Haynes	1	N/A	N/A	N/A	N/A	N/A	N/A	5	Grundfos (40S50-1)	N/A	N/A	Active	1.07 AFY (annual average estimate)	N/A	N/A
Heritage Village Master Community/Sue Henderson	1	1985 or 1992	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active	NA	N/A	N/A
Inyokern Community Services District/William Dorcy	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive	1.11 AFY (yearly groundwater usage)	N/A	N/A
	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Pending			
	3 (Well 3)	1995	500	N/A	292	450	N/A	35	N/A	N/A	N/A	Active			
	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inactive			
Larry Schiller	1	1969	279	N/A	210	NA	Submersible	3	Grundfos 25 gpm	N/A	N/A	Active	NA	N/A	N/A
Life Water Cooperative/ Kerry Eikenskold	1	2010	500	N/A	325	N/A	N/A	7.5	N/A	N/A	N/A	Active	10.84 AF in 2019	N/A	N/A
	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Standby			
Mirage St. Water Cooperative/ Russell Gordon	1	1980	352	N/A	313	337	Submersible	5	Pentair (40S50)	N/A	N/A	Active	NA	N/A	N/A
Northeast Leliter Water Cooperative	Steve St. Well	1987	220	N/A	120	N/A	N/A	5	N/A	N/A	N/A	Active	33.33 AF between 09/2018 and 12/2019 (Authority Record)	N/A	N/A
	Marvin Gardens Well	1982	234	N/A	132	N/A	N/A	5	N/A	N/A	N/A	Active			
Owens Peak Water Cooperative/ John W Ayers	1	N/A	336	N/A	306.5	N/A	N/A	3	Berkeley (30 gpm)	N/A	N/A	Active	9.36 AF between 09/2018 and 12/2019 (Authority Record)	N/A	N/A
Pinon Water Company	1	Late 1970's/ Early 1980's	230	N/A	119	160	Submersible	3	Grundfos	N/A	N/A	Active	2.42 AF in 2019 (Authority Record)	N/A	N/A
Southern California Edison/ Eric A. Hodder	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	N/A	N/A
TNT Western Home, Inc	1	Jul-07	N/A	N/A	116	163	N/A	N/A	N/A	N/A	N/A	Active	NA	N/A	N/A
	2	Jul-07	N/A	N/A	116	N/A	N/A	N/A	N/A	N/A	N/A	Inactive			
Welfi's Mini Mart	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active	NA	N/A	N/A
West Valley Mutual Water Cooperative/Kurt Weisbrich	1	1978	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active	20 AF in 2019 (metered)	N/A	N/A
	2	2008	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Active			
Yellow Bird Water Cooperative/ Robert Neves	1	1984	383	N/A	310	N/A	Submersible	3	Grundfos (MS 4000)	N/A	N/A	N/A	NA	N/A	N/A

**Notes:**

1) "N/A" indicates that the lowest annual base period production cannot be determined due to a lack of accurate/consistent production data, or because production data was assumed in the Questionnaire to be the same every year.

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**IWVGA WATER RESOURCES MANAGER**

**STAFF REPORT**

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**TO: IWVGA Board Members** **DATE: August 14, 2020**

**FROM: Steve Johnson**

**SUBJECT: Agenda Item No. 9 - Board Consideration and Possible Approval of Variance Requests to Ordinance No. 01-20 by Meadowbrook Dairy and Quist Farms**

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The IWVGA approved and adopted Ordinance No. 01-20 (Ordinance) which has provisions for the installation of, use of, and reporting on metering equipment on groundwater extraction facilities in the Indian Wells Valley Groundwater Basin on March 19, 2020. Article 2, Section 1 of the Ordinance required Groundwater Extractors in the Basin to install a water meter that conforms with the IWVGA's Groundwater Well Flowmeter Standards, including installation of an hour meter as a secondary metering device on each and every one of their existing facilities by June 1, 2020.

Submittals for approval of flowmeters and requests for variance from the Ordinance received by the IWVGA as of July 27, 2020 are discussed below.

**Meadowbrook Dairy (Meadowbrook)**

Staff has reviewed information for eight (8) flowmeters submitted by Meadowbrook and determined that three (3) of flowmeters installed are not in compliance with the Groundwater Well Flowmeter Standards requirement that the meters be NSF 61 approved. NSF 61 is a legally recognized national standard in the United States for the human health effects assessment of materials, components and devices that come into contact with drinking water. The State Water Resources Control Board – Division of Drinking Water requires that water meters on all potable wells be NSF 61 approved. Kern County Environmental Health Department's current well permit application requires NSF 61 approved flow meters for both potable and irrigation wells. The previous version of Kern County Environmental Health Department's well permit application (prior to September 17, 2017) did not require that flow meters for irrigation wells be NSF 61 approved. The Meadowbrook wells are irrigation wells. Five (5) of the wells were installed prior to September 17, 2017, so they were not required to have flow meters that are NSF 61 approved. Three (3) of the wells were installed after September 17, 2017 and would

be subject to Kern County Environmental Health Department's requirement that they have flow meters that are NSF 61 approved. Meadowbrook has submitted a request for a variance for the three wells that don't have NSF 61 approved flow meters in a letter to the IWVGA dated April 27, 2020 stating the wells owned by Meadowbrook are for agricultural uses and should not be subjected to the same flowmeter requirements as for potable water wells. Meadowbrook has requested that they be allowed to continue using their existing flowmeters until they fail, at which time, they will be replaced with flowmeters that fully meet the IWVGA meter requirements. Meadowbrook has confirmed that hour meters are in the process of being installed and should be completed by late Summer 2020.

### **Quist Farm (Quist)**

Quist submitted a request to the IWVGA on April 26, 2020 to use of an alternative water measuring method as provided in Article 2, Section 6 of the Ordinance. Quist's proposed alternative method estimates flow quantities by using pump curves and run times for the pumps. Quist has previously tentatively indicated they will cease agricultural operations shortly after adoption of the anticipated Replenishment Fee by the IWVGA. Staff has reviewed the information submitted by Quist and determined that it would be an acceptable temporary approach.

### **ACTION(S) REQUIRED BY THE BOARD**

Staff recommends that your Board:

1. Approve the request for variance submitted by Meadowbrook to continue using their existing flowmeters to the end of their useful life which will then be replaced with IWVGA approved flowmeters.
2. Approve the request for variance submitted by Quist to continue using the submitted alternative flow quantities measuring approach on a temporary basis, given it is anticipated Quist will be abandoning its agricultural production in the future.

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# IWVGA ADMINISTRATIVE OFFICE

*STAFF REPORT*

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**TO:** IWVGA Board Members **DATE:** August 20, 2020

**FROM:** IWVGA Staff

**SUBJECT:** **Agenda Item No. 10 – Public Hearing for Frank Bellino for Failure to Register, Report and Pay Groundwater Extraction Fees**

## DISCUSSION

The Board of the Indian Wells Valley Groundwater Authority adopted Ordinance 02-18 “Establishing Groundwater Extraction Fees and the Rules and Regulations and Procedures for Their Implementation” July 19, 2018. The Ordinance pertains to all non-deminimis extractors within the basin as defined in California Water Code section 10721(e). Section 4 of the Ordinance states, “No later than August 20, 2018, a Groundwater Extraction Facility within the boundaries of the Basin shall be registered with the Authority by the Groundwater Extractor.” Section 6 further states, “Before the 10th day of each calendar month, the Groundwater Extractor shall self-report the necessary data from its Groundwater Extraction Facility on the self-reporting form provided by the Authority and pay the Groundwater Extraction Fee set forth in Section 3 above.”

Frank Bellino has been confirmed by other local agriculture operations, the RealQuest property database and photographs included with this staff report to be a non-deminimis agricultural extractor. County assessor’s data also confirms the property is being used to grow pistachios. Mr. Bellino has failed to register his well(s) and has failed to comply with payment of the groundwater extraction fee since the fee became effective September 2018. Mr. Bellino was mailed notices advising him of his failure to comply on three separate occasions; July 2018, November 2018 and January 2019. The letters have stated, “Please be advised that your continued failure to register your groundwater production well(s) using the enclosed Registration Form and payment of the groundwater extraction fee will subject you to legal action by the Authority, including a court order to prevent you from extracting groundwater from the basin and requiring payment of the groundwater extraction fee, with penalties, as a result of your non-compliance.” He has failed to respond to every outreach effort.

Water Code section 10730.6 expressly provides the Board with the following authorities to address violations of Ordinance 02-18:

- 1) Assessment of a 10% penalty and interest at 1% per month of delinquency;
- 2) Order the cessation all groundwater extractions until the violations have been cured and all delinquent charges, penalties and interest have been paid; and/or,

3) Bring suit seeking judicial orders and attachments.

**RECOMMENDED BOARD ACTION(S)**

- 1) Open hearing and take testimony;
- 2) Close hearing, consider testimony; and,
- 3) If appropriate order remedies which could include part, or all, of the following:
  - a. Order the owner and staff to come to agreement on delinquent charges within a specified time and impose the statutory penalty and interest on the delinquent amounts;
  - b. If agreement is not reached within a specified time, order the owner to cease all extractions until the violations have been cured including the payment of all charges, penalties and interest;
  - c. Authorize staff to bring suit seeking judicial orders and attachments.

All views showing newer plantings looking north from Seibenthal Avenue.





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# IWVGA ADMINISTRATIVE OFFICE

*STAFF REPORT*

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**TO:** IWVGA Board Members

**DATE:** August 20, 2020

**FROM:** IWVGA Staff

**SUBJECT: Agenda Item No. 11 – Public Hearing for Pearsonville Park for Failure to Report and Pay Groundwater Extraction Fees**

## **DISCUSSION**

The Board of the Indian Wells Valley Groundwater Authority adopted Ordinance 02-18 “Establishing Groundwater Extraction Fees and the Rules and Regulations and Procedures for Their Implementation” July 19, 2018. The Ordinance pertains to all non-deminimis extractors within the basin as defined in California Water Code section 10721(e). Section 4 of the Ordinance states, “No later than August 20, 2018, a Groundwater Extraction Facility within the boundaries of the Basin shall be registered with the Authority by the Groundwater Extractor.” Section 6 further states, “Before the 10th day of each calendar month, the Groundwater Extractor shall self-report the necessary data from its Groundwater Extraction Facility on the self-reporting form provided by the Authority and pay the Groundwater Extraction Fee set forth in Section 3 above.”

Diana Pearson did register a well in Inyo County used for a commercial enterprise, Pearsonville Shell, and Pearsonville Park on March 26, 2019. Although she has been mailed Monthly Reporting Forms (MRF), she has failed to submit them and pay the groundwater extraction fee since the fee became effective September 2018. Ms. Pearson has also received letters notifying her of the requirement to pay the groundwater extraction fee. When contacted by phone, she requested “proof” of the requirement to pay the fee. Staff provided a copy of Ordinance 02-18 with another MRF March 24, 2020. Staff has since spoken to David Pearson who provided contact information for Phillip Barry, the “well manager”. Staff attempted to contact Mr. Barry on May 13, 2020 leaving a voicemail. There has been no response since that time.

Water Code section 10730.6 expressly provides the Board with the following authorities to address violations of Ordinance 02-18:

- 1) Assessment of a 10% penalty and interest at 1% per month of delinquency;
- 2) Order the cessation all groundwater extractions until the violations have been cured and all delinquent charges, penalties and interest have been paid; and/or,
- 3) Bring suit seeking judicial orders and attachments.

## **RECOMMENDED BOARD ACTION(S)**

- 1) Open hearing and take testimony;
- 2) Close hearing, consider testimony; and,
- 3) If appropriate order remedies which could include part, or all, of the following:
  - a. Order the owner and staff to come to agreement on delinquent charges within a specified time and impose the statutory penalty and interest on the delinquent amounts;
  - b. If agreement is not reached within a specified time, order the owner to cease all extractions until the violations have been cured including the payment of all charges, penalties and interest;
  - c. Authorize staff to bring suit seeking judicial orders and attachments.

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## IWVGA Board Meeting August 20, 2020

- **Prop 1 Status/Schedule**
  - Invoice #6:
    - Covers January 2020 through March 2020
    - Total Payment after retention: \$40,218.79
    - Status: Submitted May 25, 2020
    - Final responses to DWR August 12, 2020
  - Invoice #7:
    - Covers April through June 2020
    - Will be submitted before August 31, 2020
    - Total Payment after retention estimated \$90,000 .

AGENDA ITEM 12a



## IWVGA Board Meeting August 20, 2020

- **Prop 68 Status/Schedule**
  - IWVGA awarded \$330,000 of the maximum eligible of \$330,827 (with \$300,000 currently available).
  - Grant agreement fully executed on May 4.
  - Invoice #1 will be submitted before August 31, 2020
  - Total Payment after retention estimated \$205,000.

AGENDA ITEM 12b



# IWVGA Board Meeting August 20, 2020

## DRAFT SCHEDULE

### KEY DATES FOR GROUNDWATER AUTHORITY AND GSP

### KEY DATES

#### 1. GA June Board Meeting.

- Allocation of Sustainable Yield Report released for review
- Replenishment Fee Notices and Report released for review
- Transient Pool and Fallowing Program released for review
- All Reports provided to PAC/TAC members for review.
- GSP Pump Fee Adjustment Report Data released for review
- Transient Pool and Fallowing Program released for review
- New Extractor Policy and Reporting Adoption
- Pumping Verification Report Status

**June 18<sup>th</sup>**  
(DONE)

AGENDA ITEM 12c



# IWVGA Board Meeting August 20, 2020

## DRAFT SCHEDULE

### KEY DATES FOR GROUNDWATER AUTHORITY AND GSP

### KEY DATES

#### 2. GA July Board Meeting.

- GSP Pump Fee Adjustment Board Adoption
- Sustainable Yield Report Adoption
- Pumping Verification Reports Update

DONE

#### 3. GA August Board Meeting

- Pumping Verification Report Adopted
- Consideration of Prop 218 Report – New Replenishment Fee
- Replenishment Fee Public Hearing Adoption (effective date by Board)
- Transient Pool and Fallowing Program Adopted

August 20<sup>th</sup>/21<sup>st</sup>

August 20<sup>th</sup>

August 21<sup>st</sup>

August 21<sup>st</sup>

#### 4. GA September Board Meeting

- Consideration on Policy for All New Groundwater Extraction Wells

**September 17<sup>th</sup>**

AGENDA ITEM 12c



# IWVGA Board Meeting August 20, 2020

## DRAFT SCHEDULE

### KEY DATES FOR GROUNDWATER AUTHORITY AND GSP

5. GSP Pump Fee Adjustment Reporting Begins
6. Full Month GSP Pump Fee Adjustment
7. Replenishment Fee Effective – Reporting Begins
8. Transient Pool/Fallowing Program Start Design Process
9. Transient Pool/Fallowing Program Final Design  
(Coordinate with Replenishment Fee Effective Date)

### KEY DATES

- Sept. 1st
- Oct 1<sup>st</sup>
- ?
- August 21st
- ?

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**Indian Wells Valley Groundwater Authority  
July 2020 Financial Report**

	FY 2019 Actuals	2020 Budget	FYTD through July (GSP)	FYTD through July (Admin)
<b>Beginning Balance</b>	<b>476,713</b>		<b>83,900</b>	-
County of Kern Advance	-	-	-	-
IWVWD Advance	-	-	-	-
Navy in-Kind	-	-	-	-
IWVWD In-kind	-	-	-	-
Initial Member Contribution	-	-	-	-
<b>Beginning Balance</b>	<b>476,713</b>	-	<b>83,900</b>	-
<b>Revenues</b>				
DWR	-	-	-	-
Prop 1 Grant	851,406	-	174,984	-
-GSP Preparation @ \$1,500,000	-	-	-	-
-SDAC @ \$646,000	-	686,800	-	-
SDAC Reimbursement	-	244,165	-	-
Assessment Pumping Fee	567,846	506,000	309,314	-
<b>Total Revenue</b>	<b>1,419,253</b>	<b>1,436,965</b>	<b>484,298</b>	-

<b>Expenses</b>		
Task 1- Initial GSP Support Studies	31,762	NO LONGER USED FOR FY 2020
Task 2- Proposition 1 SGMA GSP Development Grant	43,389	
Task 3- Data Management System	96,332	
Task 4- GSP Development and Submittal	764,106	
Task 5- SDAC Projects	25,065	
Task 6- IWVGA Project Management and Administrative Tasks	123,178	
- City of Ridgecrest Reimbursement	-	
Task 7- Legal Services	112,305	
Task 8- Stakeholder/Authority Coordination	206,295	
- Additional PAC/TAC/Board Meeting Support	-	
- Additional Pump Fee Support	-	
Task 9- Groundwater Pumping Fee Support	103,023	
Stetson- TSS Support	7,333	
Stetson- Brackish Water Support	6,025	
Stetson- Imported Water Coordination	30,774	
Stetson- Allocation Process Support	97,073	
Stetson- Navy-Coso Funding Support	5,698	
Auditing Services & IWVWD Reimbursement for Website fees	6,276	
Banking Fees	-	
Addtl Insurance Cost	9,967	
PAC & TAC Meeting Costs	6,142	
Water Marketing	118,683	
Well Monitoring	15,590	
Water Smart Grant	3,050	
Undocumented Expenditures (pre-FY2018)	-	
<b>Total Expenses</b>	<b>1,812,065</b>	

	GSP Budget	Admin Budget	FYTD through July (GSP)	FYTD through July (Admin)
City of Ridgecrest Reimbursement	210,466	-	-	-
County of Kern Advance Reimbursement	500,000	-	-	-
IWV Water District Advance Reimbursement	500,000	-	-	-
Legal Services	68,228	350,000	15,976	15,792
Stetson	310,000	996,000	384,857	-
DRI	-	-	3,591	-
SDAC	537,163	-	-	-
Auditing Services	-	7,000	1,800	2,000
IWVWD Reimbursement for Website fees	-	-	-	276
Banking Fees	-	-	-	-
Additional Insurance Cost	-	10,000	-	9,993
PAC & TAC Meeting Costs	1,000	11,000	-	-
Water Marketing	-	-	-	27,835
Well Monitoring	-	-	-	1,260
Other (Mailer, etc.)	-	5,000	1,888	1,034
<b>Total Expenses</b>	<b>2,126,857</b>	<b>1,379,000</b>	<b>408,112</b>	<b>58,190</b>

<b>Ending Balance</b>	<b>(2,068,892)</b>	<b>101,895</b>
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<b>Unpaid Invoices</b>	
ACWA INV# INV008868, 07/21/20	475.00
Capitol Core INV# 2020-036, 07/01/20 (IWVWD paid pending amendment)	8,912.50
Capitol Core INV# 2020-043, 08/03/20 (IWVWD paid pending amendment)	9,631.25
Stetson INV# 2652-27, 12/13/19 (approved, deferred)	183,634.49
Stetson INV# 2652-32, 04/16/20 (approved, deferred)	105,748.23
Stetson INV# 2652-34, 06/10/20 (approved, deferred)	113,815.49
Stetson INV# 2652-35, 07/20/20	109,589.65
Stetson INV# 2652-36, 08/14/20	103,189.02
	<b>634,995.63</b>

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**To:** Don Zdeba, General Manager Indian Wells Valley Groundwater Authority

**From:** Jeff Simonetti, SVP Capitol Core Group

**cc:** Michael W. McKinney, Partner  
Todd Tatum, Senior Advisor Capitol Core Group

**Date:** August 20, 2020

**Subject:** Project Update Memorandum –July 2020 Activities

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In July, Capitol Core primarily focused its work on both outreach for funding procurement as well as monitoring the National Defense Authorization Act (NDAA) for policy items related to water scarcity and Department of Defense installations. This memorandum will outline the specific tasks completed in July, and the next steps we will conduct during the month of August.

#### **National Defense Authorization Act (NDAA, H.R. 6395 and S. 4049)**

As discussed in our June report, Rep. Crow of Colorado introduced the WATER Act, intended to be included as an amendment to the National Defense Authorization Act. The WATER Act would require Department of Defense Installations to determine its water needs and report to the Armed Services Committee whether its water supplies (or lack thereof) presented resiliency challenges. The bill would have also required an annual reporting requirement back to the Committee on the status of the installation's water needs. This bill, in slightly different form (specifically with one report required rather than annual recurring reports), was folded into the NDAA report that came from the House Subcommittee on Readiness.

Both the Senate and House versions of the NDAA moved forward through their respective houses. We have proposed amendments to the WATER Act provisions within the House bill to address the need for collaborative and regional solutions to water supply for military communities in water-constrained areas. We are working closely with our local delegation as well as with pertinent Armed Service Committee members to move our amendments forward and have them heard in Conference Committee.

#### **Other Federal Legislation**

As part of our Scope of Work, Task 3 instructs us to determine potential funding sources that the Groundwater Authority may avail themselves so assist financially with the water infrastructure project. There are a few bills that we are monitoring and have actively engaged on including:

- **AWIA and DWIA (Sen. Barasso, R-WY):** As mentioned last month, these bills remain in Committee awaiting further markups. We will continue to monitor their progress in the upcoming month and determine whether these provisions may be rolled into omnibus infrastructure bills currently moving forward in the Congress.
- **Water for Tomorrow Act (Sen. Harris, D-CA):** Senator Harris introduced the Water for Tomorrow Act, which adds further programs that may be beneficial to the Authority's goals. Specifically, there are provisions that would provide funding for disadvantaged communities to address both water supply shortfalls and wastewater treatment needs. The bill from Senator Harris is part of a set of companion legislation moving through the House from Representative Jim Costa (D-CA). We are coordinating

with IWVGA staff to determine whether there are eligible projects for this legislation should it or the companion House legislation pass, and we are monitoring its progress in the Senate.

### **Federal Funding Opportunities – WIFIA Program**

As part of our federal funding sources monitoring, we aim to keep you apprised of potential funding sources that the Authority may be able to leverage for future funding needs. On July 14, 2020, the U.S. Environmental Protection Agency (EPA) released \$6 Billion in available funding for the FY2020-2021 period. This is the third stage of the federal funding cycle (1. Authorization; 2. Appropriation; and 3. Programmed for award, grant or loan). The WIFIA program is a federal credit program that the US EPA administers for eligible water and wastewater infrastructure projects. WIFIA allows for loans up to 49% of the total project costs with up to 80% combined total federal funding (with the remainder coming from other sources such as grants). State Revolving Funds, under limited circumstances, may be considered as “federal funds” for the purpose of calculating the 80% limitation rule. There are two project criteria for WIFIA loans 1) drinking water projects and 2) clean water projects.

Congress originally passed WIFIA in 2014 and reauthorized in 2018. Each year of programmatic funding has been appropriated by Congress with continuing increases for the foreseeable future. While Congress will be required to reauthorize WIFIA in 2022, all indications are that there is bipartisan support for such reauthorization. For FY2019, \$20 million has been appropriated for WIFIA-related projects, which can provide up to \$2 billion in credit assistance due to the leverage of the funding source. As indicated WIFIA will be authorized through FY22. Appropriated funding for the program is likely to continue through that period.

### **Next Steps**

In August, we will continue to monitor the NDAA and other water-specific policy bills as they move forward in the Congress. We plan to work actively with the Conference Committee as they address the differences in the NDAA bills and we will continue to propose our amendments to the water provisions of the bill. We are engaging with members of the House Armed Services Committee and other committees to discuss the project, the provisions of the NDAA and our need for infrastructure funding. We will also remain engaged with the US Navy and continue the discussions with them as they consider our participation request related to the proposed imported water supplies project. Finally, we anticipate that the final applicant list for this year’s tranche of Defense Community Infrastructure Program (DCIP) dollars will be released this month, and we will monitor the DoD’s recommendations for these projects.



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**Indian Wells Valley Groundwater Authority**  
**Status of Compliance with Well Registration and Metering Requirements**  
**August 2020**

No.	Name	Number of Wells	Category	Type of Use	Well(s) Registered?	Flow Meter Installed on Well(s)?	Meter Accuracy Tests Submitted?	Notes
1	Amberglow Ranch (Patricia Davis)	2	Non De Minimis	Agriculture	Yes	Yes	No	Response to pumping verification Questionnaire states that flow meters were installed in 2019. IWVGA Monthly Reporting Form contains flow meter readings.
2	Blubaugh, Patrick	1	Non De Minimis	Agriculture	Yes	No	No	Water Use estimates submitted in the Well Registration Form and IWVGA Monthly Reporting Form are based on calculations using number of trees, emitters, and irrigation rates. No indication of flow meters being installed/used.
3	Brady's Café and Mini Mart	1	Non De Minimis	Commercial	Yes	Yes	No	Well registration form states that flow meters are installed, and IWVGA Monthly Reporting Form contains flow meter readings.
4	Buttermilk Acres	1	Non De Minimis	Domestic	Yes	Yes	No	Well registration form states that flow meters are installed, and IWVGA Monthly Reporting Form contains meter readings.
5	China Lake Acres Mutual Water Company	1	Non De Minimis	Domestic	Yes	No	No	Response to pumping verification Questionnaire states that flow meters are installed on each individual property/parcel, though the installation date was not specified. The well is not equipped with a flow meter, per the Well Registration Form.
6	CHLT Water Group	1	Non De Minimis	Domestic	Yes	Yes	No	Response to pumping verification Questionnaire states that flow meters were installed on each individual property/parcel in 2013. The well has a master flow meter, per the Well Registration Form.
7	City of Ridgecrest	5	Non De Minimis	Irrigation	Yes	Yes	No	Response to pumping verification Questionnaire states that flow meters were installed in January 2019. IWVGA Monthly Reporting Form contains flow meter readings.
8	Condon, Bethany	1	Non De Minimis	Domestic / livestock	Yes	Unknown	N/A	
9	Crestview Water System	1	Non De Minimis	Domestic	Yes	No	No	IWVGA Monthly Reporting Form contains combined meter readings for all individual properties/parcels. The well is not likely not equipped with a flow meter.
10	Desert Memorial Park	1	Non De Minimis	Irrigation	Yes	No	No	Well Registration form indicates that no flow meter is installed.
11	Desert Sands Mutual Water Co-Op	1	Non De Minimis	Domestic	Yes	Unknown	N/A	Well Registration form indicates that 4 meters (assumed to be installed on each property/parcel) reflect all groundwater extractions. It is unclear if the well is equipped with a flow meter.
12	Dixie Water Company	1	Non De Minimis	Domestic	Yes	Yes	No	Well Registration Form has flow meter readings.
13	Donna Sue Water Co-Op	1	Non De Minimis	Domestic	Yes	Yes	No	Well Registration Form indicates that a master flow meter is installed in the well house. IWVGA Monthly Reporting Form contains flow meter readings.
14	Dune I Water	1	Non De Minimis	Domestic	Yes	No	No	Water use estimate in the IWVGA Monthly Reporting Form is based on population served. It is therefore assumed that no flow meter is installed on the well.
15	Dune III Mutual Water Company	2	Non De Minimis	Domestic	Yes	No	No	Well Registration Form states that each property/customer has their own meter. Water use estimates in the IWVGA Monthly Reporting Form are based on total usage for all homes/connections. It does not appear that the well is equipped with a flow meter.
16	Dune V Water Company	1	Non De Minimis	Domestic	Yes	No	No	IWVGA Monthly Reporting Form includes electric meter readings. It appears that no flow meters are installed.
17	East Inyokern Mutual Water	3	Non De Minimis	Domestic	Yes	Yes	No	Well Registration Form indicates that flow meters are installed, and IWVGA Monthly Reporting Forms contain flow meter readings.
18	Ferran Water System	1	Non De Minimis	Domestic	Yes	Yes	No	Well Registration Form indicates tha a flow meter is installed on the well.
19	Freeman, John	1	Non De Minimis	Domestic / Irrigation	Yes	Unknown	N/A	
20	Gateway Ace Hardware/Gateway Market	1	Non De Minimis	Commercial	Yes	Yes	No	Well Registration Form indicates that flow meters are installed, and IWVGA Monthly Reporting Forms contain flow meter readings.
21	Gilbert Mutual Water Company	1	Non De Minimis	Domestic	Yes	No	No	Water use estimate in the IWVGA Monthly Reporting Form is based on population served. It is therefore assumed that no flow meter is installed on the well.

**Indian Wells Valley Groundwater Authority**  
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**August 2020**

No.	Name	Number of Wells	Category	Type of Use	Well(s) Registered?	Flow Meter Installed on Well(s)?	Meter Accuracy Tests Submitted?	Notes
22	Hammar Water Co-Op	1	Non De Minimis	Domestic	Yes	Yes	No	Well Registration Form indicates that flow meters are installed, and IWVGA Monthly Reporting Forms contain flow meter readings.
23	Heritage Village	1	Non De Minimis	Irrigation	Yes	Yes	No	IWVGA Monthly Reporting Form contains flow meter readings.
24	Hickle, Art (Hickle Family Trust)	2	Non De Minimis	Agriculture	Yes	Yes	No	Well Registration Form indicates that flow meters are installed, and IWVGA Monthly Reporting Forms contain flow meter readings.
25	Hometown Water Association	1	Non De Minimis	Domestic	Yes	Yes	No	Well Registration form indicates that a master flow meter is installed.
26	Hovaten, Max (Terese Farms)	3	Non De Minimis	Agriculture	Yes	No	No	IWVGA Monthly Reporting Form contains electric meter readings.
27	IAC Water Company	2	Non De Minimis	Domestic	Yes	Yes	No	Well Registration Form indicates that flow meters are installed.
28	Indian Wells Valley Water District	10	Non De Minimis	Municipal	Yes	Yes	Yes	Meters on two (2) IWVWD wells were purchased and installed in 2006 and are therefore exempt from the NSF 61 requirement, which requires that treatment and distribution equipment installed after March 2008 for potable water systems be NSF 61 certified. IWVWD has submitted additional documentation confirming that all other wells are NSF 61 approved. IWVWD has confirmed that run-hour meters have been installed at all their wells. Accuracy test reports for meter calibration by an IWVGA-approved contractor were submitted on June 20, 2020; flow meters have an accuracy range within 2%, which is in compliance with IWVGA requirements.  No further action required.
29	Inyokern Community Services District	1	Non De Minimis	Domestic	Yes	Yes	No	Well Registration Form indicates than an 8" flow meter (unknown manufacturer) is installed.
30	Jumper St Water Co-op	1	Non De Minimis	Domestic	Yes	Yes	No	Response to pumping verification Questionnaire states that a flow meter is installed, though the installation date was not specified. Well Registration Form indicates that a flow meter is installed.
31	Kern County	1	Non De Minimis	Commercial	Yes	Yes	No	Response to pumping verification Questionnaire states that a McCrometer turbine meter has been used to measure groundwater extraction since 2015.
32	Life Water Co-Op	1	Non De Minimis	Domestic	Yes	Yes	No	Well Registration Form indicates that flow meters are installed, and IWVGA Monthly Reporting Forms contain flow meter readings.
33	Meadowbrook Dairy	10	Non De Minimis	Agriculture	Yes	Yes	No	Three (3) Meadowbrook wells do not meet the NSF 61 requirements on Kern County's well permit applications. Meters on five (5) other wells were installed prior to September 17, 2017, indicating they may potentially be exempt from the Kern County NSF 61 metering requirement.  A variance request was submitted by Meadowbrook on April 27, 2020, and Meadowbrook has requested that they continue using the existing flow meters until failure, at which time they will be replaced with NSF 61 approved meters.  Meadowbrook response letter sent on August 1 states that McCall's meters is scheduled to conduct meter accuracy tests during week of August 3rd.
34	Mirage St Water Co-Op	1	Non De Minimis	Domestic	Yes	No	No	Well Registration Form indicates that no flow meter is installed. Water use estimates submitted in IWVGA Monthly Reporting Form are based on population served and number of horses. It is assumed that no flow meter is installed.

**Indian Wells Valley Groundwater Authority**  
**Status of Compliance with Well Registration and Metering Requirements**  
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No.	Name	Number of Wells	Category	Type of Use	Well(s) Registered?	Flow Meter Installed on Well(s)?	Meter Accuracy Tests Submitted?	Notes
35	Mojave Pistachio / RTS Agri Business	13	Non De Minimis	Agriculture	Yes	Yes	No	Seven (7) of the wells have flow meters installed, per their Well Registration Forms. The other six (6) Well Registration Forms did not provide any data on whether a flow meter was installed.  IWVGA Monthly Reporting Form for June 2020 indicates that only nine (9) wells were provided with meter reads in June 2020.
36	Northeast Leliter Co-Op	2	Non De Minimis	Domestic	Yes	Yes	No	Well Registration Form indicates that flow meters are installed, and IWVGA Monthly Reporting Forms contain flow meter readings.
37	NTSP	4	Non De Minimis	Agriculture	Yes	Unknown	N/A	
38	Owens Peak South	1	Non De Minimis	Domestic	Yes	Yes	No	Well Registration Form indicates that a flow meter is installed.
39	Owens Peak Water Co Op	1	Non De Minimis	Domestic	Yes	Yes	No	IWVGA Monthly Reporting Form contains flow meter readings.
40	Owens Peak West	1	Non De Minimis	Domestic	Yes	Yes	No	IWVGA Monthly Reporting Form contains flow meter readings.
41	Pearson, Diana	1	Non De Minimis	Commercial / Irrigation	Yes	Unknown	N/A	
42	Pinon Water System	1	Non De Minimis	Domestic	Yes	No	No	Water use estimates in IWVGA Monthly Reporting Form are based on total water use from each connection/property. It appears that each property has a water meter, but the well is not equipped with a flow meter.
43	Quist Farms/Don Quist	7	Non De Minimis	Agriculture	Yes	No	No	A variance request was submitted on April 26, 2020, for an alternative method of estimating groundwater production. A temporary variance may be granted due to anticipated shut-down of farming operations.
44	Ridgecrest Charter School	1	Non De Minimis	Irrigation	Yes	Unknown	N/A	
45	Schiller, Larry	1	Non De Minimis	Domestic / Irrigation	Yes	Yes	No	IWVGA Monthly Reporting Forms contain flow meter readings.
46	Searles Valley Minerals	5	Non De Minimis	Industrial	Yes	Yes	No	SVM meters were purchased and installed in 2006 and are therefore exempt from the NSF 61 requirement, which requires that treatment and distribution equipment installed after March 2008 for potable water systems be NSF 61 certified. SVM has confirmed that run-hour meters have been installed at all their wells.  No meter accuracy tests have been received at this time, and the IWVGA has not been notified of any future submissions.
47	Shaklett, Scott and Gale	1	Non De Minimis	Agriculture	Yes	Yes	No	Well Registration Form indicates that a flow meter is installed, and IWVGA Monthly Reporting Forms contain flow meter readings.
48	Sierra Shadows Ranch / John Thomas Conaway	4	Non De Minimis	Agriculture	Yes	Yes	No	Well Registration Form indicates that flow meters are installed, though they are used as a farming maintenance tool and are not calibrated to determine accurate water use for the purpose of determining water rates. IWVGA Monthly Reporting Forms contain flow meter readings.
49	Simmons Farms	1	Non De Minimis	Agriculture	Yes	Yes	No	Response to pumping verification Questionnaire states that a flow meter was installed on the Large Ag Well when drilled in 2012. The other two wells (Domestic Well & Small Ag Well) do not have flow meters installed. Well Registration Form indicates that a flow meter is installed, and IWVGA Monthly Reporting Forms contain flow meter readings.
50	South Desert Mutual Water Company	1	Non De Minimis	Domestic	Yes	Yes	No	Well Registration Form indicates that the well is equipped with a water flow meter and an electrical meter.
51	Sweet Water Co-Op	1	Non De Minimis	Domestic	Yes	Yes	No	Well Registration Form indicates that a flow meter is installed.
52	Szelog, Matt (John)	1	Non De Minimis	Domestic / Irrigation	Yes	Yes	No	Well Registration Form indicates that a flow meter is installed, though the manufacturer and model number was unknown.

**Indian Wells Valley Groundwater Authority**  
**Status of Compliance with Well Registration and Metering Requirements**  
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No.	Name	Number of Wells	Category	Type of Use	Well(s) Registered?	Flow Meter Installed on Well(s)?	Meter Accuracy Tests Submitted?	Notes
53	Warren Water System	1	Non De Minimis	Domestic	Yes	No	No	Water use estimate in the IWVGA Monthly Reporting Form is based on population served. It is therefore assumed that no flow meter is installed on the well.
54	West Valley Mutual Water Co.	2	Non De Minimis	Domestic	Yes	Yes	No	IWVGA Monthly Reporting Forms contain flow meter readings.
55	Yellow Bird Water Co-Op	1	Non De Minimis	Domestic	Yes	Yes	No	Well Registration Form indicates that a flow meter is installed, and IWVGA Monthly Reporting Forms contain flow meter readings.
56	Bellino, Frank	Unknown	Presumed Non De Minimis	Agriculture	No	--	--	Known Ag (confirmed by local small ag). Shown in aerial photos. Listed under different name in Kern County database. Listed as pistachios from Assessor's data.
57	El Solana Trailer Park	Unknown	Presumed Non De Minimis	Unknown	No	--	--	Listed in Donna Thomas List. Not in State database or county database. Significant internet presence.
58	Michael Mcgee Business Trust / NTSP LLC - Tom Lara	Unknown	Presumed Non De Minimis	Agriculture	No	--	--	Known Ag (confirmed by local small ag)
59	Sierra Breeze Mutual Water Company	Unknown	Presumed Non De Minimis	Domestic	No	--	--	Listed in County Database and PAC List- high number of connections.
60	Ama, Suzie	Unknown	Presumed Non De Minimis	Agriculture	No	--	--	Local small ag confirmed. Not listed in county database. Not shown in aerial photos.
61	Douglas Smith	Unknown	Presumed Non De Minimis	Presumed Agriculture	No	--	--	Possible ag due to aerial photos. Not listed in county database. Not confirmed by local small ag. Listed as pistachios from Assessor's data.
62	John and Mary Hall	Unknown	Presumed Non De Minimis	Presumed Agriculture	No	--	--	Possible ag due to aerial photos. Not listed in county database. Not confirmed by local small ag.
63	Michael Kinne	Unknown	Presumed Non De Minimis	Presumed Agriculture	No	--	--	Possible ag due to aerial photos. Not listed in county database. Not confirmed by local small ag.
64	Pluto West Water Co (Dzandria Smith, Troy Braem)	Unknown	Presumed Non De Minimis	Domestic	No	--	--	County Database: 8 connection, 16 population served, not in State database
65	Potential Commercial Operation	Unknown	Presumed Non De Minimis	Commercial	No	--	--	Don Zdeba said potential dog boarding facility is operational.
66	Ricter, Michelle	Unknown	Presumed Non De Minimis	Presumed Agriculture	No	--	--	Listed on county database as ag well. Not confirmed by local small ag. Not shown in aerial photos.
67	Scott and Janis Bottorf	Unknown	Presumed Non De Minimis	Presumed Agriculture	No	--	--	Possible ag due to aerial photos. Not listed in county database. Not confirmed by local small ag.
68	Sophie Dodge	Unknown	Presumed Non De Minimis	Presumed Agriculture	No	--	--	Possible ag due to aerial photos. Not listed in county database. Not confirmed by local small ag. Listed as orchard from Assessor's data.
69	Vonschlemmer, Paul & Julie	Unknown	Presumed Non De Minimis	Agriculture	No	--	--	Local small ag confirmed. Not listed in county database. Local small ag confirmed. Not shown in aerial photos.
70	Del Sol Water Co-Op	Unknown	Presumed Non De Minimis	Domestic	No	--	--	Not listed in State database or Kern County database.
71	Domestic Water System	Unknown	Presumed Non De Minimis	Domestic	No	--	--	Not listed in State database or Kern County database.
72	Robert Dickson	Unknown	Presumed Non De Minimis	Unknown	No	--	--	Name listed in county database as a private well owner. Possible very small ag due to aerial photos. Not confirmed by local small ag. Listed as residence from Assessor's data.

**Indian Wells Valley Groundwater Authority**  
**Status of Compliance with Well Registration and Metering Requirements**  
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73	Sandy's Oasis Mobile Home Park	Unknown	Presumed Non De Minimis	Domestic	No	--	--	Not listed in State database or Kern County database. "Oasis Water System" listed in Kern County database as non public system with 4 connections.
74	Unknown Well Owner	Unknown	Presumed Non De Minimis	Domestic	No	--	--	Potential Pearsonville co-op/system.
75	Unknown Well Owner	Unknown	Presumed Non De Minimis	Domestic	No	--	--	Potential Pearsonville co-op/system.
76	Unknown Well Owner	Unknown	Presumed Non De Minimis	Domestic	No	--	--	Potential Pearsonville co-op/system.
77	Unknown Well Owner	Unknown	Presumed Non De Minimis	Domestic	No	--	--	Potential Pearsonville co-op/system.
78	Alan Woodman	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
79	Allen Katzenstein	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
80	Allen Lindfors	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
81	Angela Fulmer	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
82	Bill Corley	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
83	Bob Pyke	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
84	Brenda Hubbard	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
85	Brian Quick	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
86	Carol Schneider	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
87	Carolyn Fleming	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
88	Claude Stuler	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
89	Corazon Pajarillo (Oasis Water Co)	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
90	Craig Bare	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
91	Curtis Taylor	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
92	D. Paolin	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
93	Danica Novak	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
94	Daniel and Shirley Nelson	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
95	Daniel Warren	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
96	Daryl Weisbrich	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
97	Dave McPeters	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
98	David and Geraldine Wilson	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
99	David and Geraldine Wilson	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
100	David and Geraldine Wilson	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
101	David and Lacy Spencer	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
102	David Anderson	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
103	David Saint-Amand	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
104	Dell Etheredge	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
105	Diana Rodriguez	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
106	Donald Blachly	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.

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107	Donna Smiley	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
108	Ed Imsand	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
109	Ed Imsand	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
110	Edward Jeter	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
111	Edward Middlemiss	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
112	Elsa Hennings	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
113	Elsa Hennings	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
114	Eric and Kathy Bengtson	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
115	Everett Long	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
116	Fred Blomshield	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
117	Gary Cartmell	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
118	Genelle Valdivia	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
119	Greg Loda	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
120	Gregory Thornburg	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
121	Grover Bradley	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
122	Guy Garot	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
123	Harlen Kooima	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
124	Harvey Pierce	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
125	Helga Scow Williams	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
126	Henry Hess	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
127	Howard McMauley	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
128	Hubert and Sondra Drake	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
129	Jack Tipton	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
130	James and Katherine Baldwin	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
131	James Johnston	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
132	James Lloyd	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
133	James Manion	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
134	James Murray	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
135	James Tidwell	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
136	James Van Devender	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
137	Jesse Deshazer	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
138	John Ayers	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
139	John Baker	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
140	John Gorman	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
141	John O'Gara	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
142	John Prescott	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
143	Joshua Park	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
144	Karen Sizemore	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
145	Kathleen Moe	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
146	Keli Fortune	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.

**Indian Wells Valley Groundwater Authority**  
**Status of Compliance with Well Registration and Metering Requirements**  
**August 2020**

No.	Name	Number of Wells	Category	Type of Use	Well(s) Registered?	Flow Meter Installed on Well(s)?	Meter Accuracy Tests Submitted?	Notes
147	Kelly Ayers	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
148	Ken Amster	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
149	Korin Jain	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
150	Kristi Cole-Smith	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
151	Larry Williams	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
152	Laurene Hewitt	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
153	Les Wood	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
154	Mark and Susan Mason	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
155	Mark Decker	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
156	Mark Lambert	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
157	Mark Mercer	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
158	Matthew Heckerson	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
159	Michael Aley	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
160	Michael and Victoria Beatty	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
161	Michele Newton	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
162	Micky Akers	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
163	Miguel and Maria Salgado	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
164	Mike West	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
165	Mits Hata	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
166	Nancy Karner-Lewis	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
167	Norma Carr	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
168	Orvis and Edna Powers	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
169	Owen Cosby	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
170	Patricia Hudson (BLUB Co-Op)	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
171	Patrick Croyle	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
172	Paul Decker	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
173	Paul VonSchlemmer	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
174	Peter Wolt	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
175	Peter Woodman	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
176	Rachel Woodard	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
177	Rayna Hobby	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
178	Richard Gleeson	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
179	Robert and Alice Campbell	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
180	Robert Brown	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
181	Robert Canning	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
182	Robert Dickson	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
183	Robert Malseed	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
184	Robert Westbrook	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
185	Ronald Smith	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.



**Indian Wells Valley Groundwater Authority**  
**Status of Compliance with Well Registration and Metering Requirements**  
**August 2020**

No.	Name	Number of Wells	Category	Type of Use	Well(s) Registered?	Flow Meter Installed on Well(s)?	Meter Accuracy Tests Submitted?	Notes
186	Stanley Mills	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
187	Stephan Harrison	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
188	Steven Luhn	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
189	Stuart Fields	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
190	Thomas Boggs	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
191	Thomas Boyd	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
192	Thomas Demay	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
193	Timothy Vaughan	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
194	Tom Marcus	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
195	Tom Williams	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
196	V.H Shull	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
197	Wendell and Elizabeth Walsten (Dune VII)	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
198	West and Irene Katzenstein	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
199	Willard Mouln	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
200	William Burns	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
201	William Lindenmeyer	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.
202	Wolf Lambrecht	1	De Minimis	--	Yes	N/A	N/A	Registered De Minimis Extractors are exempt from the metering requirements of Ordinance No. 01-20.

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# IWVGA ADMINISTRATIVE OFFICE

*STAFF REPORT*

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**TO:** IWVGA Board Members

**DATE:** August 21, 2020

**FROM:** IWVGA Staff

**SUBJECT: AGENDA ITEM NO. 17 - PUBLIC HEARING AND PROCEEDING ON AND BOARD'S CONSIDERATION AND POSSIBLE APPROVAL OF ORDINANCE 03-20 ESTABLISHING A BASIN REPLENISHMENT FEE AND ADOPTION OF RELATED CEQA FINDINGS**

## DISCUSSION

In June, this Board unanimously choose today as the time for a public hearing on a Basin Replenishment Fee (Replenishment Fee) to be set \$2,130 per acre foot. The proposed Replenishment Fee, which is described in the attached Engineer's Report, is a composite volumetric charge that will fund the first phase for the IWVGA's Groundwater Augmentation Project (\$2,112 per acre foot) and the associated costs for a Shallow Well Mitigation Project (\$17.50 per acre foot).

All of the data supporting the need for the fee (which includes the adopted GSP and related reports) and the estimations supporting this fee (which includes the Capitol Core Report of August 2019 and pumping chart) have been posted on the IWVGA website and available for public comment and review for almost a full year now. Additionally, the information has been before the Board and both the Committees for comment on more than one occasion.

As the Board is aware, the adopted GSP shows that the Basin's Sustainable Yield, even in combination with an optimized recycled water program, is insufficient to meet the water needs of the Basin that could/should be classified as permanent needs. Additionally, it should be noted that since the use of brackish water is not new water to the Basin, the use of brackish water will not actually address the overdraft problem. As such, the IWVGA must rely on imported supplies to meet its current needs. Moreover, without import supplies and the related infrastructure, the Communities future economic growth and development will be significantly hampered because of the lack of a water supply for that growth and development.

The GSP's analysis has determined that the decades of severe overdraft and inaction have already significantly damaged the Basin. Recent Basin model runs have demonstrated the need for urgent and significant actions to preserve the community and bring the Basin into Sustainability as required by SGMA. In fact, it is projected that without immediate action as many as 22 small domestic wells will be significantly damaged and/or will go dry within roughly the next 4 to 5 years and this rate will only increase with time. Moreover, the Baseline Model, which includes an optimized recycled water program, projects that without action to cure the severe overdraft, the Basin's infrastructure will not be able to produce the needed groundwater in less than 45 years (2065).

As already mentioned, the Replenishment Fee is in part made up of estimated costs for the first phase of the IWVGA's Groundwater Augmentation Project. The first phase achieves two interrelated goals that must be achieved before the final design factors for an import program can be completed and a construction phase can begin. The adoption of the Fee not only provides funding for a purchase but it also very importantly provides the Authority with a clear understanding and firm estimation of the true need for an import water supply. Simply put, until the cost to purchase import water is actually assessed and paid by those needing/wanting it, the IWVGA does not have the appropriate information to formally design import infrastructure, because many of the design factors are dependent on purchase factors. Moreover, given the costs to design and build the needed import infrastructure, it would be imprudent at best to design said infrastructure prior to firming up the true need estimation.

As more specifically explained in Engineer's Report and importantly Exhibit B to the Report, the purchase costs are a one-time cost and they are correlative per acre foot so increases, or decreases, in the final project size have very little if any effect on the per acre foot purchase cost analysis. Accordingly, the actual amount of needed import supply could be less if those holding what are believed to be a permanent needs obtain water from a source other than the Basin's groundwater. As example, if Searles Valley Mineral is able to lower its presumed demand and/or use water from a source other than this Basin, then Searles Valley Mineral's total costs would be reduced and the IWVGA will not need, and will not purchase as much import water. Likewise, the Indian Wells Valley Water District can lower its costs by lowering its demands through alternative means such as conservation efforts.

Accordingly, the required first step and only true estimate for the potential import demands is to set the Fee at the actual projected costs and then adjust the ultimate import needs based on actual annual pumping that needs an import supply for replenishment. In fact, the IWVGA has already experienced a situation with the GSP Fee which was originally based on reported pumping needs that never actually materialized. One pumper in particular (Meadowbrook Dairy) has expressly stated that it lowered their demands (and expressly claimed that others had as well) because of the GSP Fee, which at the time was only set at \$30 per af. As a result, the only prudent course is to set the fee at the amount needed and then adjust the importation purchase as dictated by the rate payers' willingness to rely on import water or reductions in their needs.

Likewise, because the Shallow Well Mitigation Project is based on damages created by overdraft pumping the correlative nature of the Fee addresses any fluctuation in anticipated pumping.

As also provided for in the Report, De Minimis extractors and Federal extractors are exempt from the Replenishment Fee. The Navy has asserted that its water needs include the off-Station demands for its workforce and their dependents, so it is presumed that the Navy will supply water to its workforce through those off-Station water providers in accordance with the following chart for Authority fiscal year January 1, 2021 to December 31, 2021. Moreover, it should be noted that the following chart in its substantive form has been available for public comment for almost a full year and it has been before the Board and both Committees for comment on more than one occasion.

The chart uses a current estimation/reporting of the Navy's on-Station pumping. It should be noted, however, that in upcoming years, if the Navy's on-Station needs increase, the carryover will decrease accordingly and additional augmentation supplies will be needed for the Basin. As example, the Navy

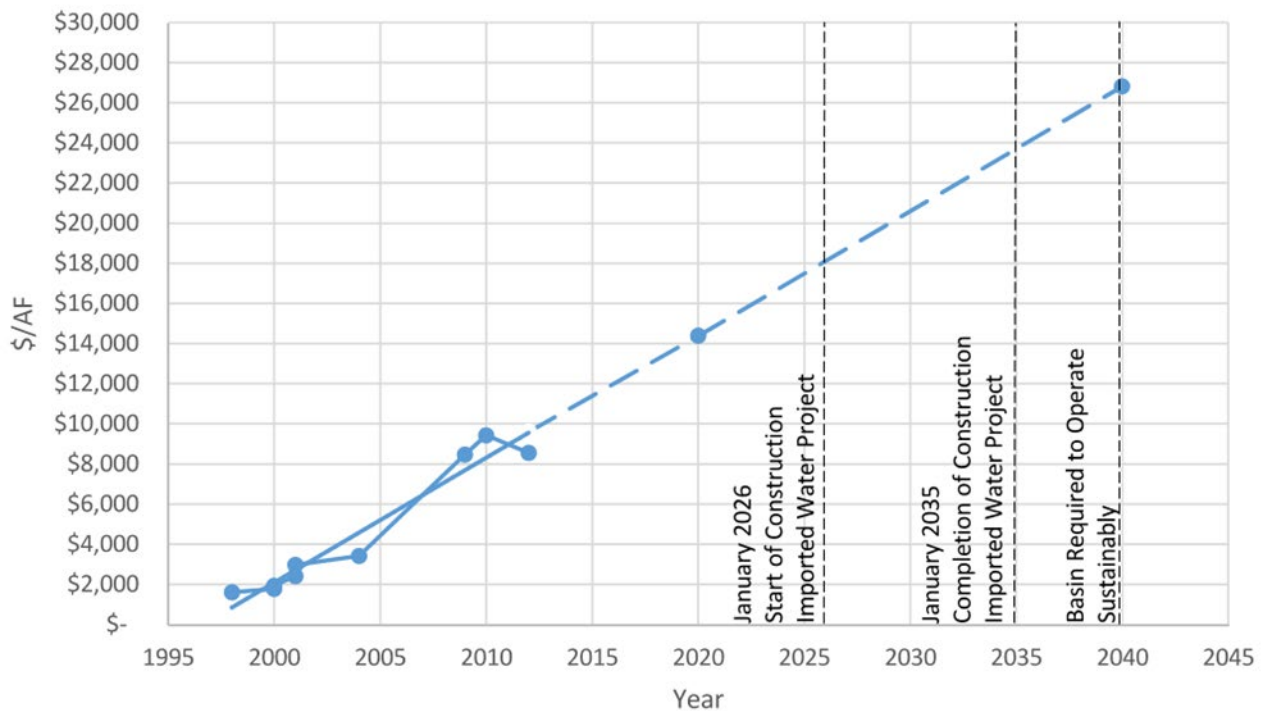
has reported a near term future growth plan which will bring the on-Station need to 2,041 af. If, and when, that growth comes about, the carryover will decrease by 591 af and the needed estimated augment supply will increase to 5,121 af. The opposite could also be true and if the Navy’s on-Station needs decrease rather than increase.

<b>Pumping Group</b>	<b>Current Est Pumping</b>	<b>Navy Use/Carryover</b>	<b>Est Augment Supply Need</b>
<b>Navy</b>	<b>1,450</b>	<b>1,450</b>	<b>0</b>
<b>De Minimis Wells</b>	<b>800</b>	<b>800</b>	<b>0</b>
<b>City of Ridgecrest</b>	<b>373</b>	<b>373</b>	<b>0</b>
<b>Kern County</b>	<b>18</b>	<b>18</b>	<b>0</b>
<b>IWVWD</b>	<b>6,507</b>	<b>4,390</b>	<b>2,117</b>
<b>Inyokern CSD</b>	<b>102</b>	<b>102</b>	<b>0</b>
<b>Small Mutuals</b>	<b>300</b>	<b>300</b>	<b>0</b>
<b>Trona Domestic</b>	<b>217</b>	<b>217</b>	<b>0</b>
<b>SVM</b>	<b>2,413</b>	<b>0</b>	<b>2,413</b>
<b>Total</b>	<b>12,180</b>	<b>7,650</b>	<b>4,530</b>

The carryover has not been adjusted on a proportional basis across the domestic providers for several reasons including but not limited to several principles of California Water law, Water Code section 106 in particular and the fact that the Basin’s “commercial” demands are almost exclusively found within the IWVWD. Some have claimed that the carry over should not be applied to Trona based on an argument that no base personnel live in Trona, but that argument is expressly contradicted by the Navy’s comment letter. Notably, the 2015 Urban Water Management Plan for the IWVWD provides that approximately 15% of its production is used by commercial/institutional users. In coming fiscal years, this chart may be subject to adjusted to account for changes in pumping, consolidation of water providers, and/or other factors deemed necessary and appropriate for adjustment by the Authority.

If an entity needing import supplies would like the benefit of a ramp up or an extended payment period that entity could, and probably should, immediately seek outside financing to achieve that goal. Importantly, such an action will not only lower the initial fee impact, it will most likely lower the initial purchase costs which are likely to only increase in the coming months and years as numerous basins throughout the State adjust to SGMA. The following chart shows a projection of future costs based on the most recent purchases of Table A Water. The chart is reflective of actual yield to the Basin from a purchase and as such the State Water Project’s reliability factor of 0.62 is factored into the estimated purchase price rather than the amount of water purchased.

## Cost of State Water Project Wet Water Yield From Permanent Entitlement Transfers



### Notes

- \$/AF reflects price for actual wet water yield based on running long-term average of State Water Project deliveries.
- Water transaction prices for State Water Project permanent entitlement transfers available from 1998 to 2012.

It should also be noted that, because the cost per acre foot for imported water is correlative, the size of the project is irrelevant to the per acre foot charge and any increase, or decrease, in the amount of water needed will be adjusted without any need to change the fee or the estimate analysis in the Report. To illustrate the point, let's presume an import supply of only 100 acre foot per year is needed. In that case, the cost calculation would be as follows:  $100/.62$  (needed 100 af divided by the State reliability factor of .62) x \$6,500 (estimated purchase cost based on actual recent sales) = \$1,048,387 (total purchase cost). Alternatively, this calculation can be done on yield basis as follows:  $100$  (needed yield) x  $\$6,500/.62$  (estimated purchase cost based on actual recent sales divided by the State reliability factor of .62) = \$1,048,387 (total purchase cost). In either case, the total purchase cost of \$1,048,387 is then divided by the 100 acre foot need and the five year payment period for a total of \$2,097 per acre foot ( $\$1,048,387/100/5 = \$2,097$ ). The additional \$15 in the Report to achieve \$2,112 per acre foot is reflected in five years' worth of administration costs.

Qualified groundwater extractors not listed on the chart will have the opportunity to either take part in the Transient Pool and Fallowing Program or continue their use through the payment of the Replenishment Fee and while applicable the Water Code section 10730 extraction fee. New groundwater extractors and/or those that have not qualified for the Transient Pool and Fallowing Program may continue to extract groundwater from the Basin subject to the payment of the Replenishment Fee, and while applicable the

Water Code section 10730 extraction fee.

Staff has reviewed the matter and determined that the Board's proposed action today is exempt from further environmental review on several grounds. Among those is a determination that this action is exempted from further review by SGMA and that the action is not a project, is mandated by law, is ministerial, does not include a discretionary act, will not have a significant effect on the environment, and is provided statutorily and categorical exemptions. Specific attention is drawn to California Public Resources Code section 21080(b)(8) and CEQA Guidelines section 15273(a) which provides express exemptions from further environmental review for this action. Additional attention is drawn to CEQA Guidelines section 15061(b)(3) which exempts non-projects and section 15321 which exempts enforcement actions. Furthermore, this action is exempt because it involves administrative activities that will not result in direct or indirect physical changes in the environment as provided for in CEQA Guidelines section 15061(b)(3) and 15378(b)(5). Moreover, this action is exempt from further environmental review pursuant to CEQA Guidelines section 15307 and 15308 as it's an action by a regulatory agency to assure the maintenance, restoration, enhancement or protection of the environment and natural resources.

Staff has ensured the mailing of 19,952 notices to each parcel in the last equalized tax rolls. A majority protest will exist if 9,977 protests are filed. With that said, pursuant to the recent California Supreme Court decision in *City of San Buenaventura v. United Water Conservation District*, the application of the Majority Protest proceedings is uncertain at best. Nonetheless, in the interest of public disclosure and participation, the IWVGA has conducted these proceedings in accordance with those Majority Protest proceedings. This fact should not be interpreted to mean that the IWVGA believes, or has determined, that the Majority Protest proceedings are legally mandated.

### **RECOMMENDED BOARD ACTION(S)**

Therefore, it is recommend that the Board:

- 1) Open the public hearing and take comment;
- 2) Close the public hearing and look to staff regarding protest count;
- 3) If appropriate determine that the Majority Protest threshold has not been met;
- 4) Consider Ordinance No. 03-20 and make finding that as set forth in the staff report the action is exempt from further CEQA review because the action is ministerial, does not include a discretionary act, is mandated by law and is provided statutorily and categorical exemptions, and will not have a significant effect on the environment;
- 5) Adopt Ordinance No. 03-20 setting the Basin Replenishment Fee.

**BEFORE THE BOARD OF DIRECTORS OF THE  
INDIAN WELLS VALLEY GROUNDWATER AUTHORITY**

---

**In the matter of:**

**Ordinance No. 03-20**

**ESTABLISHMENT OF A BASIN  
REPLENISHMENT FEE**

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I, \_\_\_\_\_, Clerk of the Board of Directors for the Indian Wells Valley Groundwater Authority, do certify that the following ordinance, on motion of Director \_\_\_\_\_, seconded by Director \_\_\_\_\_, was duly passed and adopted by the Board of Directors at an official meeting this 21st day of August, 2020, by the following vote:

**AYES:**

**NOES:**

**ABSENT:**

\_\_\_\_\_  
Clerk of the Board of Directors  
Indian Wells Valley Groundwater Authority

---

**THE BOARD OF DIRECTORS OF INDIAN WELLS VALLEY GROUNDWATER AUTHORITY  
ORDAINS AS FOLLOWS:**

**Section 1.** This Ordinance shall become effective 30 days from the date of adoption and the complete Ordinance shall be published in accordance with Californian Government Code section 25124.

**Section 2. Definitions.** As used in this Ordinance, the following terms shall have the meanings stated below:

**2.1 “Authority”** means the Indian Wells Valley Groundwater Authority.

**2.2 “Basin”** means the Indian Wells Valley Groundwater Basin which is designated as basin number 6-54 in Department of Water Resources’ Bulletin No. 118.

**2.3 “De Minimis Extractor”** shall have the same meaning set forth in California Water Code section 10721(e).



**2.4 “Groundwater Extraction Facility (Facilities)”** means any device or method for the extraction of groundwater from the Basin.

**2.5 “Small Mutuals”** means small water companies that provide domestic water services.

**2.6 “Trona Domestic”** means the domestic service provided to Trona by the Searles Valley Domestic Water Company.

**Section 3. Basin Replenishment Fee.** Effective January 1, 2021, and unless otherwise expressly prohibited by law, all groundwater extractions from, and within the Basin, with the exception of Federal and De Minimis extractions, shall be subject to measurement and the payment of Basin Replenishment Fee of \$2,130.00 per acre foot, or portion thereof, of groundwater extraction.

Notwithstanding the foregoing, beginning January 1, 2021, the following chart shall be used and provide the listed entities with a pumping allotment that is not subject to the Basin Replenishment Fee.

<b>Pumping Group</b>	<b>Exempted Pumping Allotment</b>
<b>City of Ridgecrest</b>	<b>373</b>
<b>Kern County</b>	<b>18</b>
<b>IWVWD</b>	<b>4,390</b>
<b>Inyokern CSD</b>	<b>102</b>
<b>Small Mutuals</b>	<b>300</b>
<b>Trona Domestic</b>	<b>217</b>
<b>SVM</b>	<b>0</b>
<b>Total</b>	<b>7,650</b>

In coming fiscal years, this chart may be subject to adjusted to account for changes in pumping, consolidation of water providers, and/or other factors deemed necessary and appropriate for adjustment by the Authority.

**Section 4. Basin Replenishment Fee Payment.** Beginning February 15, 2021, and every month thereafter on, or before, the 15<sup>th</sup> day of the month, those pumpers subject to the Basin Replenishment Fee shall submit payment for the prior calendar month’s extractions.

Any groundwater pumper with an Exempted Pumping Allotment that is subject to the Basin Replenishment Fee has the right to schedule a monthly estimated payment plan for the upcoming calendar year. In this instance, the groundwater pumper’s total groundwater extracted for the prior calendar year shall be used as the estimated pumping for the upcoming year. The Exempted Pumping Allotment is then deducted from the estimated annual pumping to determine the pumper’s estimated annual groundwater extractions subject to the Basin Replenishment Fee. The annual estimated groundwater extractions subject to the Replenishment Fee will then be divided by twelve (12) to determine an equal monthly payment plan for the upcoming calendar year.

No later than February 1 of the following year, the groundwater pumper’s total annual extractions for the prior year shall be compared to the pumper’s estimated annual groundwater extractions to

determine if the pumper paid more or less based on actual pumping. Any underpayment shall be paid within thirty (30) days receipt of written notice of the underpayment. Any over payment shall be reimbursed or credited to the pumper and deducted from future Basin Replenishment Fees owed.

**Section 5. Violations.** Anyone that violates any provision of this Ordinance shall be subject to possible civil penalties and civil action by the Authority. The Authority's civil penalties and civil action rights are an additional right to those rights which may otherwise be prescribed by Law.

**Section 6. Delinquent Accounts.** As prescribed by California Water Code section 10730.6, if the owner and/or operator of a Groundwater Extraction Facility knowingly fails to pay the Basin Replenishment Fee within thirty (30) days of it becoming due, it is delinquent and the owner and operator shall be liable to the Authority for interest at a rate of one (1) percent per month on the delinquent amount of the Groundwater Extraction Fee and a ten (10) percent penalty on the delinquent amount.

As an additional remedy, the Authority may, after a public hearing, order an owner and/or operator to cease extraction of groundwater until all delinquent fees, interests and penalties are paid. In such an instance, the Authority shall give notice to the owner and/or operator by certified mail not less than 15 days in advance of the public hearing.

These above cited rights are additional rights to those rights which the Authority may otherwise be prescribed by law.

**Section 7. Owner Responsibility.** The owners of Groundwater Extraction Facilities are ultimately responsible for the payment of all Groundwater Extraction Fee charges, interest and penalties should an operator fail to abide by the provisions of this Ordinance.

**Section 8. New Groundwater Extraction Facilities.** Groundwater Extraction Facilities constructed after the effective date of this Ordinance shall comply with the requirements set forth in this Ordinance.

**Section 9. Severability.** Should any provision of this Ordinance, or its application, be determined by a court of competent jurisdiction to be unlawful, unenforceable or otherwise invalid, that determination shall have no effect on any other provision of this Ordinance and to that end, the provisions hereof are severable.

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# **Indian Wells Valley Groundwater Authority**

**Engineer's Report For the**

**Adoption of a**

**Basin Replenishment Fee**

**June 18, 2020**



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Appendix A: 2019 Equalized Tax Roll for Kern County

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Appendix C: 2019 Equalized Tax Roll for San Bernardino County

## Definitions

**Augmentation Project** = Project described in Section 6.0

**Authority** = Indian Wells Valley Groundwater Authority

**Basin** = Indian Wells Valley Groundwater Basin

**De Minimis Extractors** = A person who extracts, for domestic purposes, two acre-feet or less of groundwater per year (California Water Code Section 10721(e))

**GSA** = Groundwater Sustainability Agency

**GSP** = Groundwater Sustainability Plan

**IWVGA** = Indian Wells Valley Groundwater Authority

**IWVGB** = Indian Wells Valley Groundwater Basin

**Mitigation Project** = Project described in Section 7.0

**Replenishment Fee** = Fee described in Section 8.0

**SGMA** = Sustainable Groundwater Management Act

**Sustainable Yield Report** = Report on the Indian Wells Valley Groundwater Basin's Sustainable Yield of 7,650" (draft of which is included and incorporated as Exhibit A)

**Water Marketing Memo** = Indian Wells Valley Groundwater Authority Water Marketing Strategy Technical Memo of August 2019

## 1.0 Purpose

This Engineer's Report (Report) is prepared in accordance with California and Federal law. Its purpose is to provide for, and describe, the estimated costs to be funded by the Indian Wells Valley Groundwater Authority's (IWVGA or Authority) Basin Replenishment Fee (Replenishment Fee). The proposed Replenishment Fee is a composite volumetric charge that will fund the IWVGA's Groundwater Augmentation Project (Augmentation Project) and Shallow Well Mitigation Project (Mitigation Project).

The Augmentation Project will bring imported surface water into the Indian Wells Valley Groundwater Basin (IWVGB or Basin), while the Mitigation Project will mitigate the impacts to shallow wells from the continued overdraft of the Basin during the purchase, design and construction phase of the Augmentation Project. For simplicity and efficiency, it is recommended that these two separate costs centers, which are properly charged to the same individuals on the same per acre foot basis, be combined into the one composite charge named the Basin Replenishment Fee.

California law requires that the costs of these Projects be identified and equitably distributed in accordance with, and proportionate to, the special benefits derived from the projects and, as such, the costs and funds for each Project will be accounted for and analyzed separately.

As more thoroughly provided for in the IWVGA's "Report on the Indian Wells Valley Groundwater Basin's Sustainable Yield of 7,650" (Sustainable Yield Report)(a draft of which is included and incorporated as Exhibit A), De Minimis extractors, as defined by the Sustainable Groundwater Management Act (SGMA), and Federal extractors will not be charged the Replenishment Fee. Federal law prohibits the IWVGA from regulating and/or charging the Federal extractors, regardless of the special benefits provided to those lands. De Minimis extractors are exempted because SGMA has excluded them from extraction fees by excluding them the metering and reporting requirements of SGMA.



## 1.1 General Summary

The IWVGA is the exclusive Groundwater Sustainability Agency (GSA) for the Basin. As such, the Sustainable Groundwater Management Act (SGMA) requires IWVGA to adopt, monitor, and implement a Groundwater Sustainability Plan (GSP) that achieves Basin sustainability by no later than 2040.

After considerable public examination of the technical data by the IWVGA Board and two separate committees, it has been determined that the Basin's sustainability cannot be achieved through pumping reductions alone because the annual sustainable yield of 7,650 acre-feet (af) is insufficient to meet the Basin's most minimal needs; let alone the possible and/or probable needs of the Basin, which require an anticipated minimum importation of at least 5,000 af annually.

The Augmentation Project costs reflect the anticipated costs to provide imported water supplies to those lands that must rely in part, or in whole, on imported water supplies. In general, the Augmentation Project costs can be naturally broken down into two phases; the first phase is the water purchase component and the second phase is the transportation infrastructure component. This Report focuses on the water purchase component. The transportation infrastructure component is presently uncertain and not addressed because there are two possible construction alternatives and it's anticipated that grant funding, and/or possibly voluntary federal funding, will help mitigate the ultimate construction costs. Accordingly, this Report estimates a total purchase cost of \$52,422,500 million dollars for the needed 5,000 af import supply. Given the urgency and the current and anticipated water markets, it is highly recommend that the IWVGA obtain this water purchase before no later than the end 2025 and even sooner if at all possible as it is highly likely that the costs of water will only increase in coming years as Basin's adjust to SGMA. The related costs for Project administration/negotiation/legal is estimated to be at least \$377,500 over the five year period, bringing the total estimated costs to \$52,800,000; which, when split over a five year period, equates to a per acre foot extraction charge of \$2,112.

The Mitigation Project costs reflect the anticipated costs to provide the necessary funds to mitigate the impacts on shallow wells as a result of the continued over drafting of the Basin. While this is a separate fee with a separate cost analysis, this Fee is paid by the same group as the Augmentation Fee and the anticipated costs are rather linear and generally increase in direct correlation to the amount of overdraft pumping. This report estimates that the costs of the described Mitigation Project equates to a per acre foot extraction charge of \$17.50.<sup>1</sup>

While these two cost centers represent separate fees that must be tracked and accounted for separately, for charging simplicity and efficiency, this Report recommends that these two separate costs centers be combined into one composite charge named the Basin Replenishment Fee, which should be set at \$2,130 per acre foot of groundwater extracted from the Basin.

De Minimis extractors and Federal extractors are exempt from the Replenishment Fee. Likewise, those that have permission to extract unused portions of the Navy's estimated Federal Reserve Water Right interest (carry over extractions) shall not be subject to this Replenishment Fee for those carry over extractions.

## 2.0 Basin Background

### 2.1 Basin Location

The Basin, as depicted in Figure 2-1, is remotely located in the northwestern part of the Mojave Desert in southern California. The Basin boundaries, which are determined by the State of California (State) in Bulletin 118, underlie approximately 382,000 acres or approximately 600 square miles of land area. The boundaries of the Basin are primarily within the County of Kern but they also extend into portions of Inyo and San Bernardino Counties.

The Basin is bordered on the west by the Sierra Nevada Mountain Range, on the north by the Coso Range, on the east by the Argus Range, and on the south by the El

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<sup>1</sup> While those taking part in the Transient Pool program are subject to these costs, they will pay for them as part of their Transient Pool agreement and as such they will not be charged the Replenishment Fee.

Paso Mountains. Surface water flow from the surrounding mountain ranges drains to China Lake, a large dry lake, or playa, located in the central north-east part of the Basin. U.S. Route 395 and State Route 14 are the major vehicular arteries through the Indian Wells Valley area.

## 2.2 Basin Water Supplies

The Basin presently lacks the needed infrastructure to provide landowners with access to imported water supplies for either direct use and/or in lieu groundwater recharge. **As a result, Basin water users must rely upon groundwater as their sole water source.**

Residents of the Indian Wells Valley area are served groundwater through private domestic wells and/or by a connection to one of the two public agency water purveyors: the Indian Wells Valley Water District and the Inyokern Community Services District. Present estimates provide that this pumping equates to approximately twenty-three percent (23%) of the Basin's total current groundwater production, while the private domestic wells are estimated to account for roughly three percent (3%) of the total Basin groundwater production. The Indian Wells Valley Water District is the largest supplier of potable water in the Basin supplying roughly 14,000 service connections with potable water needs.

Searles Valley Minerals Inc. produces groundwater from the Basin for use in its minerals recovery and processing operations in the Searles Valley (located east of the Basin boundaries) and for ancillary potable use in the small communities of Trona, Westend, Argus, and Pioneer Point in the Searles Valley. In addition, a number of farms located in the Indian Wells Valley area rely on the Basin's water supplies for their agricultural operations, including Meadowbrook Dairy, Mojave Pistachios, Simmons Ranch, Quist Farms, and other smaller farms.

The United States Navy has produced water from the Basin since the development of the Naval Ordinance Test Station in 1943. The development included the construction of hundreds of industrial and residential buildings, roads, runways, and other necessary

infrastructure components. As development by the Navy continued, more groundwater wells were drilled to supply the increased water demands. Most of the Indian Wells Valley's new permanent residents were associated with the naval operations and lived on Navy property during the 1940s, and into the 1970s. The growth of the naval operations led to the incorporation of the City of Ridgecrest in 1963.

The Navy has reported to the IWVGA that it made a "strategic divestiture" to spur Ridgecrest development and rapid Navy population shifts off-Station in 1970. Since then, the Navy has reported a reduction of nearly ninety-five percent (95%) of its on-Station family dwelling units from 2,916 units in 1972 to 192 units in 2019. This drastic and purposeful population shift off-Station transferred Navy water demands from personnel living quarters on-Station to the off-Station water providers in the Ridgecrest community and those individuals that invested in their own wells to meet their own domestic needs off-Station.

The following Figure 2-2 graphically illustrates the shift in water demands from the Navy to the Ridgecrest Community, through the depiction of water demands by the Indian Wells Valley Water District.

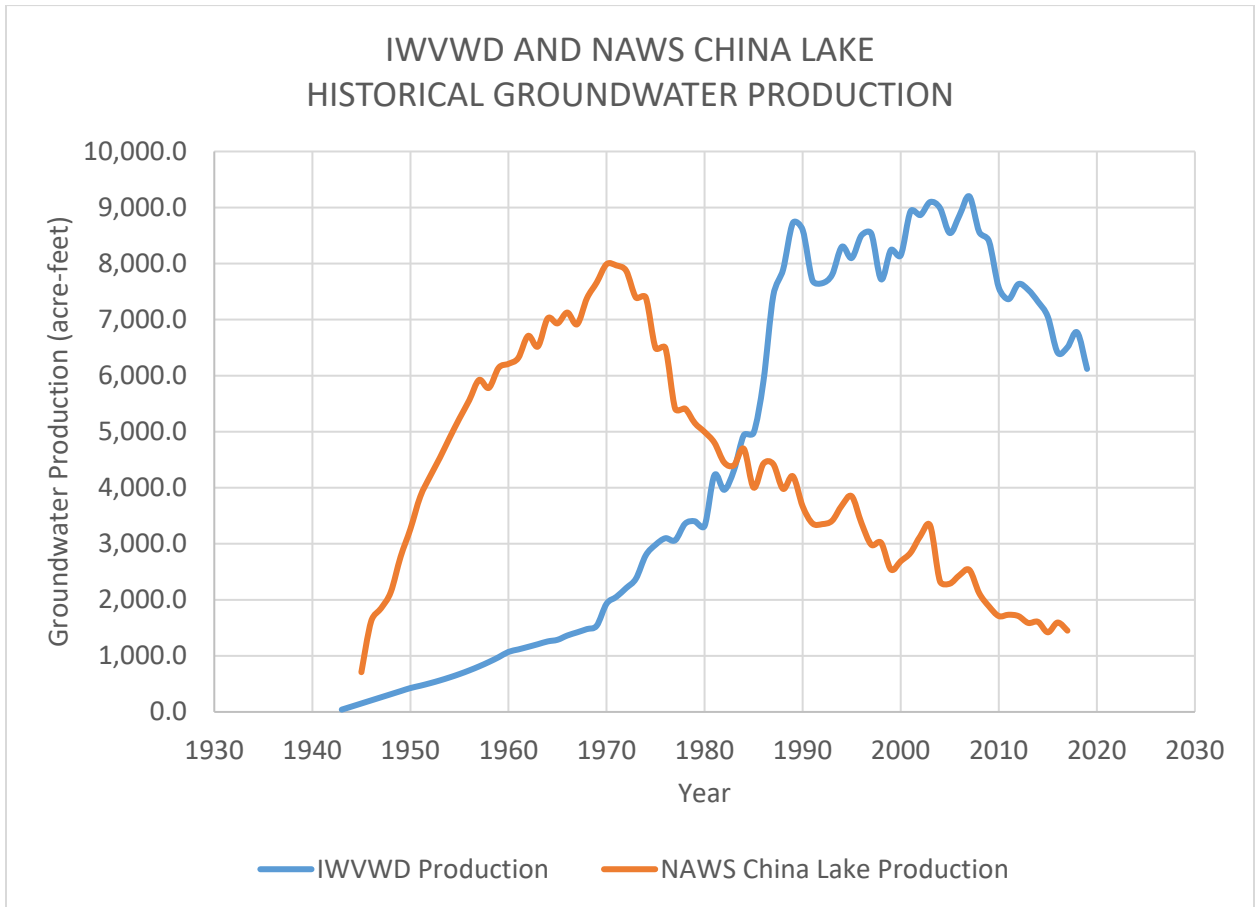


Figure 2-2: IWWVD and NAWS China Lake Historical Groundwater Production

### 2.3 Basin's Sustainable Yield of 7,650 af

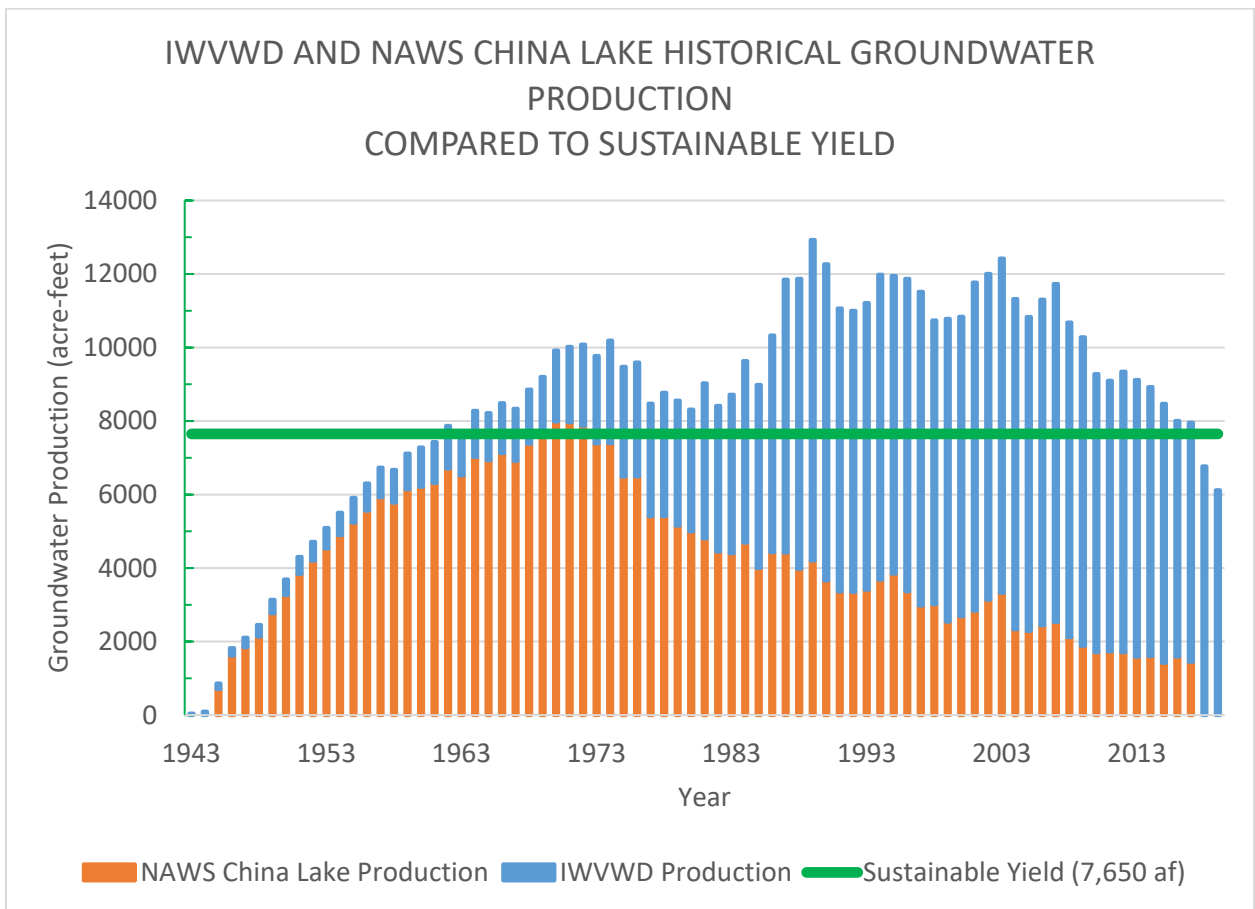
Streams and other surface waters in the Basin are generally ephemeral due to low annual precipitation in the Indian Wells Valley area, and Basin recharge occurs as mountain block recharge. Consequently, surface water resources in the Basin are limited, if not nonexistent.

After considerable public examination of the technical data by the IWVGA Board and two separate committees, the IWVGA has determined that the Basin's sustainable yield is 7,650 acre-feet (af).

## 2.4 Basin's Current Condition

The Basin has been significantly studied and voluntary pumping documentation has occurred over the last 70 years. For roughly the 20 years preceding SGMA, the Basin was monitored by the Indian Wells Valley Cooperative Groundwater Management Group.

As graphically shown below in Figure 2-3, the sustainable yield of 7,650 af has been exceeded for nearly 60 years by the pumping demands of the Navy and the Indian Wells Valley Water District alone.



*Figure 2-3: IWWVD and NAWS China Lake Historical Production Compared to Basin Sustainable Yield.*

The results of the prolonged overdraft have already manifested themselves through various undesirable results, primarily the chronic lowering of groundwater levels, the degradation of water quality, and the reduction of groundwater in storage throughout the Basin. Undesirable results have manifested themselves throughout the Basin, including:

- Reduction of buffer from loss of production for deeper wells, both for municipal/domestic use, industrial use, and agriculture use
- Impacts to shallow wells due to lowering of groundwater levels and/or degraded water quality, which would require deepening, replacement, well abandonment, or treatment
- Encroachment on mission of NAWS China Lake
- Damage to infrastructure including high value sensitive facilities at NAWS China Lake (For example, the SNORT alignment)
- Jeopardy to beneficial uses due to lowering of groundwater levels and degraded water quality including environmental uses, domestic supplies, industrial supplies, and agriculture supplies which could result in fallowing of agricultural land
- Financial impacts to all groundwater users and well owners for mitigation costs and supplemental supplies (including De Minimis groundwater users and members of disadvantaged communities)
- Increase of impacts caused by dust and desertification caused by declining water tables.

These severe overdraft conditions have existed for several decades as a result of historical groundwater pumping that exceeds the Basin's natural replenishment. The unregulated overdraft has resulted in Basin groundwater levels dropping in some areas by approximately 0.5 to 2.5 feet annually. With these stark historical conditions widely

known and understood, the Basin's severe burdens were further heightened by the recent addition of a new groundwater user that listed pumping needs almost equaling the Basin's entire sustainable yield and asserting that its water rights were superior to the needs of the Ridgecrest community.

The adopted GSP Baseline model run projects that, without change, the Basin's groundwater infrastructure will not be able to produce the needed groundwater by 2065.

## 2.5 Navy Federal Reserve Water Right

As more thoroughly provided for in the IWVGA's Sustainable Yield Allocation Report, long-standing principles of American jurisprudence and federalism, prohibit the IWVGA from charging, regulating and/or even investigating Navy claims, and/or the claims of any other Federal extractor in the Basin. As a result, the IWVGA is unable to charge these federal lands with any of the costs associated with an importation or mitigation project regardless of whether or not these lands are benefited. Additionally, the IWVGA has no legal authority to challenge any assertions, or lack thereof, made by the Navy.

Additionally, SGMA expressly recognizes that the IWVGA has no legal authority to require that the Navy provide any pumping information under existing law in Water Code section 10720.3(c), which expressly provides that any participation by the Navy shall be voluntary. SGMA further recognizes the Navy's Federal Reserve Water Right (FRWR) as distinct from water rights that are based in state law and directs that the FRWR be respected in full. Moreover, SGMA expressly provides that federal law shall prevail in the case of any conflict between federal and state law (Water Code Section 10720.3(d)). SGMA also directs that the IWVGA consider the interests of all beneficial uses and users of groundwater, listing the federal government, including, but not limited to, the military and managers of federal lands among those interests (Water Code Section 10723.2).

Given these legal principals, the IWVGA has been limited to repeatedly asking that the Navy provide its FRWR to assist in the determinations related to fees. The Navy has repeatedly declined to provide the requested information asserting its complete immunity



from regulation by the IWVGA. On June 17, 2019, the Navy again expressly rejected the IWVGA request and instead provided a report titled Navy Demographics and Water Requirements at Naval Air Weapons Station (NAWS), China Lake, CA (Navy Water Requirements Report), which makes the following assertions related to its FRWR:

- 1) The FRWR *IS NOT* limited to the current on-Station demand of 2,041 af.
- 2) The FRWR dates back to the establishment of the base in 1943.
- 3) The FRWR would likely be established, if ever, through litigation.
- 4) The water requirements of the Navy cannot be determined solely by the Navy's recent direct production amounts.
- 5) Since the Navy mission at NAWS China Lake requires its workforce, the full Navy water requirements are the combination of the on-Station requirements and those of the Navy workforce and their dependents off-Station.

Additionally, the provided report listed detailed historical pumping records which show that the Navy's extractions alone exceeded the Basin's sustainable yield for each of the four years between 1969 and 1972. Moreover, the provided report detailed that for nine years within the 11-year time period between 1964 and 1974, annual Navy extractions exceeded 7,000 af and for nearly two decades the Navy's extractions exceeded 6,000 af annually. As further discussed in the Sustainable Yield Allocation Report, and as shown above in Figures 2-2 and 2-3, Navy extractions only began to diminish once the Navy deliberately moved its personnel and the corresponding water use off base.

Accordingly, the Sustainable Yield Report concluded that the IWVGA is required to find that all groundwater extractors in the Basin, with the exclusion of De Minimis extractors and Federal extractors, are specially benefited by IWVGA's overdraft mitigation and augmentation projects, and therefore they will be subject to the costs for those

projects, unless an extractor obtains a court order showing they have quantifiable production rights superior to the Navy's.

## 2.6 Navy Federal Reserve Water Right Transfer

The Navy has expressly asserted in the Navy Water Requirements Report that the NAWS China Lake mission requires its workforce and as a result the full Navy water requirements are the combination of the on-Station requirements and those of the Navy workforce and their dependents off-Station. Accordingly, it is presumed that the Navy will provide its unused FRWR to those that supply water to its workforce through agreements with those water providers.

## 3.0 Indian Wells Valley Groundwater Authority

### 3.1 Formation

Due to the Basin's designation in 2016 as a critically overdrafted groundwater basin of medium priority<sup>2</sup>, the local agencies with jurisdiction in the Basin were required to establish a Groundwater Sustainability Agency (GSA) and publish an adopted GSP for the Basin by January 31, 2020. Accordingly, the Authority was formed on December 8, 2016, as a joint powers agency (JPA) among its General Members:

- City of Ridgecrest
- Indian Wells Valley Water District
- County of Kern
- County of Inyo
- County of San Bernardino

The formation of the JPA provided the IWVGA with all the authorities and powers provided to the three County General Members under California law and SGMA.

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<sup>2</sup> The Basin has since been identified as a critically overdrafted basin of **high** priority, as documented in the *Sustainable Groundwater Management Act 2018 Basin Prioritization: Process and Results*, published by the California Department of Water Resources in January 2019.

The United States Department of the Interior Bureau of Land Management (BLM) and the United States Navy Naval Air Weapons Station China Lake (NAWS China Lake) serve as Associate Members (non-voting) to the JPA. These non-voting members have no authority within the operations of the JPA and are provided no voting powers.

### 3.2 Mission

The IWVGA is the exclusive GSA for the Basin, and as such, it has jurisdiction over the non-federal lands within the Basin (see Figure 2-4) and it is required to adopt, monitor, and implement a Groundwater Sustainability Plan (GSP) that achieves Basin sustainability by 2040.

### 3.3 Organizational Structure

The IWVGA is governed and administered by a five member Board of Directors (Board), which is composed of one voting seat per General Member. BLM and NAWS China Lake each hold a non-voting Associate Member position on the Board. Although they do not have the power to vote on any Board action or proposal, nor may they attend closed sessions of the Board, the Associate Members are entitled to full participation in public Board meetings and discussions.

The Board Chairperson, Vice-Chairperson and General Counsel duties annually rotate in January, between the Board members representing the County of Kern, the City of Ridgecrest, and, the Indian Wells Valley Water District. At the time of this Report, the Chairperson and General Counsel duties are held by the County of Kern, and the Vice-Chairperson duties are held by the City of Ridgecrest.

The Board established a Policy Advisory Committee (PAC) and a Technical Advisory Committee (TAC) for the purpose of making recommendations to the Board on the Authority's daily activities. The PAC advises the Board on policy-related matters while the TAC advises on technical matters. Both the PAC and the TAC are comprised of members from local constituent groups (both private and public) that have an interest in the operations and decisions of the Authority.

### 3.4 Jurisdiction

The IWVGA's boundaries extend across the entire Basin and thus they include all of the non-federal and federal lands that overly the Basin. With that said, as is more thoroughly explained in the Sustainable Yield Report, the Supremacy Clause of the United States Constitution prohibits the IWVGA, and the State, from regulating federal lands and federal extractions and therefore the BLM and NAWS China Lake are exempt from any Basin projects charges, regardless of the project benefits provide to the those projects.

## 4.0 Authority Costs and Revenues

### 4.1 Historic Costs and Revenues

To date, the operations and costs of the IWVGA have almost exclusively been attributable to the adoption of the GSP. These operations have been funded by:

- 1) Initial member dues;
- 2) In-kind services provided by the General Members and the Navy;
- 3) Loans from the County of Kern and the Indian Wells Valley Water District;
- 4) State Grant funding through Proposition 1 and Proposition 68; and,
- 5) A Groundwater Extraction Fee of \$30 per acre foot.

### 4.2 Groundwater Extraction Fee

The IWVGA adopted the existing Groundwater Extraction Fee (GEF) under the authority of California Water Code Section 10730 on July 19, 2018. The GEF was specifically established to fund the costs of developing and adopting the Authority's GSP.

The GEF is presently charged at \$30.00 per acre-foot extracted and it is imposed on all groundwater extractions in the Basin, with the exception of De Minimis groundwater

extractors, which SGMA expressly excludes, and Federal groundwater extractors, which are excluded by federal law.

In accordance with California law, the existing GEF may only be used to cover the costs it was adopted for; in this case, the development of the IWVGA's GSP and as such it is often referred to as the GSP Fee.

It is acknowledged that the IWVGA has already funded some efforts to import water into the Basin, including efforts to achieve Federal funding for the needed importation infrastructure costs. These efforts, while initially needed in part for development and adoption of the GSP, are more appropriately charged to the importation project itself. As such, the costs for these efforts, which have been relatively minor, are, and have been, tracked and monitored by the IWVGA's General Manager and they are being funded through funds provided to the IWVGA by the Indian Wells Valley Water District. Likewise, the costs to provide this Report are being funded with non-GEF fees and they will be recouped from revenues from the Replenishment Fee.

The GEF was purposely set at a rate that was not expected to provide for the full costs of the GSP by the date of the GSP's adoption. The initial projections aimed for a GSP funding completion date of roughly the end of the 2020 water year. For reasons yet to be fully determined, the GEF has not met expectations because the reported pumping by several pumpers has been less than their claimed water demands and/or historic pumping levels.

Additionally, there have been some pumpers that have failed to meet their reporting and payment obligations under Ordinance 02-18. For the most part, the IWVGA has determined that these are relatively small pumpers with the notable exception of one; Mojave Pistachio which reported and paid for considerable pumping over several months only upon notice that the Board was about to considering removing their representative from the PAC and TAC. The IWVGA efforts to cure this defect have been understandably slowed in recent months, but in a 4 to 1 vote, with the Water District's Board member being the sole dissenting vote, the IWVGA Board voted to remove Mojave Pistachio's representative from the PAC and TAC at the April 2020 Board meeting.

Additionally, three significant pumpers in the Basin have threatened suit against the IWVGA's GSP and tolling agreements have been executed to delay such filings. In accordance with California Law, the costs for defending those claims and possible lawsuits will be funded with the GEF. As a result, the Board will be addressing needed increases in the GEF fee in a separate item to provide for both original assumption shortfalls, such as the reported/anticipated pumping shortfall, and the need to fund the anticipated litigation.

### 4.3 Post GSP Revenue Authority

SGMA provides for the collection of extraction fees to fund Authority projects. In particular, Water Code section 10730.2 expressly provides that:

- 1) A groundwater sustainability agency may impose fees on the extraction of groundwater from the basin to fund the costs of groundwater management, including, but not limited to, the following costs:
  - a. Administration, operation, and maintenance, including a prudent reserve.
  - b. Acquisition of lands or other property, facilities, and services.
  - c. Supply, production, treatment, or distribution of water.
  - d. Other activities necessary or convenient to implement the plan.
- 2) Fees imposed pursuant to this section shall be adopted in accordance with subdivisions (a) and (b) of Section 6 of Article XIII D of the California Constitution.
- 3) Fees imposed pursuant to this section may include fixed fees and fees charged on a volumetric basis, including, but not limited to, fees that increase based on the quantity of groundwater produced annually, the year in which the production of groundwater commenced from a groundwater extraction facility, and impacts to the basin.

- 4) The power granted by this section is in addition to any powers a groundwater sustainability agency has under any other law.

The relevant provisions of Section 6 of Article XIII D of the California Constitution provide both procedural and substantive requirements for the imposition of charges and fees. The procedural requirements are generally summarized as follows:

- 1) The parcels to be charged shall be identified.
- 2) The amount of the fee shall be calculated.
- 3) Notice shall be mailed to the record owners at least 45 days prior to the hearing.
- 4) The mailed notice shall provide:
  - a. The reason for the fee
  - b. Amount of the fee
  - c. The basis for the fee's cost calculations
  - d. The date, time and location of the public hearing
- 5) At the public hearing, the agency shall consider all protests against the proposed fee.
- 6) If written protests against the proposed fee are presented by a majority of landowners, the agency shall not impose the fee.

The substantive requirements of Section 6 of Article XIII D are generally summarized as follows:

- 1) Revenues derived from the fee may not exceed the funds required for the project.
- 2) Revenues derived from the fee may not be used for any purpose other than that for which the fee or charge was imposed.
- 3) The fee may not exceed the proportional for the project.
- 4) The fee may not be imposed for a service unless that service is actually used by, or immediately available to, the owner of the property. Fees based on potential or future use of a service are not permitted.

Accordingly, the Authority must identify the specific projects it desires to fund, estimate their costs, and, apply the charge to only those landowners that are conferred a “special benefit” by the specific project.

California law generally provides that a “special benefit” is defined per Article XIII, Section 2(i) of the California Constitution as “a particular and distinct benefit over and above general benefits conferred on real property located [within the Authority’s boundaries] or to the public at large.” Accordingly, general benefits, such as an increase in property value because an importation project allows further community development, are not chargeable under California law. In order to be subject to the costs of an importation project, the payer must directly benefit from the project.

Although there are many ancillary benefits to the Augmentation and Mitigation Projects, the primary benefits for parcels in the Authority’s jurisdiction is the ability to use water over and above the sustainable yield of the Basin. As previously mentioned, the IWVGA has determined that the Navy, an entity that the IWVGA cannot regulate or charge in anyway, has historical pumping demands that have exceeded the Basin’s sustainable yield. As a result, a volumetric pumping fee on all non-Federal extractors will meet both the proportionality and availability prongs of the California law.

## 5.0 Groundwater Supplies and Sustainability

### 5.1 Existing Water Supply Facilities

As previously mentioned, the Basin has been significantly studied and voluntary pumping documentation has occurred over the last 70 years. Additionally, for the roughly 20 years preceding SGMA, the Basin was monitored by the Indian Wells Valley Cooperative Groundwater Management Group.

As discussed in Section 2.4, it is undeniable that the Basin’s groundwater resources have not been sustainably managed and the results of the severe overdraft have already manifested themselves through various undesirable results such as the chronic lowering of groundwater levels, which have shown a decline of 0.5 to 2.5 feet annually in areas. Additionally, the severe overdraft has and will lead to the degradation



of water quality and the reduction of groundwater in storage throughout the Basin. Most importantly, the severe overdraft has lead the GSP Baseline model run to project that the groundwater infrastructure will be unable to produce the needed groundwater by 2065.

These severe overdraft conditions have existed for several decades as a result of historical groundwater pumping that exceeds the Basin's natural replenishment. With the exception of the Baseline model run, these stark historical conditions have been widely known and understood. And yet, the Basin's severe burdens were further heightened by the recent addition of a new groundwater user that listed pumping needs almost equaling the Basin's entire sustainable yield and asserting that its water rights were superior to the needs of the Ridgecrest community.

While the Indian Wells Valley Water District has in the past studied various options for augmenting the District's water supplies, to date there have been no sustained efforts to bring import supplies to the Basin. Notably, while the analysis was not the focus of this Report, the *IWVWD Board of Directors Alternative Water Supply Workshop of September 2012* provided an estimate for imported supplies that is in line the analysis and cost estimates in this Report.<sup>3</sup>

In sum, the Basin's supplies cannot meet the Basin's most minimal needs and there is presently no Basin infrastructure for importation. Adding additional complexity, the required infrastructure for importation could cost a hundred million dollars, or more, to build depending on the ultimate project and it's currently estimated to take 15 years to complete the needed infrastructure, or roughly one third of the forty-five (45) year period documented in the Baseline model run.

## 5.2 Augmentation Management Action

To mitigate the historical and existing conditions of Basin overdraft, the Authority has adopted a GSP (in accordance with SGMA) with a defined sustainability goal of: preserving the character of the communities relying on the Basin; preserving the quality

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<sup>3</sup> It should be noted that the water market and the urgency in obtaining supplies has only worsened since 2010 and therefore the cost increases are not just increase from 2010 to 2020 dollars

of life of those that rely on the Basin; and, sustaining the mission at Naval Air Weapons Station (NAWS) China Lake. Accordingly, the Authority's GSP was developed with the intent to mitigate local reliance on the Basin for all water supplies through the procurement of imported water supplies for either direct use and/or for in direct use through groundwater recharge. After considerable public examination of the technical data and careful consideration by the IWVGA, it has been determined that the Basin needs an importation infrastructure capable of bringing at least 5,000, and potentially as much as 20,000 af, of water to the Basin annually.

This level of importation reflects what is believed to be the minimum amount of water needed to achieve sustainability and sustain the community. As more thoroughly discussed in the Sustainable Yield Report, this level of water importation presumes the cessation of large-scale agricultural uses in the Basin but it does not prohibit or hinder such a use. In fact, future agricultural users are treated the same as all other, non-Federal users in the Basin.

The Authority currently does not own or operate any existing water supply facilities; therefore, the procurement of imported water supplies will require the acquisition of physical water supplies (with all required contractual and/or appurtenant water rights), as well as obtaining access to existing potable water conveyance facilities that are operated by agencies outside the Authority's jurisdiction. The Authority must then oversee the construction of new water supply infrastructure to provide the Authority's acquired water supplies to the Basin and it is estimated that such construction will take 15 years with import supplies not becoming available for use in the Basin until 2035.

It is anticipated that during the construction phase (roughly 2025 to 2035), the Authority will optimize the use of its purchased supplies through short-term transfers to willing purchasers with the monetary gains being used to assist in the construction funding. Alternatively, those purchased supplies could be held in storage for future use in the Basin once the importation project comes online.

Procuring an imported water supply will also require access to existing water conveyance facilities and the construction of additional infrastructure to bring imported

water to the Basin. The Los Angeles Department of Water and Power (LADWP) operates the Los Angeles Aqueduct (LA Aqueduct), which extends through the western portion of the Basin near the Freeman-Dixie Wash and the El Paso subarea. The LA Aqueduct conveys surface water runoff from the Eastern Sierra Nevada Mountains in Inyo County, as well as groundwater from the Mono Basin, to LADWP's service area in the City of Los Angeles. In addition, Antelope Valley East Kern Water Agency (AVEK) operates a potable water transmission pipeline (California City Pipeline) that terminates near California City, located approximately 15 miles south of the Basin boundaries and 50 miles south of the City of Ridgecrest.

### 5.3 Alternatives to Augmentation Project

#### 5.3.1 Basin Mining

Some have asserted that groundwater storage is the sole factor of importance and deepening impacted wells is the sole solution. The underlying premise in the assertion is that the Basin can be sensibly mined and damaged for a prolonged period of time. Assuming that sensible standard can be met, it is undeniable that deepening cannot go on forever and at some point imported infrastructure will be required. Additionally, such an unwarranted and indefinite mining of the Basin would jeopardize the approval of the GSP because SGMA expressly provides that the chronic lowering of groundwater levels is an undesirable result. In short, this assertion will gain some time for the direct benefit of a few (presumably a few that will then leave the Basin) but it will add millions in costs to the ultimate solution.

With that said, it is undeniable that the importation project mines the Basin for an estimated period of 15 years, albeit at a much reduced rate of overdraft, with the damages being mitigated through funded projects. Likewise, as set forth in the Transient Pool report, it is undeniable that the transient pool will mine the Basin in amount roughly equally to the amount of mining that will occur through the importation project and damages will be mitigated through funded projects. Importantly, without the reductions provided for in these programs, when the importation project begins water deliveries in 2035, the GSP

Baseline model would project that the Basin's groundwater infrastructure could only produce the needed water for 30 more years.

### 5.3.2 Wastewater Recycling

The Authority does not have any regulatory control over waste water treatment facilities in the Basin. As a result, the Authority cannot, and does not, include any cost analysis for recycled water projects in this Report. If and to the extent, the owners of a wastewater treatment facility are able to make use of the water treated in those plants to decrease their extractions from the Basin, they will naturally receive the benefit of that endeavor through lower extractions from the Basin and by extension lower fees. Moreover, the owners of the wastewater treatment facility can sell that treated water to others in the Basin who would in turn receive the same benefit.

## 6.0 Augmentation Project Costs

### 6.1 Purpose

The Augmentation Project has been developed to address the Basin's urgent need for augmented supplies to address the severe overdraft conditions and the Basin's inability to cure the overdraft through voluntary pumping reductions alone. After careful consideration and public examination by both the PAC and TAC, it has been determined that the Basin will need *at least* 5,000 af of imported water per year. Additionally, it has been determined that a permanent supply entitlement is needed because the types of uses reflected in the 5000 af need cannot rely on temporary and/or one time purchases.

As explained in the Indian Wells Valley Groundwater Authority Water Marketing Strategy Technical Memo of August 2019 (Water Marketing Memo), which is attached hereto and incorporated herein as Exhibit B, and the 2017 Department of Water Resources State Water Project Delivery Capability Report, the long term reliability of State Water Project deliveries is sixty-two percent (62%). Therefore, in order to achieve actual deliveries of 5000 af, the Augmentation Project would need to obtain permanent allocation of 8,065 af of water.

## 6.2 Revenue Requirements

The revenue requirements for the Augmentation Project can be naturally broken down into two separate phases. The first phase, which is the focus of this Report, is the actual purchase of the need water supplies. As previously mentioned, in order to obtain the needed delivery of 5,000 af, the IWVGA will need to purchase 8,065 af of permeant State Water Project allocation.

As set forth the Water Market Memo, given the recent transactions and trends it is assumed for the purposes of this Report that a permanent allocation will costs \$6,500 per acre foot. Therefore, the required revenue to purchase a permanent supply is assumed to be \$52,422,500. Given the urgency and the current and anticipated water markets in coming years due to SGMA implementation, it is highly recommend that the IWVGA obtain this water purchase before no later than the end 2025, and even sooner if at all possible as it is highly likely that the costs of water will only increase in coming years as Basin's adjust to SGMA.

In addition to the purchase costs, the administration/negotiation/legal costs for the Project will need to be funded. It is assumed that said costs will be at least \$377,500 over the five year period for an annual estimate of \$75,500 per year.

In sum, it is assumed for the purposes of this Report that the Augmentation Project revenue needs will total \$52,800,000, which, when split over a five year period, equates to a per acre foot extraction charge of \$2,112.<sup>4</sup>

## 6.3 Imposition and Exclusions

For the reasons more thoroughly described in the Sustainable Yield Report, the Augmentation Project costs shall be imposed on all groundwater extractors in the Basin with the exception De Minimis and Federal Extractors. Likewise, those that have permission to extract unused portions of the Navy's estimated FRWR (carry over extractions) shall not be subject to the Augmentation Project costs for those carry over

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<sup>4</sup> The funds collected for the Augmentation Project may also be used to fund the IWVGA Following Program which will preserve Basin supplies and in effect equate to a purchase of water supplies.

extractions. Transient Pool extractors by definition will not be subject to these costs as they will not need or use augmented supplies.

## 7.0 Shallow Well Mitigation Project

### 7.1 Purpose

As stated in SGMA, the IWVGA is required to mitigate locally defined undesirable results that are due to unsustainable groundwater management that has occurred in the Basin since 2015, and/or will occur in the future. The purpose of the Mitigation Fee is to fund shallow well mitigation efforts in order to mitigate the undesirable results occurring from the basin-wide chronic lowering of groundwater levels, reduction of useable groundwater in storage, and degradation of water quality.

Historically, groundwater levels near the primary Basin pumping area have been in decline. Groundwater levels in other locations such as those near recharge and discharge zones, as well as in the El Paso area (which is separated from the primary Basin aquifer by a fault) remain more stable. In areas where groundwater levels have been steadily declining, shallow wells have been impacted to the extent that well deepening and/or redrilling is required, or the shallow well must be abandoned as a water source. Additionally, shallow wells have been historically impacted due to the migration of poor-quality groundwater in areas with previously high-quality groundwater.

An analysis was conducted for approximately 872 shallow wells in the Basin (832 domestic/private wells, 40 mutual water company wells, and community service district wells) for potential impacts during the implementation of the GSP. The shallow well impact analysis results indicated that most shallow wells would experience minimal drawdown, but that approximately 22 shallow wells would require mitigation due to the chronic lowering of groundwater levels and reduction of groundwater in storage in the Basin within the GSP planning horizon. These 22 shallow wells are anticipated to be impacted within the next few years. Additionally, shallow wells may require mitigation due to the migration of poor-quality groundwater to areas with previously high-quality groundwater.

The IWVGA will prepare a Shallow Well Mitigation Plan to address the approximately 872 shallow wells in the Basin that have been or may later be impacted by the lowering of regional and local groundwater elevations, the reduction of useable groundwater in storage, the migration of poor-quality groundwater to areas with previously high-quality groundwater, or a combination of these factors. The Shallow Well Mitigation Plan will develop criteria to characterize the degree of shallow well impacts and develop an evaluation process to assess the viability of the impacted shallow wells. The Shallow Well Mitigation Plan will also outline the process by which individual well owners can apply and submit their wells for evaluation and consideration for mitigation by the Authority, including the evaluation and review process that the Authority's Water Resources Manager will follow to process the applications and make recommendations on mitigation options to the Authority Board.

Following adoption of the Shallow Well Mitigation Plan, shallow wells will be evaluated based on the adopted criteria and categorized into specific areas/zones for development of effective mitigation options. Some shallow wells may be proposed to be abandoned (not mitigated) based on an evaluation of impacts. The wells recommended for mitigation will be placed on an Impacted Shallow Well Priority List and will be scheduled for mitigation. Specific improvements will be identified for each impacted shallow well, such as deepening the well, replacing the well, connecting the well owner to other existing water systems, or other mitigation measures. The estimated cost for the mitigation measures proposed for each impacted shallow well will also be identified.

## 7.2 Revenue Requirements

The revenue requirements for the Mitigation Project reflect the anticipated costs to mitigate shallow wells impacts that will occur due to ongoing overdraft while the Augmentation Project is being brought online. It is anticipated that the Augmentation project will be brought online by 2035, at the latest, and during that time those that will ultimately receive augmented water will overdraft the Basin by 64,000 af, while the

Transient Pool is estimated to overdraft the Basin by a maximum of 51,000 af, leading to a total overdraft of 116,000 af.

As provided for in the GSP, it is anticipated that the mitigation costs will total \$2,020,000. This reflects anticipated costs of \$70,000 in development/engineering work and \$1,650,000 in implementation/capital costs for the rehab and/or replacement of 22 impacted wells. Per year costs of \$20,000 for 15 years, for a total of \$300,000 is assumed for reviewing shallow well applications and reporting to the IWVGA Board.

Dividing estimated total costs of \$2,020,000 by the anticipated overdraft of 116,000 af leads to a per acre foot extraction charge of \$17.50. Because the anticipated damages are rather linear, any reduction in the amount of the overdraft should correlate to an equal reduction in the total estimated costs; therefore the \$17.50 charge should not need modification if there is less overdraft than anticipated. With that said, these costs and revenues will be monitored and if need be adjusted downward if need be.

### 7.3 Imposition and Exclusions

The costs for the Shallow Well Mitigation Project shall be imposed all groundwater extractors in the Basin, with the exclusion of De Minimis and Federal Extractors, for the reasons more thoroughly describe in the Sustainable Yield Report, which is incorporated by this reference. While those taking part in the Transient Pool program are subject to these costs, they will pay for them as part of their Transient Pool agreement and as such they will not be charged the Replenishment Fee.

## 8.0 Basin Replenishment Fee

### 8.1 Purpose

The Basin Replenishment Fee is imposed to provide the necessary funds to bring imported water into the Basin and mitigate the damages caused by the continued overdraft as those supplies are being obtained. As such, the Replenishment Fee is a composite of two separate project costs: the "Groundwater Augmentation Project" and, the "Shallow Well Mitigation Project".



The Augmentation Project will bring imported surface water into the Basin, while the Mitigation Project will mitigate the impacts to shallow wells from the continued overdraft of the Basin during the purchase, design and construction phase of the Augmentation Project. For simplicity and efficiency, it is recommended that these two separate costs centers, which are properly charged to the same individuals on the same per acre foot basis, be combined into the one composite charge named the Basin Replenishment Fee.

## 8.2 Imposition and Exclusions

The Replenishment Fee shall be imposed all groundwater extractors in the Basin, with the exclusion of De Minimis and Federal Extractors, for the reasons more thoroughly describe in the Sustainable Yield Allocation Report, which is incorporated by this reference.

## 8.3 Fee Structure

Initially, the Replenishment Fee will be charged monthly based on the volumetric extraction data but the Authority reserves the right to modify the collection term in the future if need be and such a change will not impact the findings and recommendations in this Report. The total Replenishment Fee reflects the needed Augmentation Project costs of \$2,112 per acre foot extraction and the Mitigation Project costs per acre foot extraction charge of \$17.50 for a total per acre foot extraction fee of \$2,130.

## 9.0 Parcel Identification

As all parcels within the Basin could become subject to the Replenishment Fee if they choose to extract groundwater outside of the express exception provided to De Minimis extractors, notice and the opportunity to protest these fees will be provide to all parcels as determined by the last equalized tax rolls.

# FIGURES

# **TABLES**

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# IWVGA ADMINISTRATIVE OFFICE

*STAFF REPORT*

**TO:** IWVGA Board Members

**DATE:** August 21, 2020

**FROM:** IWVGA Staff

**SUBJECT: AGENDA ITEM NO. 18 - PUBLIC HEARING AND BOARD CONSIDERATION AND ADOPTION OF RESOLUTION 05-20 REGARDING A TRANSIENT POOL AND FALLOWING PROGRAM AND ADOPTION OF RELATED CEQA FINDINGS**

## **DISCUSSION**

As the Board is aware, the adopted GSP has shown that decades of severe overdraft and inaction have already damaged the Basin significantly and recent Basin model runs have demonstrated the need for urgent and significant actions to preserve the community and bring the Basin into Sustainability. In fact, the Baseline Model run projects that without action to cure the severe overdraft, the Basin's infrastructure will not be able to produce the needed groundwater in less than 45 years (2065).

The attached Draft Report on the Transient Pool and Fallowing Program is one significant step in the process of bringing the Basin into sustainability. As set forth in the Report, modeling has determined that the Transient Pool should be capped at a total 51,000 af, which is also the rough equivalent of the presumed overdraft pumping by those that will eventually obtain augmented supplies. With that said, it presumed that augmented supplies will be obtained prior to 2035, and in such case, the actual split of overdraft will likely be a 50/50 split. Moreover, the modeling includes some recycled water use so the actual split is likely more favorable to agricultural users.

As both Transient Pool pumpers and Augmentation pumpers will further overdraft further thus creating shallow well damages both are subject to the Shallow Well Mitigation costs which are presumed to be set at \$17.50 per acre foot of extraction.

Those that receive a Transient Pool allotment in the program will have a three choices. They may:

- 1) Reject the allotment and continue pumping in accordance with the Basin Replenishment Fee and other applicable fees; or,
- 2) Accept the allotment and the associated mitigation fee; or,
- 3) Accept the allotment and negotiate a sell of their allotment to the Groundwater Authority through the Fallowing Program.

Acceptance of the allotment (and by extension the ability to negotiate offer to sell the allotment) will include a release of any and all claims against the IWVGA and its members on a form approved by counsel for the IWVGA. With that said, the qualified pumpers in the attached report will have until October 1, 2020 to make that choice. Starting September 1, 2020, those qualified pumpers, however, may forego the payment of the 10730 Basin Extraction Fee while they consider their options but said fees will be retroactively applied if the qualified pumper has not entered into an agreement accepting the allotment by October 1, 2020.

Staff has reviewed the matter and determined that the Board's proposed action today is exempt from further environmental review on several grounds. Among those is a determination that this action is exempted from further review by SGMA and that the action is not a project, is mandated by law, is ministerial, does not include a discretionary act, will not have a significant effect on the environment, and is provided statutorily and categorical exemptions. Specific attention is drawn to California Public Resources Code section 21080(b)(8) and CEQA Guidelines section 15273(a) which provides express exemptions from further environmental review for this action. Additional attention is drawn to CEQA Guidelines section 15061(b)(3) which exempts non-projects and section 15321 which exempts enforcement actions. Furthermore, this action is exempt because it involves administrative activities that will not result in direct or indirect physical changes in the environment as provided for in CEQA Guidelines section 15061(b)(3) and 15378(b)(5). Moreover, this action is exempt from further environmental review pursuant to CEQA Guidelines section 15307 and 15308 as it's an action by a regulatory agency to assure the maintenance, restoration, enhancement or protection of the environment and natural resources.

### **RECOMMENDED BOARD ACTION(S)**

Therefore, it is recommend that the Board:

- 1) Open the public hearing and take comment;
- 2) Close the public hearing;
- 3) Make findings that the action is exempt from further CEQA review because the action is ministerial, does not include a discretionary act, is mandated by law and is provided statutorily and categorical exemptions, and will not have a significant effect on the environment;
- 4) Adopt Resolution 05-20 adopting The Transient Pool and Fallowing Program.

**BEFORE THE BOARD OF DIRECTORS  
INDIAN WELLS VALLEY GROUNDWATER AUTHORITY**

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**In the matter of:**

**Resolution No. 05-20**

**ADOPTION OF REPORT ON TRANSIENT  
POOL AND FALLOWING PROGRAM**

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I, \_\_\_\_\_, Clerk of the Board of Directors for the Indian Wells Valley Groundwater Authority, do certify that the following resolution, on motion of Director \_\_\_\_\_, seconded by Director \_\_\_\_\_, was duly passed and adopted by the Board of Directors at an official meeting this 21st day of August, 2020, by the following vote:

**AYES:**

**NOES:**

**ABSENT:**

\_\_\_\_\_  
Clerk of the Board of Directors  
Indian Wells Valley Groundwater Authority

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**WHEREAS:**

- (a) The Sustainable Groundwater Management Act requires the IWVGA to bring the Basin into sustainability by 2040 at the latest to make ongoing reports on extractions and progress; and,
- (b) In order to meet those requirements the IWVGA must take regulatory actions to meet the required sustainability mandate of State law.

- (c) The Board has considered, agrees with and incorporates herein all of the findings made by Staff, including but not limited to, the determinations regarding CEQA provided for in the record and staff report.

**IT IS RESOLVED** by the Board of Directors of the Indian Wells Valley Groundwater Authority, as follows:

1. This Board finds that the recited facts are true and that it has the jurisdiction to consider, approve, and adopt this Resolution.
2. This Board incorporates and makes all the findings recommended by staff, whether verbally or in their written reports.
3. This Board finds all of the CEQA determinations made in the staff report and the record are true and hereby incorporates them in their entirety.
4. This Board hereby adopts the attached “Report on Transient Pool and Fallowing Program” effective immediately. Qualified pumpers in the report have until October 1, 2020 to make the choices outlined in the Report. Starting September 1, 2020, those qualified pumpers, however, may forego the payment of the 10730 Basin Extraction Fee, while they consider their options but said fees will be retroactively applied if the qualified pumper has not entered into an agreement accepting the allotment by October 1, 2020. Authority Counsel is directed to draft an agreement for this purpose and the Board Chair is authorized to execute said agreement.



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**REPORT ON  
TRANSIENT POOL  
AND  
FOLLOWING PROGRAM**

**AUGUST 21, 2020**

**Prepared By:**

**Staff and Consultants for**

**The Indian Wells Valley Groundwater Authority**

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## I. BACKGROUND

The Indian Wells Valley Groundwater Basin (IWVGB) is located in the northwestern part of the Mojave Desert in southern California, and it underlies approximately 382,000 acres, or approximately 600 square miles, of land area in portions of the Counties of Kern, Inyo, and San Bernardino. The IWVGB is bordered on the west by the Sierra Nevada Mountain Range, on the north by the Coso Range, on the east by the Argus Range, and on the south by the El Paso Mountains. Surface water flow from the surrounding mountain ranges drains to China Lake, a large normally dry lake, or playa, located in the central north-east part of the Basin. U.S. Route 395 and State Route 14 are the major vehicular arteries through the Indian Wells Valley.

The IWVGB, which has been in an overdraft condition for nearly 6 decades, serves as the sole supply of potable water for the Indian Wells Valley community and NAWS China Lake. Residents are served groundwater through private domestic wells, small cooperative groups sharing wells, small mutual water companies, the Inyokern Community Services District (Inyokern CSD), and the Indian Wells Valley Water District. The U.S. Navy produces and distributes groundwater for the on-station water uses at the NAWS China Lake, which is the Navy's largest single landholding. The installation represents 85 percent of the Navy's land for research, development, acquisition, testing and evaluation (RDAT&E) of cutting-edge weapons systems and 38 percent of the Navy's land holdings worldwide. In total, its two ranges and main site cover more than 1.1 million acres, which is an area larger than the state of Rhode Island.

Searles Valley Minerals Inc. produces groundwater from the IWVGB for use in its mineral's recovery and processing operations in the Searles Valley (located east of the IWVGB) and for potable use in the small communities of Trona, Westend, Argus, and Pioneer Point in the Searles Valley. Additionally, a number of farms use the IWVGB to supply their agricultural operations and the crops grown are primarily alfalfa and pistachios.

The current average estimated water budget for Indian Wells Valley and is shown below.

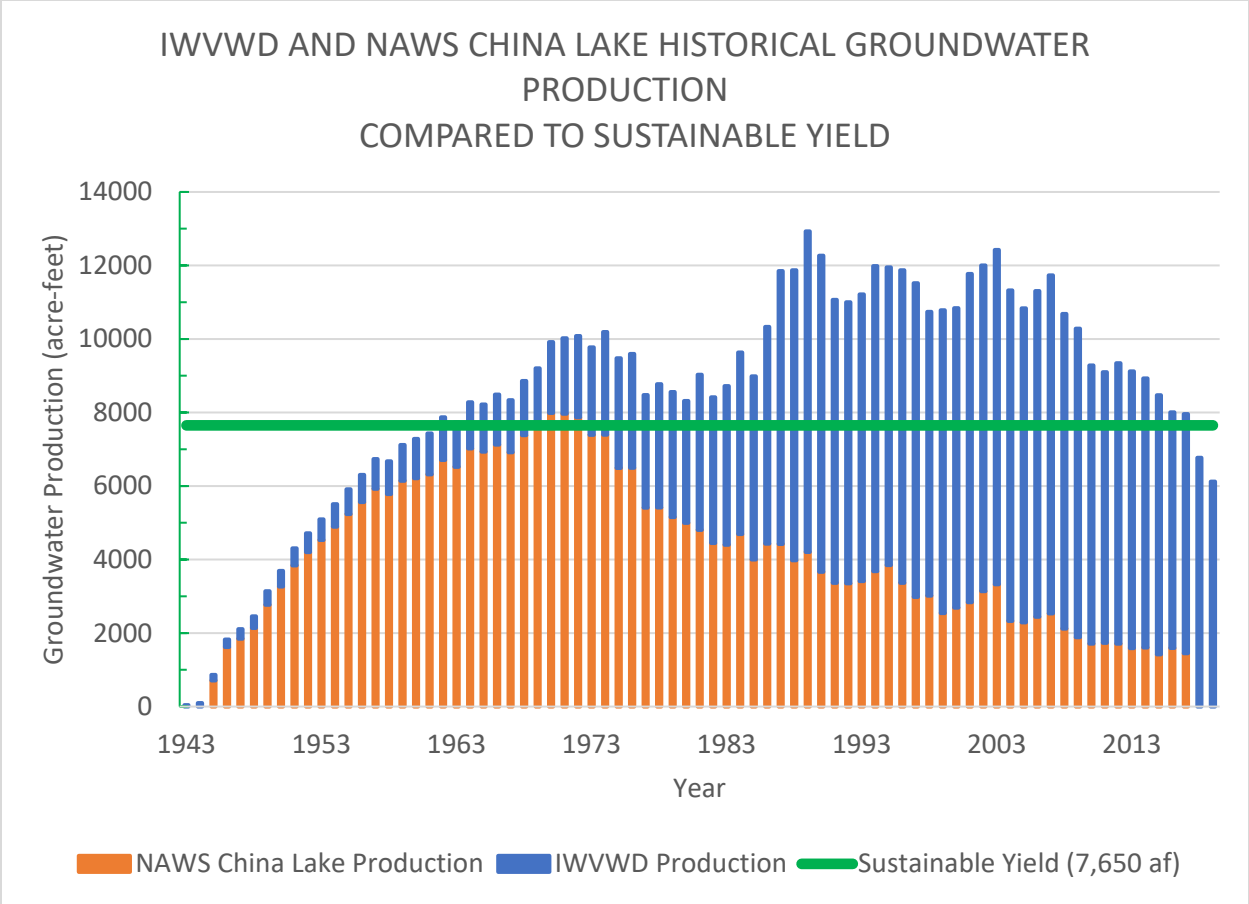
<b>Water Budget Element</b>	<b>Estimated Volume (AFY)</b>
<b><i>Inflows</i></b>	
Mountain Front Recharge	7,650
<b>Total Inflow</b>	<b>7,650</b>
<b><i>Outflows</i></b>	
ET	4,850
Interbasin Subsurface Flow	50
Groundwater Extractions	27,740
<b>Total Outflow</b>	<b>32,640</b>
<b>Change of Groundwater in Storage</b>	<b>-24,990</b>

The IWVGB water budget is defined by the difference between inflows and outflows (see GSP Section 3.3.4). Overdraft occurs when outflows exceed inflows, and there is a loss of groundwater from storage. In the case of the IWVGB, long-term pumping has exceeded local inflow for nearly 6 decades. Currently (2011 to 2015), outflows are approximately four times the estimated inflows. The magnitude of the overdraft results in an average annual loss of storage from the groundwater basin of approximately 25,000 AFY.

The State of California, Department of Water Resources (DWR) states that “SGMA requires local agencies to develop and implement GSPs that achieve sustainable groundwater management by implementing projects and management actions intended to ensure the Basin is operated within its sustainable yield by avoiding undesirable results.” Consequently, sustainable yield is a crucial and fundamental element for the development of implementation measures of the GSP. After careful public consideration, it has been estimated the long-term average natural recharge, and the Sustainable Yield, of the IWVGB is about 7,650 AFY.

The IWVGB has been significantly studied and voluntary pumping documentation has occurred over the last 70 years. For roughly the 20 years preceding SGMA, the Basin was monitored by the IWV Cooperative Group.

As graphically shown below, the IWVGB’s sustainable yield of 7,650 AFY has been exceeded for nearly 60 years by the pumping demands of the Navy and the Indian Wells Valley Water District alone.



While there have been prior preliminary efforts to study these problematic conditions, to date there have been no basin augmentation programs developed and the groundwater extractions have actually increased in recent years. Most notably, in the fairly recent past, the Basin’s burdens were further enhanced by the addition of new groundwater extractions with listed/estimated yearly pumping needs almost equaling the Basin’s entire sustainable yield of 7,650 AFY.

The results of the overdraft, and the lack of augmentation projects, have already manifested themselves through various undesirable results; primarily the chronic lowering of groundwater levels, the degradation of water quality, and the reduction of groundwater in storage throughout the Basin. The unregulated overdraft has resulted in Basin groundwater levels dropping in some areas by approximately 0.5 to 2.5 feet annually. Most importantly, the severe over draft has led the GSP Baseline model run to project that without changes the groundwater infrastructure (wells) will not be able to produce the needed groundwater by 2065.

Given these historic overdraft conditions and the lack of any infrastructure to augment supplies, it would be prudent and beneficial to immediately reduce all pumping to the current sustainable yield of 7,650 AFY. Such a drastic change, however, is simply not feasible without extreme changes to the community. As example, when SGMA was enacted in the 2015, the water demands for NAWS China Lake and municipal/domestic use alone were greater than the sustainable yield, and this was after years of voluntary and mandatory use reduction measures because of the drought. Complicating matters further, the Navy's provided production rates lead to a more than convincing argument that the Navy's Federal Reserve Water Right (FRWR) interest consumes the entire sustainable yield.

Given the undeniable complications, demand reductions alone cannot meet the IWVGB supply needs and as a result the GSP's primary strategy is to achieve sustainability through augmentation of Basin supplies. Unfortunately, the economic reality associated with the anticipated costs to import additional water supplies seems to preclude continued agricultural uses in the IWVGB. As a result the GSP assumes that long term IWVGB production will drop to approximately 12,000 AFY, and will be supplemented with import water.

## II. TRANSIENT POOL AND FALLOWING PROGRAM

Given the GSP Baseline model run and the economic realities facing the Basin because of the lack augmentation infrastructure, the GSP provides for a Transient Pool Program to help mitigate the shift from overdraft reliance.

During preparation of the GSP, the Authority's DRI/Navy 3D Model was used to evaluate the Basin's reaction to several different pumping scenarios to 2040 (required "sustainability") and to 2070 (50 years). For this Basin modeling work, the ramping-down of agricultural pumping was modeled to help determine the Authority's acceptable level of controlled, but reduced, Basin over-pumping for a specific period of time, and to help facilitate transitional reduced agricultural pumping, to an interim acceptable level. Additionally, because it's not feasible to lower the municipal/domestic demands further than they already have been and because those needs will ultimately become augmented with additional supplies, the modeling considered the impacts of

this over-pumping until 2035, which is the projected latest date by which augmented supplies will become available.

The total assumed over pumping, which also assumes that a small amount of recycled water will become available in 2025, is 116,000af. The breakdown of the 116,000af reflects 51,000af for agricultural users and the remaining 65,000af being used by those that will be obtaining augmented supplies. It is presumed that augmented supplies will be obtained and implemented prior to 2035 and as such it is presumed that the additional 14,000af provided to those that will ultimately use the augmented supplies will not actually be pumped and the actual split is likely a 50/50 split, or better for agricultural users. In the event, that the additional 14,000af is actually used because of delays in implementing the augmentation program, the additional pumping provided to the augmented supply users is more than offset by the advantageous to the Basin those users will be providing through the water purchases and infrastructure improvements that will allow for Basin replenishments in wet years.

The process of quantitatively reducing agricultural pumping on an annual basis was briefly looked at and rejected because of the prevalence of permanent crops in the IWVGB. As such, the Transient Pool, which is totalized at 51,000 af, is individually allotted to each qualified agricultural user to manage independently as their operations permit. The allotment is non-transferable and once exhausted, these qualified agricultural users will be required to cease their extractions with the exception that they may continue to extract water for De Minimis uses.

In accordance with SGMA and California Water law, the Transient Pool allotments are determined pursuant to a five-year base period defined as January 1, 2010 through December 31, 2014 (“Base Period”). To facilitate and document “qualified” Base Period agricultural pumping, the Authority distributed a Pumping Verification Questionnaire” to all known Basin pumpers (except NAWS and De minimis). To be eligible for the Transient Pool allotment, agricultural pumpers must meet the Base Period criteria and, must have submit timely and complete responses to the Questionnaire.

During the Base Period, agricultural water uses in the IWVGB has been on average roughly 4 af per irrigated acre with the outliers being alfalfa operations which have used up to 8 to 9 af per



irrigated acre. Given IWVGB's extremely arid climate and its severe overdraft condition, serious concerns have been raised regarding the significant disparity and alfalfa's extremely high water-use per irrigated acre. Since a more than convincing argument can be made that alfalfa production rates under these conditions are an unreasonable use in violation of State law and Article X, section 2, of the California Constitution, the Transient Pool allotments are based on "irrigated acreage" during the Base Period, as reported in the Pumping Verification Reports.

In sum, all qualified agricultural pumpers will receive a Transient Pool allotment based on their agricultural uses reported in the Questionnaire during the Base Period. They may:

- 1) Reject the allotment and continue pumping in accordance with the Basin Replenishment Fee and other applicable fees; or,
- 2) Accept the allotment and the associated mitigation fee; or,
- 3) Accept the allotment and negotiate a sell of their allotment to the Groundwater Authority through the Fallowing Program.

Acceptance of the allotment (and by extension the ability to negotiate offer to sell the allotment) will include a release of any and all claims against the IWVGA and its members on a form approved by counsel for the IWVGA. With that said, the qualified pumpers in the attached report will have until October 1, 2020 to make that choice. Starting September 1, 2020, those qualified pumpers, however, may forego the payment of the 10730 Basin Extraction Fee while they consider their options but said fees will be retroactively applied if the qualified pumper has not entered into an agreement accepting the allotment by October 1, 2020.

### III. MITIGATION FEES CHARGED TO TRANSIENT POOL

The IWVGA Board recognizes that while this additional Transient Pool overdraft will assist agricultural operations adjustment, the continued overdraft will also lead to additional impacts that need to be mitigated through fees to cover those costs.

The procedural requirements of California fee law is met because the use of the Transient Pool is completely voluntary. The substantive requirements are met by taking the assumed total costs

of the Shallow Well Mitigation Program and then dividing those costs by the total amount of overdraft that will occur while the Augmentation Project is being implemented and the amount of overdraft that will occur through the use of the Transient Pool.

As further provided for in the Engineer's Report on the Basin Replenishment Fee, the Shallow Well Mitigation Program assumes a cost of \$2,020,000. Those total costs reflect \$70,000 in development/engineering costs, \$300,000 in total administration costs over the life of the program and \$1,650,000 in implementation/capital costs for the mitigation of 22 shallow wells. This leads to an extraction fee of \$17.50 per acre foot pumped from the Transient Pool.

#### IV. QUALIFIED BASE PERIOD PUMPERS – FOR TRANSIENT POOL

Based upon the records held by the Authority and the WRM, the current known "potentially" qualified Base Period agricultural pumpers for the Transient Pool are listed below:

- Meadowbrook Dairy
- Mojave Pistachios
- Quist Farms
- Sierra Shadow
- Simmons Farms
- Amberglow
- Terese Farm
- Hickle
- Blubaugh
- McGee

However, the following potentially qualified Base Period agricultural pumpers did not timely submit the required Pumping Verification Questionnaire. As such, the Authority is unable to properly verify the needed data and it would be legally inappropriate to include and/or consider them for the Transient Pool. These agricultural pumpers will not receive a Transient Pool allotment and are therefore required to pay all appropriate Authority fees for their continued pumping.

- Mojave Pistachio
- Blubaugh
- McGee

The following agricultural pumpers have submitted their Pumping Verification Questionnaire data package, and have been verified by the WRM as “qualified” Base Period agricultural pumpers.

- Meadowbrook Farms
- Quist Farms
- Sierra Shadows
- Simmons Farms
- Amberglow
- Terese
- Hickle

Accordingly, the 51,000 acre-feet of the Transient Pool is allotted as follows:

Qualified Base Period Agricultural Pumper	Reported Irrigated Acres	Percent of Total	Total Transient Pool Allocation
Meadowbrook Farms	1,277	68.2	37,781
Quist Farms	150	8.0	4,085
Sierra Shadows	200	10.7	5,447
Simmons Farms	133	7.1	3,622
Amberglow	12	.06	327
Terese Farms	80	4.3	2,179
Hickle	20.5	1.1	558
<b>Totals</b>	<b>1,872.5</b>	<b>100.0</b>	<b>51,000</b>

## V. GUIDELINES FOR NEGOTIATING VALUE FOR FALLOWING PROGRAM

The intent and goal of the Transient Pool and Fallowing Program is to significantly reduce the overdraft conditions currently occurring in the IWVGB. As such, holders of Transient Pool allotments may elect to voluntarily negotiate a sale of their Pool allotment to the IWVGA, and thereby reduce their consumptive use. Said negotiations shall be completely voluntary for both the allotment holder and the IWVGA.

While subject to the parameters and appropriate individual variances, it is presumed that payments shall be made in multiple annual installments. Additionally, it is presumed that IWVGA payment will not include the purchase of any other real property (land, equipment, supplies, etc.) and if appropriate the Authority, in conjunction with groundwater pumpers electing to participate in the Fallowing Program, may also explore alternative land uses for the fallowed land, which may include use as enhanced habitat or grazing lands.

Qualified allotment holders may, voluntarily, present their “offer” on/or before October 1, 2020. The IWVGA will review the offer at which time it may:

- 1) accept the “offer to sell” and provide the seller with a purchase agreement,
- 2) provide the seller with a counter-offer,
- 3) schedule a meet and confer negotiation, or
- 4) reject the Qualified Pumpers “offer to sell”.

The last date to complete a Transient Pool Fallowing Agreement is January 31, 2021.

The value of Transient Pool allotments, as determined by the Authority, will be generally based upon the estimated net profit generated by the actual exercise of the Transient Pool allotment pumping for its intended agricultural purposes. Any unused Transient Pool allotment will cease to exist on January 1, 2040.

### **Schedule for Transient Pool and Fallowing Program**

- |   |                   |
|---|-------------------|
| 1. Board Adopts Report  | August 21, 2020   |
| 2. Allotment Holders Informally Express Interest                | September 1, 2020 |
| 3. Allotment Holders Enter Into Agreement                       | October 1, 2020   |
| 4. Allotment Holder Open Fallow Program Negotiations with Offer | October 1, 2020   |
| 5. Fallowing Program Negotiations Completion Date               | January 31, 2021  |
| 6. Transient Pool Pumping Begins                                | February 1, 2021  |

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