

# ARVIN-EDISON WATER STORAGE DISTRICT

## REPORT OF DISTRICT OPERATIONS

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**March 2022**



***This Report is Dedicated to the Memory of Retired Land Clerk  
Mary Hough, May She Rest In Peace***

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# **WATER SUPPLY**

## **Friant Division Central Valley Project (CVP)**

- The 2022 Water Year initial allocation is 15% which amounts to 6,000 AF.
- Exhibit “A” provides additional supply information for 2022 Water Year supplies.

## **San Joaquin River (SJR) Restoration Program (SJRRP)**

- The 2022 Runoff Year is estimated at 1,109,000 AF of natural river runoff in the SJR watershed, which is a “Normal-Dry” year type pursuant to SJR settlement and accordingly, the SJRRP would receive a 237,451 AF of water supply.
- Given a “Normal-Dry” year type there is likely no Unreleased Restoration Flows or Recapture/Recirculation opportunity (no additional supplies).
- District’s RWA credit beginning balance is approximately 90,630 AF (subject to reconciliation and staff review). RWA credits allow the District to purchase water for \$10/AF during wet periods when RWA water is declared (no opportunity in 2021).

## **Shasta System CVP**

- The 2022 allocation for south of Delta Ag remains at 0%.

## **State Water Project (SWP)**

- The 2022 Table A allocation was reduced from 15% to 5% on the 18<sup>th</sup>.

## **Kern River**

- 2022 supplies are currently estimated at 33% of average.

## **Water Bank Facilities**

- Given limited initial surface supply allocations, heavy reliance on wellfields and previously banked water is expected for the 2022 Water Year (98,500 AF).

## **Metropolitan Water District (MWD) Program**

- MWD beginning balance is 119,127 AF in water bank reserves.
- The District obtained its twelfth consecutive year approval from the State Water Resources Control Board regarding a Petition for a Consolidated Place-of-Use (CPOU), which now expires on July 15, 2022.
- The CPOU petition includes the ability to exchange all types of Arvin-Edison supplies with MWD including unbalanced exchanges.
- The District’s 10-year NEPA documentation is complete and approved until March 21, 2024.
- District has begun communicating with MWD staff regarding 2022 call on the program for surface supplies.

## **Rosedale-Rio Bravo Water Storage District (RRBWSD) Program**

- The District’s 2022 beginning account balance for water held in RRBWSD is at 54,461 AF.
- District anticipates receiving 10,000 AF from the program to supplement other surface water supplies
- Districts executed a “2022 Use of CVC/FKC Intertie Agreement” for the RRBWSD-Delano Earlimart banking program. A similar agreement for 2022 is proposed.

## Kern Delta Water District (KDWD)

- Staff continues meeting with KDWD staff to advance water management opportunities including joint partnership in groundwater recharge facilities and interconnection facilities between Forrest Frick Pumping Plant Discharge Pipeline and the Eastside Canal.
- AEWSD-KDWD-RRBWSD executed a 2022 operational exchange in which AEWSD’s 10,000 acre-feet from RRBWSD would be delivered via KDWD from April through September.

## District Partnerships

- The District has participated in water management programs with the following districts/agencies in Water Year 2022:

Fresno County  
 Kern Delta Water District  
 Kern Water Bank  
 Metropolitan Water District

Rosedale-Rio Bravo Water Storage District  
 San Joaquin River Exchange Contractors  
 San Joaquin River Restoration Program

## WATER DEMAND

- District surface water deliveries for the month were 6,381 AF (11% below average)
- The following is a summary of surface water deliveries for March 2022:

	<b>March 2022</b>		<b>Year to Date</b>	
	Historical	2021 WY	Historical	2021 WY
Turnout Deliveries	7,207	6,381	7,207	6,381
In-Lieu Deliveries	-	-	-	-
Temporary Water	-	-	-	-
Spreading	-	-	-	-
<b>Total</b>	<b>7,207</b>	<b>6,381</b>	<b>7,207</b>	<b>6,381</b>

- Exhibit “B” illustrates the delivery data
- The month's peak daily in-District demand was 259 cfs, which occurred on the 24<sup>th</sup>
- Exhibit "C-1" details Canal Water Quality information
- Exhibit “C-2” presents the Aquatic Pest Control Treatments (\$0) for Calendar Year 2022

## GENERAL

- Staff continues investigations regarding increasing its cybersecurity
- District vehicles consumed an estimated 5,070 gallons of fuel during the month (average fuel efficiency of 11.2 mpg)
- There were 468 hours lost due to illness (including COVID-19 hours) and 368 hours lost due to on-the-job injuries with two (2) employees out on Workers’ Compensation Claim

- Exhibit "D" highlights precipitation, temperature, and wind speed
- Exhibit "E" summarizes energy consumption and power demand to date and for Water Year 2022 it is expected to generate an electrical demand of approximately 138 million kilowatt hours
- Exhibit "I" list various meetings for Directors, Management, and Engineering staff

## **ENGINEERING DEPARTMENT ACTIVITIES**



*Solar Panel Construction In Progress (Headquarters)*



*Staff and Consultants Onsite for Well Startup (Sycamore #8)*

### **Routine Activities**

- Review and accounting of District's water supply and related contracts
- Administration or proposals of water management and wheeling agreements
- Groundwater level surveys and associated exhibits
- Water quality testing
- ArcGIS database updates and maintenance (facilities, water service areas, boundaries, etc.)
- Inspection/evaluation and/or repair of cathodic protection rectifiers and test stations
- CIMIS station management (<https://cimis.water.ca.gov/Stations.aspx>)
- Land use/crop surveys with data entry
- Monthly/annual reports regarding water deliveries, water use, and energy use

### **Grants & Funding Opportunity Updates**

- District **was awarded** 2020 USBR WaterSMART grant application for the Forrest Frick Pipeline/Eastside Canal Intertie at \$500,000 (with a \$500,000 local cost share) and a grant contract was executed; the cultural portion for the NEPA Categorical Exclusion has been completed and executed.
- District **was not awarded** the USBR WaterSMART Drought Resiliency Projects funding opportunity for the DiGiorgio Unit expansion at \$2,000,000 (with a \$2,600,000 local cost share). Staff and consultants met with Bureau staff for a debriefing on March 23<sup>rd</sup>.
- NRCS landowner incentive programs assist with implementing various conservation activities, including but not limited to, irrigation system improvements, filtration needs, water/nutrient/pest management, and engine replacement:
  - Phone (661) 336-0967

- Website ([www.ca.nrcs.usda.gov](http://www.ca.nrcs.usda.gov))
- North West Kern Resource Conservation District provides discounted on-farm irrigation distribution uniformity and efficiency testing
  - Phone (661) 281-2746
  - Website (<http://northwestkernrcd.org>)

## Other Activities

- Administration and accounting of on-going water management programs
- Technical support and review of ongoing projects/studies such as:
  - Sunset Groundwater Recharge Facility (w/Kern Delta WD)
    - Coordinating power extension (PG&E, contractors, consultants)
    - Pump station and pipeline design coordination
  - Forrest Frick and Eastside Canal Intertie (w/ Kern Delta WD)
    - Completed environmental compliance with USBR
    - Working with PG&E on facilities extension for new service
    - Draft O&M agreement under review
    - Finalizing plans to go out to bid
  - Potential Interconnections (w/ Wheeler Ridge-Maricopa WSD)
    - Coordination with both Districts' staff continued to deliver District water into the 850 Canal, which will ultimately be delivered back into AEWSD overlap lands with Wheeler-Ridge
  - Pump Replacement Program
    - Staff has installed and tested all of the canal side units and completed Phase 1
  - Turnout Modification Requests
    - Giumarra (W-23) turnout rotation completed
  - Temporary and/or In-Lieu Water Service Contract Requests
    - Freedom Farms
  - Cathodic protection system upgrades
  - Pump Efficiency Testing
    - District wide testing completed, final summary report in progress
    - As needed for replaced pumps (S73-P2)
  - Real Time Water Quality Monitoring
    - Remote connection for data access completed and website display is in progress
  - Intertie Pipeline Inspection
    - Coordinating potential use of pipeline diver tool with Xylem
  - Groundwater Metering
    - Coordinate warranty repairs with Manufacturer
  - 123 TCP Treatment Plant Facilities RFP
  - Standtank Painting
    - Begin bidding process

## SGMA Activities

- Continued coordination meetings and outreach activities
- Continued review of well permits and submitted comment letters to those within or near AEWSD
- Attended various GSA meetings
- Coordinated GSA boundary revisions with neighboring agencies



- DWR approved GSA status on March 7, 2022
- Development of a potential Well Mitigation Policy
- Development of County's "Proof of Water" Policy
- Evaluate various Water Budget methodologies
- Development of a customized model for the Arvin Management Area (MODFLOW)
- Amended discrepancies within Data Management System (DMS)

## Requests for Information/Easements/Planning Notices

- Water supply
- Water costs
- Historical groundwater levels
- Monitoring well conversions
- Water quality
- Land use data
- Easements and/or right-of-way encroachments
  - Shell Oil (Intake Canal)
  - Quad Knopf development (Intake Canal)
  - City of Bakersfield (Intake Canal)
  - Kern Delta Water District (Intake Canal)
- Reviewing/responding to multiple planning notices
  - Kern County (various developments/potential facility conflicts)
- Reviewed/responded to environmental documents, as necessary

## Power Related Activities

- Assisted PWRPA consultants with
  - Power coordination and monitoring
  - PWRPA invoice and demand data changes
  - Monthly billing anomalies/meter reconciliations
  - Load forecast updates and rate analysis
  - Contract demand analysis
  - WDT 3 impact review
  - Power accounting report
  - PWRPA software issues coordination
  - Renewable Portfolio Standards review
- PG&E Power Safety Public Shutoff coordination
- Coordinated meter database changes with PG&E
- Reviewed long-term power management activities
  - Continued investigation of low head hydro potential (Intake Canal)
  - District Headquarters Solar construction coordination
    - Currently under construction and completion is anticipated by May 2022
  - Reviewed available local solar renewable energy certificates to Western Renewable Energy Generation Information System (credits to be used by District/PWRPA)
  - Review and coordinate Demand Response Program
  - MWD power correspondence review
  - District Power Master Planning and MicroGrid investigations
  - Forrest Frick Pumping Plant load capacity coordination
- Coordinate long term power analysis for Sunset GW Recharge Facility
- Calendar Year and Water Year power reconciliations and summaries

- Groundwater Service Program
  - Monthly invoicing and program coordination
  - Outreach to the two (2) remaining In-lieu landowners
  - Develop 2022 rate structure

## **SPREADING WORKS OPERATIONS (WELLFIELDS AND BASINS)**

- Exhibit “F” summarizes wellfield production, which totaled 6,372 AF for the month
- Exhibit “G” summarizes gross direct spreading of 0 AF for the month
- Exhibits “H-1” and “H-2” summarize current static and/or pumping water in table and graphic forms

Following is a summary of repairs associated with “active” District wells:

<b><u>Field</u></b>	<b><u>Well #</u></b>	<b><u>Year</u></b>	<b><u>HP</u></b>	<b><u>Reason</u></b>	<b><u>Work</u></b>
Sycamore	2	1967	300	Low Production and Excess Vibrations	Pulled equipment, replacement pump install to be scheduled
Sycamore	8*	1967	300	Excess Vibrations	Pulled and inspected equipment, video, replacement pump installed
Sycamore	17	1967	300	Low Production Excess Vibrations	Pulled and inspected equipment, replacement pump installed, startup scheduled
Tejon	77	1966	300	Excess Vibrations	Pulled equipment, replacement pump installs to be scheduled
Tejon	83	1970	300	Excess Vibrations	Pulled and inspected equipment, replacement pump installed, startup scheduled
Tejon	95	1998	300	Low Production and Excess Vibrations	Equipment pulled, video, replacement pump install to be scheduled

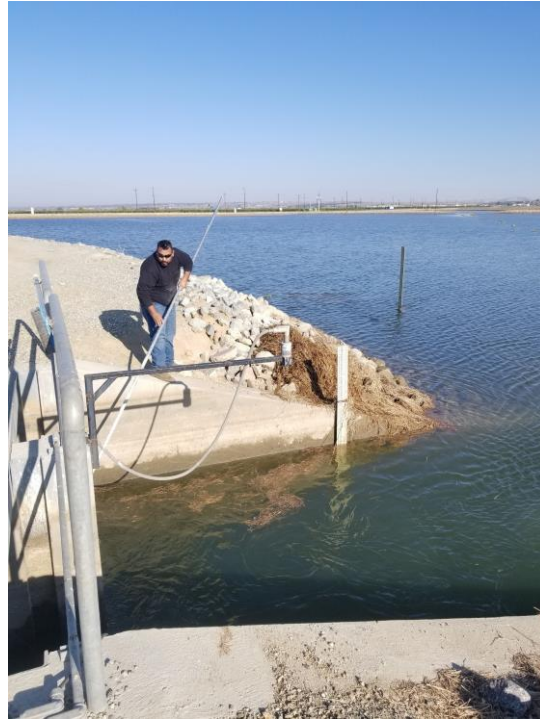
\*Back in Service

- Seven (7) out of 86, or 8%, of District wells are currently out of service and consultants are reviewing repair options
  - Two (2) long-term failures in Sycamore 34 and Tejon 91
  - Five (5) see above table

## OPERATIONS DEPARTMENT ACTIVITES



*Replacing Air Vent (S93-P2)*



*Clearing Out Forebays (Balancing Reservoir)*

### **Routine Activities**

- Operate and monitor the District's water distribution and delivery systems including canals, ponds and reservoirs
- Conducted monthly safety meetings
- Inspected control systems at pumping plants (transducers, Cla-valves, battery back-ups, etc.)
- Assisted personnel in the repair, replacement, and/or maintenance of facilities on an as-needed basis for the following items:
  - Replaced flowmeter batteries (turnouts and wells)
  - Flushed and cleaned various turnouts and appurtenances
  - Greased turnout valve operators
  - Maintained weed control (pumping plants, turnouts, air vents, and isolation valves)
  - Changed lights and panel bulbs (as needed)
  - Inspected/replaced water quality warning labels at turnouts
  - Cleaned and/or replaced air-chamber sight glasses
  - Replaced missing locks and chains (canal gates and turnouts)
- Staff performed end-of-month meter readings at Interties, Wells, Turnouts, and Pumping Plants (power)

### **Additional Activities**

- Transition into wellfield operations
- Train personnel on wellfield operations and safety
- Respond to and report to vandalism and theft (Pumping Plant N1-P5 and North Canal Well 1)
- Isolate and drain bypass line for repair (N24-P1)



- Respond to standtank overflow (S38-P2, S73-P4, and S93-P2)
- Isolate and flush flow restricting debris (E-97 and T-67)
- Isolate and drain sublateral for turnout modification (W-23)
- Reset displaced isolation valve concrete rings (North and South side)
- Clear out turnout base isolation valves (North and South side)
- Responded to various Pumping Plant alarms (reset and primed laterals)
- Reprogrammed various wellfield digital meters (after battery replacement)
- Located various buried isolation valves for marking (Underground Service Alert)
- Replaced damaged air vent (S93-P2)
- Replaced various valves
  - Turnouts (E-80, A-83, and W-23)
- Replaced various meters
  - Turnouts (E-80, E-10, T-81, W-23, and W-25)
  - Wells (North Canal 2, Sycamore 17, and Tejon 80)

### **Underground Service Alert (USA) Report**

- District initiated 20
- Responded to 258 USA notices to locate District underground facilities
  - 20 required markings of District facilities
  - 66 were renewals
  - 172 with no conflicts

### **Power Outages and/or Interruptions Involving the Following Systems**

- Laterals N55, S68, and S73

### **Laterals Prorates (number of days)**

- No prorates for the month

## **MAINTENANCE DEPARTMENT ACTIVITIES**



*Rotating Turnout (W-23)*



*Grading In Preparation for Fence Install (South Canal)*

### **Routine Activities**

- Aquatic and terrestrial weed control
- Routine gardening and maintenance at Headquarters and CIMIS station
- Fence and gate repair (Intake Canal, Wasteway, and North and South Canal)
- Grading (Tejon Spreading Works)
- Discing (Wasteway and Sycamore Spreading Works)
- Mowing (North Canal and Sycamore Spreading Works)

- Cleared out forebays (North and South Canal)
- Assisted other Departments as needed (Operations and Pump Shop)
- Conducted monthly safety meeting including COVID procedures

### Additional Activities

- Install new victaulic coupler (N1-P1)
- Repair leaking turnout (E-70 and T-78)
- Assist pump shop with new pump and valve installation (S73-P2)
- Burn tumble weeds (Sycamore Spreading Works)
- Install and paint replacement turnout and meter (E-80)
- Install new AC unit (Pump Shop office)
- Repair chain link fence (Headquarters)
- Backfill washed out roads and access area (near S38-P2)
- Apply pre-emergent (Sycamore and Tejon Spreading Works)
- Rotate turnout and install isolation valve (W-23)
- Replaced AC filters (All District facilities)
- Prepared and painted various facilities
  - Pumping plants (N55-P2, P3, and P4)

### Mechanic's Shop Repair Activities

- Routine weekly inspection on the fuel tank, gas pumps, and generator
- Fleet repairs/replacement parts

Part	Repair/Replaced	Part	Repair/Replaced
Brakes	6	Fuel Pump	1
Tires	7	Headlights	2
Tire Repairs	3	Tail Lights	3
Rotors/Drums	3	Wiper Blades	6
Batteries	2	Cabin Filter	1
Fuel Filters	4	Trailer Lights	1

- Heavy Equipment Repairs
  - Repaired tail lights (trash trailer)
  - Replaced tire (water truck)
  - Repaired marker light (dump truck)
  - Replaced blades (rotary cutter)
  - Replaced fuel hose (gas pump)

## PUMP DEPARTMENT ACTIVITIES



**Organizing Pump Inventory  
(Headquarters)**



**Removing Pump for Repairs (N26-P1)**

## **Routine Pump Maintenance Activities**

- Replacing pump packing
- Pump bearing lubrication at various pumping plants
- Maintain drip oil on District Wells
- Inspection and maintenance of air compressors
- Inspection and/or adjustment of travelling water screens/moss screens.

## **Additional Activities**

- Continued working with Engineering Department on Pump Replacement Program
  - Continued pilot testing for Phase 2 (horizontal pumps)
- Organized pump equipment for inventory purposes (Headquarters)
- Assembled vertical spare pumps in preparation for the irrigation season

## **PUMP & MOTOR REPAIR SUMMARY**

	<u>Pumping Plant/Wells</u>	<u>Unit</u>	<u>Size</u>	<u>Time/Hours</u>	<u>Reason</u>
<u>Vertical Pumps</u>	N41-P1	4	10 CFS	20,680	Excessive vibrations
<u>Vertical Motors</u>	None to Report				
<u>Horizontal Pumps</u>	N1-P2	7	5 CFS	6,720	Worn bearings
	S38-P2	1	10 CFS	21,800	Worn shaft and wear ring
	S73-P2	5	5 CFS	16,410	Increase system flow
<u>Horizontal Motors</u>	N55-P3	2	200 HP	500	Burnt windings

## **CONTROLS DEPARTMENT ACTIVITIES**

### **Routine Activities**

- SCADA/radio maintenance or troubleshooting
- Monthly and annual inventory
- Testing and repair/replacement of distribution system and well facility electrical components as needed

<b>Component</b>	<b>Replaced/Repaired</b>	<b>Component</b>	<b>Replaced/Repaired</b>
Starter Contacts	2	Relays	2
Control Fuses	1	Water Level Sensor	1
Hour Meters	1	12 kV Transformers	3
Trip Units	1	Flood Lights	4
Control Transformer	1	Softstart	4
Limiterque	1	12 kV fuses	6



*Replacing Water Level Transducer  
(Sycamore Checkgate)*



*Repairing Limitorque (S38-P1)*

### **Additional Activities**

- Programming for SCADA and radio system updates and monitored performance
- Worked with consultants on cybersecurity upgrades
- Worked with consultants to repair communication between Headquarters and the Wasteway

## **FORREST FRICK PUMPING PLANT**

- 250 AF of water was pumped during the month
- Consultants are designing reverse flow facilities into the Intake Canal to assist in regulating wellfield production during shoulder months to increase peaking water supplies

## **INTERTIE PUMPING PLANT**

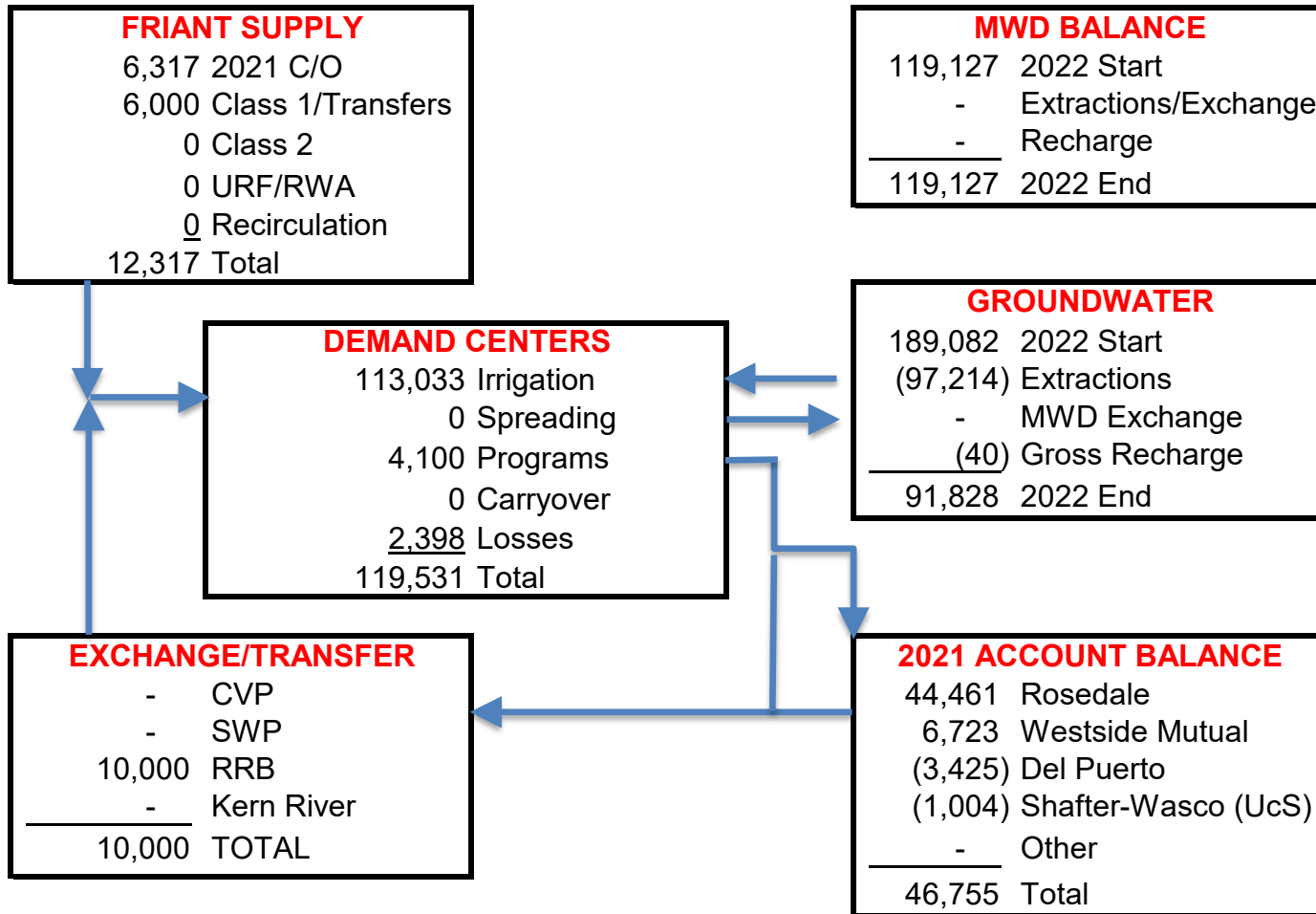
- There was no import (gravity delivery) or export (pumped delivery) of water (0 AF) through the Howard Frick Pumping Plant/Pipeline

**EXHIBIT "A-1"**  
**ARVIN-EDISON WATER STORAGE DISTRICT**  
**2022 WATER SUPPLY AND DEMAND**

<u>SUPPLY</u>	<u>AF</u>	<u>%</u>
<b>FRIANT-KERN (F-K)</b>		
15% OF 40,000 AF CLASS 1	6,000	
0% OF 311,675 AF CLASS 2 (Uncontrolled Season)/RWA	0	
0% OF 311,675 AF CLASS 2	0	
CARRYOVER OF 2021 WATER	6,317	
SUBTOTAL	12,317	
FRESNO COUNTY	-600	
SJRRP RETURN	-3,500	
TOTAL F-K	8,217	7.1%
<b>CROSS VALLEY CANAL (CVC)</b>		
ROSEDALE-RIO BRAVO WSD (KDWD EXCHANGE)	0	
TOTAL CVC	0	0.0%
<b>STATE WATER PROJECT (AQUEDUCT)</b>		
KT EXCHANGE	0	
TOTAL AQUEDUCT	0	0.0%
<b>INTERTIE PIPELINE (IPL)</b>		
RETURN TO MWD	0	
TOTAL IPL	0	0.0%
<b>KERN RIVER</b>		
FRESNO COUNTY	0	
MWD BANKING	0	
KERN DELTA (RRBWSD EXCHANGE)	10,000	
TOTAL IPL	10,000	8.7%
<b>INTAKE CANAL PUMP-IN (IC)</b>		
KERN DELTA WELLS	0	
KERN DELTA H STREET	0	
TOTAL KR	0	0.0%
<b>TOTAL IMPORT</b>		
	<b>18,217</b>	<b>15.8%</b>
<b>GROUNDWATER PUMPING</b>		
IRRIGATION DEMAND	97,214	
FARM PUMP IN	0	
RETURN TO MWD	0	
TOTAL PUMPING	97,214	84.2%
<b><u>TOTAL WATER SUPPLY</u></b>	<b>115,431</b>	<b>100.0%</b>
<b><u>DEMAND</u></b>		
IRRIGATION DEMAND (MARCH)	6,382	5.5%
IRRIGATION DEMAND (APRIL-FEBRUARY)	106,659	92.4%
SPREADING (MARCH)	0	0.0%
SPREADING (APRIL-FEBRUARY)	0	0.0%
RETURN TO MWD - AETO EXCH	0	0.0%
LOSSES/METERING INACCURACIES	2,390	2.1%
<b><u>TOTAL DEMAND</u></b>	<b>115,431</b>	<b>100.0%</b>



Exhibit "A-2"  
 ARVIN-EDISON WATER STORAGE DISTRICT  
**2022 WATER MANAGEMENT**

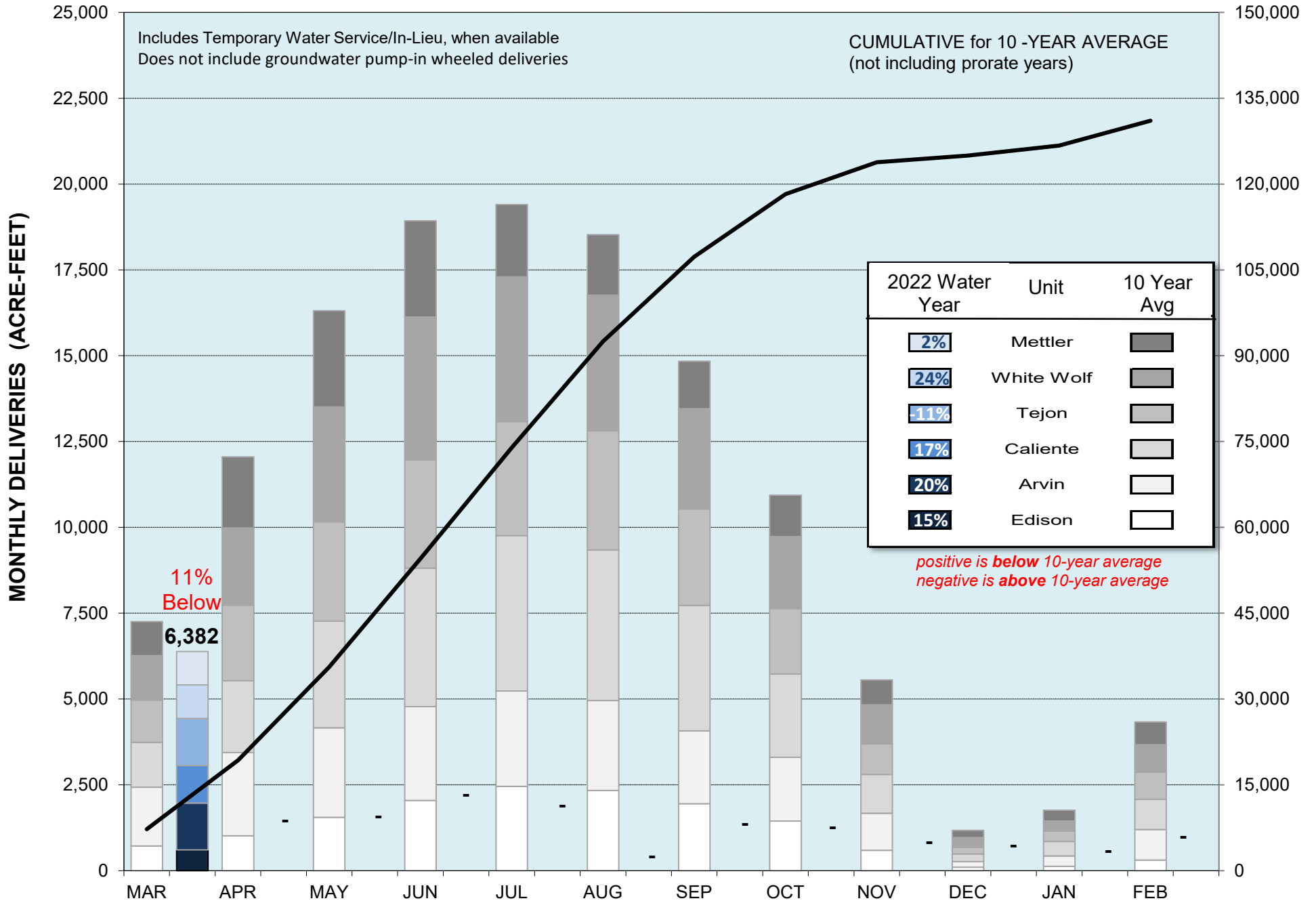


Surface Water	15,819	<b>14%</b>
Groundwater (60% of Max)	97,214	<b>86%</b>
<b>Projected Irrigation Demand</b>	<b>113,033</b>	<b>100%</b>

# EXHIBIT "B"

## ARVIN-EDISON WATER STORAGE DISTRICT

### 2022 WATER YEAR DELIVERIES



**EXHIBIT "C1"**  
**ARVIN-EDISON WATER STORAGE DISTRICT**  
**WATER SUPPLY WATER QUALITY SUMMARY**

	Date	Flow cfs	Import Source	Calcium		Magnesium		Sodium		Bicarbonate		Chloride		Nitrate		TDS mg/l	pH	EC umhos/cm	Hardness mg/l	SAR	Gypsum lbs/AF	Boron mg/l	Turbidity NTU	
				mg/l	me/l	mg/l	me/l	mg/l	me/l	mg/l	me/l	mg/l	me/l	mg/l	me/l									
<b>Intake Canal</b>	03/09/22	0	RESIDUAL FKC(100%)	6.0	0.30	0.8	0.06	5.5	0.24	29	0.48	3.3	0.09	0.34	ND	33	7.7	70	18	0.6	0.50	0.03	4.7	
	02/08/22	150	FKC(100%)	3.9	0.20	0.6	0.05	4.3	0.19	20	0.33	4.1	0.12	0.50	0.01	20	7.6	53	12	0.1	0.00	0.10	2.8	
	01/10/22	60	FKC(100%)	5.2	0.26	0.7	0.06	4.5	0.19	26	0.43	2.8	0.08	0.37	0.01	29	7.5	56	16	0.5	0.45	0.04	4.2	
	12/13/21	0	RESIDUAL FKC(100%)	17.0	0.85	1.0	0.08	25.0	1.08	58	0.95	17.0	0.48	6.60	0.11	120	8.1	221	46	1.6	0.12	0.04	1.7	
	11/09/21	80	FKC(100%)	16.0	0.80	1.2	0.10	21.0	0.91	67	1.10	13.0	0.37	3.50	0.06	100	8.0	197	46	1.3	0.78	0.09	2.6	
	10/07/21	40	CVC(100%)	7.5	0.38	0.7	0.06	8.0	0.34	33	0.54	3.8	0.11	1.10	0.02	43	7.6	79	22	0.8	0.47	0.03	1.8	
	09/09/21	60	CVC(100%)	8.0	0.40	0.7	0.06	7.8	0.34	36	0.59	4.3	0.12	1.10	0.02	45	7.8	90	23	0.7	0.54	0.02	2.3	
	08/09/21	35	CVC(56%)/KD WELLS(44%)	28.0	1.40	4.0	0.33	21.0	0.91	110	1.80	14.0	0.39	6.80	0.11	150	8.3	274	88	1.0	0.03	0.11	1.6	
	07/08/21	35	CVC(56%)/KD WELLS(44%)	27.0	1.35	2.8	0.23	27.0	1.16	110	1.80	18.0	0.51	5.10	0.08	150	8.3	298	80	1.3	0.97	0.12	2.6	
	06/04/21	110	FKC(68%)/CVC(18%)/KD WELLS(14%)	22.0	1.10	2.3	0.19	24.0	1.03	80	1.31	16.0	0.45	4.20	0.07	130	8.6	244	66	1.3	0.62	0.11	2.8	
	05/07/21	35	KD WELLS & KD MAIN(100%)	27.0	1.35	4.2	0.34	25.0	1.08	96	1.57	12.0	0.34	3.80	0.06	150	8.7	274	84	1.2	0.42	0.15	4.0	
	04/07/21	27	KD WELLS & KD MAIN(100%)	24.0	1.20	3.3	0.27	24.0	1.03	91	1.49	12.0	0.34	2.20	0.04	130	8.6	243	73	1.2	0.76	0.18	5.0	
	03/12/21	0	RESIDUAL CVC(100%)	22.0	1.10	1.5	0.12	32.0	1.38	78	1.28	21.0	0.59	0.99	0.02	140	8.7	263	62	1.8	1.10	0.17	9.4	
02/11/21	22	CVC(100%)	24.0	1.20	1.3	0.11	9.1	0.39	74	1.21	4.7	0.13	2.10	0.03	87	8.6	162	64	0.5	0.33	0.04	16.8		
	<b>Average</b>			<b>17.0</b>	<b>0.8</b>	<b>1.8</b>	<b>0.1</b>	<b>17.0</b>	<b>0.7</b>	<b>64.9</b>	<b>1.1</b>	<b>10.4</b>	<b>0.3</b>	<b>2.8</b>	<b>0.0</b>	<b>94.8</b>	<b>8.1</b>	<b>180.2</b>	<b>50.0</b>	<b>1.0</b>	<b>0.5</b>	<b>0.1</b>	<b>4.4</b>	
<b>North Canal</b>	03/09/22	38	WELLS(100%)	16.0	0.80	2.9	0.24	43.0	1.85	95	1.56	20.0	0.56	2.10	ND	160	8.6	322	52	2.6	2.80	0.37	4.4	
	02/08/22	134	FKC(100%)	5.0	0.25	0.6	0.05	4.4	0.19	23	0.37	5.1	0.14	0.50	0.01	22	8.0	59	15	0.1	0.00	0.10	4.7	
	01/10/22	80	FKC(100%)	7.2	0.36	0.8	0.06	4.7	0.20	40	0.66	2.9	0.08	0.36	0.01	39	7.5	69	21	0.5	1.00	0.05	5.1	
	12/13/21	0	RESIDUAL FKC(100%)	31.0	1.55	2.7	0.22	21.0	0.91	130	2.13	9.4	0.26	2.80	0.05	150	7.7	310	88	1.0	1.60	0.07	6.7	
	11/09/21	58	FKC(100%)	17.0	0.85	1.3	0.11	19.0	0.82	71	1.16	12.0	0.34	2.70	0.04	98	8.2	190	47	1.2	0.94	0.10	3.3	
	10/07/21	14	CVC(24%)/WELLS(76%)	20.0	1.00	3.5	0.29	54.0	2.33	130	2.13	23.0	0.65	8.90	0.14	200	8.3	346	63	3.0	3.50	0.40	2.0	
	09/09/21	70	CVC(31%)/WELLS(69%)	18.0	0.90	3.6	0.30	56.0	2.41	120	1.97	26.0	0.73	10.00	0.16	200	8.4	369	60	3.1	4.10	0.41	3.0	
	08/09/21	14	CVC(10%)/KD WELLS(8%)/WELLS(82%)	24.0	1.20	4.4	0.36	34.0	1.47	130	2.13	15.0	0.42	12.00	0.19	170	8.2	314	77	1.7	2.40	0.12	2.9	
	07/08/21	58	CVC(10%)/KD WELLS(8%)/WELLS(82%)	19.0	0.95	3.8	0.31	43.0	1.85	130	2.13	19.0	0.53	8.20	0.13	180	8.3	335	63	2.4	3.40	0.26	1.9	
	06/04/21	148	FKC(27%)/CVC(7%)/KD WELLS(6%)/WELLS(60%)	21.0	1.05	4.1	0.34	52.0	2.24	130	2.13	25.0	0.70	10.00	0.16	210	8.4	378	68	2.8	3.50	0.41	4.4	
	05/07/21	58	KD WELLS & KD MAIN(18%)/WELLS(82%)	22.0	1.10	4.5	0.37	35.0	1.51	120	1.97	16.0	0.45	7.60	0.12	160	8.2	297	73	1.8	2.00	0.14	1.2	
	04/07/21	80	KD WELLS & KD MAIN(14%)/WELLS(86%)	20.0	1.00	4.3	0.35	34.0	1.47	110	1.80	17.0	0.48	5.50	0.09	150	8.3	274	68	1.8	1.90	0.16	2.4	
	03/12/21	58	WELLS(100%)	22.0	1.10	3.9	0.32	40.0	1.72	120	1.97	17.0	0.48	7.00	0.11	170	8.2	303	70	2.1	2.20	0.19	1.2	
02/11/21	14	CVC(21%)/WELLS(79%)	23.0	1.15	4.5	0.37	27.0	1.16	110	1.80	16.0	0.45	6.90	0.11	140	8.2	261	75	1.3	0.97	0.07	1.3		
	<b>Average</b>			<b>18.9</b>	<b>0.9</b>	<b>3.2</b>	<b>0.3</b>	<b>33.4</b>	<b>1.4</b>	<b>104.2</b>	<b>1.7</b>	<b>16.0</b>	<b>0.4</b>	<b>6.0</b>	<b>0.1</b>	<b>146.4</b>	<b>8.2</b>	<b>273.3</b>	<b>60.0</b>	<b>1.8</b>	<b>2.2</b>	<b>0.2</b>	<b>3.2</b>	
<b>South Canal</b>	03/09/22	20	WELLS(100%)	16.0	0.80	2.9	0.24	42.0	1.81	110	1.80	19.0	0.53	1.60	ND	160	8.6	311	51	2.6	3.80	0.37	5.0	
	02/08/22	70	FKC(100%)	5.2	0.26	0.6	0.05	4.4	0.19	24	0.40	3.9	0.11	0.50	0.01	26	7.8	60	16	0.1	0.00	0.10	3.6	
	01/10/22	40	FKC(100%)	8.0	0.40	0.8	0.06	4.8	0.21	36	0.59	2.8	0.08	0.35	0.01	37	7.8	73	23	0.5	0.51	0.05	3.8	
	12/13/21	N/A	DOWN FOR WINTER MAINTENANCE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/09/21	160	FKC(100%)	18.0	0.90	1.4	0.11	20.0	0.86	74	1.21	12.0	0.34	2.70	0.04	100	8.1	199	51	1.2	0.86	0.10	3.1	
	10/07/21	120	CVC(17%)/WELLS(83%)	32.0	1.60	8.6	0.70	49.0	2.11	140	2.30	40.0	1.12	11.00	0.18	240	8.1	428	120	2.0	0.05	0.21	2.0	
	09/09/21	110	CVC(23%)/WELLS(77%)	32.0	1.60	9.2	0.75	45.0	1.94	140	2.30	44.0	1.24	10.00	0.16	240	8.3	453	120	1.8	0.06	0.22	1.8	
	08/09/21	0	CVC(7%)/KD WELLS(5%)/WELLS(88%)	40.0	2.00	12.0	0.98	45.0	1.94	160	2.62	61.0	1.71	12.00	0.19	280	8.2	525	150	1.6	ND	0.14	1.6	
	07/08/21	90	CVC(7%)/KD WELLS(6%)/WELLS(87%)	31.0	1.55	8.7	0.71	41.0	1.77	140	2.30	37.0	1.04	11.00	0.18	230	8.2	440	110	1.7	0.27	0.16	1.5	
	06/04/21	160	FKC(21%)/CVC(5%)/KD WELLS(4%)/WELLS(70%)	27.0	1.35	7.4	0.61	46.0	1.98	140	2.30	35.0	0.98	10.00	0.16	220	8.2	4	98	2.0	1.40	0.25	4.9	
	05/07/21	120	KD WELLS & KD MAIN(12%)/WELLS(88%)	34.0	1.70	9.7	0.80	40.0	1.72	140	2.30	37.0	1.04	9.70	0.16	230	8.1	420	120	1.6	ND	0.12	1.0	
	04/07/21	140	KD WELLS & KD MAIN(9%)/WELLS(91%)	32.0	1.60	9.0	0.74	39.0	1.68	140	2.30	32.0	0.90	9.00	0.15	210	8.2	381	120	1.6	ND	0.15	1.6	
	03/12/21	50	WELLS(100%)	33.0	1.65	8.5	0.70	40.0	1.72	140	2.30	35.0	0.98	11.00	0.18	220	8.2	403	120	1.6	ND	0.18	2.2	
02/11/21	20	CVC(18%)/WELLS(82%)	35.0	1.75	9.1	0.75	38.0	1.64	120	1.97	37.0	1.04	15.00	0.24	220	8.4	410	120	1.5	ND	0.11	1.6		
	<b>Average</b>			<b>26.4</b>	<b>1.3</b>	<b>6.8</b>	<b>0.6</b>	<b>34.9</b>	<b>1.5</b>	<b>115.7</b>	<b>1.9</b>	<b>30.4</b>	<b>0.9</b>	<b>8.0</b>	<b>0.1</b>	<b>185.6</b>	<b>8.2</b>	<b>315.9</b>	<b>93.8</b>	<b>1.5</b>	<b>0.9</b>	<b>0.2</b>	<b>2.6</b>	

**EXHIBIT "C1"**  
**ARVIN-EDISON WATER STORAGE DISTRICT**  
**WATER SUPPLY WATER QUALITY SUMMARY**

	Date	Flow <sup>1</sup> cfs	Import Source	Calcium		Magnesium		Sodium		Bicarbonate		Chloride		Nitrate		TDS mg/l	pH	EC umhos/cm	Hardness mg/l	SAR	Gypsum lbs/AF	Boron mg/l	Turbidity NTU
				mg/l	me/l	mg/l	me/l	mg/l	me/l	mg/l	me/l	mg/l	me/l	mg/l	me/l								
				<b>Intertie Pipeline</b>	03/09/22	0	WELLS(100%)	15.0	0.75	3.0	0.25	15.0	0.65	65	1.07								
02/08/22	-40	FKC(100%)	6.7		0.34	0.8	0.06	4.5	0.19	26	0.43	4.4	0.12	0.50	0.01	29	8.1	76	20	0.0	0.00	0.10	7.0
01/10/22	-40	FKC(100%)	9.8		0.49	0.9	0.08	5.7	0.25	41	0.67	3.5	0.10	0.54	0.01	44	7.9	87	28	0.5	0.45	0.05	4.5
12/13/21	N/A	DOWN FOR WINTER MAINTENANCE	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/09/21	0	FKC(100%)	22.0		1.10	4.6	0.38	31.0	1.34	93	1.52	18.0	0.51	4.90	0.08	150	8.4	299	73	1.6	0.72	0.20	4.0
10/07/21	0	CVC(17%)/WELLS(83%)	38.0		1.90	12.0	0.98	48.0	2.07	150	2.46	49.0	1.38	12.00	0.19	270	8.3	477	140	1.7	ND	0.17	4.5
09/09/21	0	CVC(23%)/WELLS(77%)	37.0		1.85	12.0	0.98	44.0	1.90	160	2.62	49.0	1.38	13.00	0.21	260	8.2	496	140	1.6	ND	0.14	5.3
08/09/21	0	CVC(7%)/KD WELLS(5%)/WELLS(88%)	31.0		1.55	10.0	0.82	43.0	1.85	130	2.13	44.0	1.24	11.00	0.18	240	8.5	451	120	1.7	ND	0.15	2.4
07/08/21	0	CVC(7%)/KD WELLS(6%)/WELLS(87%)	32.0		1.60	9.9	0.81	43.0	1.85	150	2.46	40.0	1.12	11.00	0.18	240	8.3	453	120	1.7	0.04	0.17	1.8
06/04/21	0	FKC(21%)/CVC(5%)/KD WELLS(4%)/WELLS(70%)	28.0		1.40	8.6	0.70	42.0	1.81	130	2.13	35.0	0.98	9.70	0.16	220	8.3	411	110	1.8	0.58	0.19	7.0
05/07/21	0	KD WELLS & KD MAIN(12%)/WELLS(88%)	36.0		1.80	11.0	0.90	40.0	1.72	150	2.46	38.0	1.07	11.00	0.18	240	8.1	439	130	1.5	ND	0.13	3.4
04/07/21	0	KD WELLS & KD MAIN(9%)/WELLS(91%)	36.0		1.80	12.0	0.98	41.0	1.77	150	2.46	39.0	1.10	10.00	0.16	240	8.3	431	140	1.5	ND	0.15	4.1
03/12/21	0	WELLS(100%)	32.0		1.60	9.1	0.75	42.0	1.81	120	1.97	35.0	0.98	11.00	0.18	220	8.5	406	120	1.7	ND	0.16	3.6
02/11/21	0	CVC(18%)/WELLS(82%)	33.0		1.65	8.9	0.73	50.0	2.16	120	1.97	48.0	1.35	10.00	0.16	240	8.3	448	120	2.0	ND	0.23	3.9
<b>Average</b>				<b>27.4</b>	<b>1.4</b>	<b>7.9</b>	<b>0.6</b>	<b>34.6</b>	<b>1.5</b>	<b>114.3</b>	<b>1.9</b>	<b>31.8</b>	<b>0.9</b>	<b>8.4</b>	<b>0.1</b>	<b>191.0</b>	<b>8.2</b>	<b>358.6</b>	<b>100.9</b>	<b>1.4</b>	<b>0.3</b>	<b>0.1</b>	<b>4.3</b>

Water Supply Water Quality Note: <sup>1</sup> Positive flow rate is reverse flow into the District. Where the reported value is ND, the method detection limit is entered.

Water Supply Water Quality Note: <sup>2</sup> Reverse flow into the District South Canal (Sycamore check gate was closed).

Water Supply Water Quality Note: <sup>3</sup> Constituent ran past sample hold time.

ND:	NONE DETECTED.	pH:	A MEASURE OF ACIDITY. A pH < 7 IS ACIDIC, pH = 7 IS NEUTRAL, pH > 7 IS BASIC. NORMAL RANGE IS 6.5 - 8.4. A pH > 8 MAY NEED TO BE BUFFERED FOR PESTICIDE APPLICATION. AFFECTS NUTRIENT AVAILABILITY.
NA:	NOT AVAILABLE OR NOT TESTED.		
mg/l:	MILLIGRAMS PER LITER; SAME AS PARTS PER MILLION (ppm).		
me/l:	MILLEQUIVALENTS PER LITER; SAME AS EQUIVALENTS PER MILLION (epm).	EC:	ELECTRICAL CONDUCTIVITY. A MEASURE OF WATER SALINITY; SOIL - IN MILLIMHOS PER CENTIMETER (mmho/cm); WATER - MORE OFTEN, IN MICROMHOS PER CENTIMETER (umhos/cm). EC < 700 (umhos/cm) HAS NO RESTRICTIONS FOR AGRICULTURAL USE. EC < 200 (umhos/cm) CAN REDUCE INFILTRATION RATE.
INTAKE:	SAMPLE TAKEN AT COTTONWOOD RD. SOUTH OF PANAMA LANE.		
NORTH:	SAMPLE TAKEN DOWNSTREAM OF SYCAMORE CHECK GATE.		
SOUTH:	SAMPLE TAKEN DOWNSTREAM OF TEJON CHECK GATE.		
INTERTIE:	TERMINUS OF SOUTH CANAL (S93 FOREBAY).		
SODIUM:	FOR SURFACE IRRIGATION: SAR < 3 IS GOOD. FOR SPRINKLER IRRIGATION: SODIUM < 3 me/l IS GOOD.	HARDNESS:	HARD WATER, INDICATING CALCIUM AND MAGNESIUM, IS BENEFICIAL FOR AGRICULTURE.
NITRATE:	NITRATE IN WATER SLIGHTLY REDUCES FERTILIZER REQUIREMENT.		
BICARBONATE:	BICARBONATE < 1.5 me/l IS SATISFACTORY FOR OVERHEAD SPRINKLERS.	SAR:	SODIUM ADSORPTION RATIO. A RATIO OF SODIUM TO CALCIUM AND MAGNESIUM. EVALUATE WITH EC. SAR = 0 - 3 AND EC > 400 ACCEPTABLE SAR = 3 - 6 AND EC > 900 ACCEPTABLE
CHLORIDE:	FOR SURFACE IRRIGATION CHLORIDE < 4 me/l IS GOOD.		
TDS:	TDS < 450 IS ACCEPTABLE FOR UNRESTRICTED USE.		
GYPSUM:	AMOUNT OF CALCIUM SULFATE IN POUNDS PER ACRE-FOOT OF WATER APPLIED. INCREASES WATER PERMEABILITY AND HELPS CORRECT EXCESS SODIUM. INCREASES CLAY FLOCCULATION FOR INCREASING PERMEABILITY.	BORON:	BORON < 0.50 mg/l IS SATISFACTORY FOR ALL CROPS. EXCESSIVE BORON IS PHYTOTOXIC (BURNS) TO PLANTS.

2022 AQUATIC PEST CONTROL TREATMENTS TO CANALS & SPREADING BASINS

Treatment Weeks (Monday)		Temps	Intake Stine Siphon	North						South										
				Bal. Res.	PP 24P1	NCSW	PP 41P1	PP 55P1	Syc. Ponds	Syc. Check	PP 32P1	PP 38P1	Tej. Ponds	Tej. Check	615 Check	729 Check	883 Check	Spill Way	Intertie Forbay	
			353+87	145+00	237+00	326+50	413+10	546+00	576+50	664+30	291+50	386+30		458+40	615+00	729+10	883+00	885+45	900+27	
JAN	01/03/22	36-62																		
	01/10/22																			
	01/17/22																			
	01/24/22																			
	01/31/22																			
FEB	02/07/22	33-67																		
	02/14/22																			
	02/21/22																			
	02/28/22																			
	02/28/22																			
MAR	03/07/22	43-73																		
	03/14/22																			
	03/21/22																			
	03/28/22																			
APR	04/04/22																			
	04/11/22																			
	04/18/22																			
	04/25/22																			
MAY	05/02/22																			
	05/09/22																			
	05/16/22																			
	05/23/22																			
	05/30/22																			
JUN	06/06/22																			
	06/13/22																			
	06/20/22																			
	06/27/22																			
JUL	07/04/22																			
	07/11/22																			
	07/18/22																			
	07/25/22																			
AUG	08/01/22																			
	08/08/22																			
	08/15/22																			
	08/22/22																			
	08/29/22																			
SEPT	09/05/22																			
	09/12/22																			
	09/19/22																			
	09/26/22																			
OCT	10/03/22																			
	10/10/22																			
	10/17/22																			
	10/24/22																			
	10/31/22																			
NOV	11/07/22																			
	11/14/22																			
	11/21/22																			
	11/28/22																			
DEC	12/05/22																			
	12/12/22																			
	12/19/22																			
	12/26/22																			

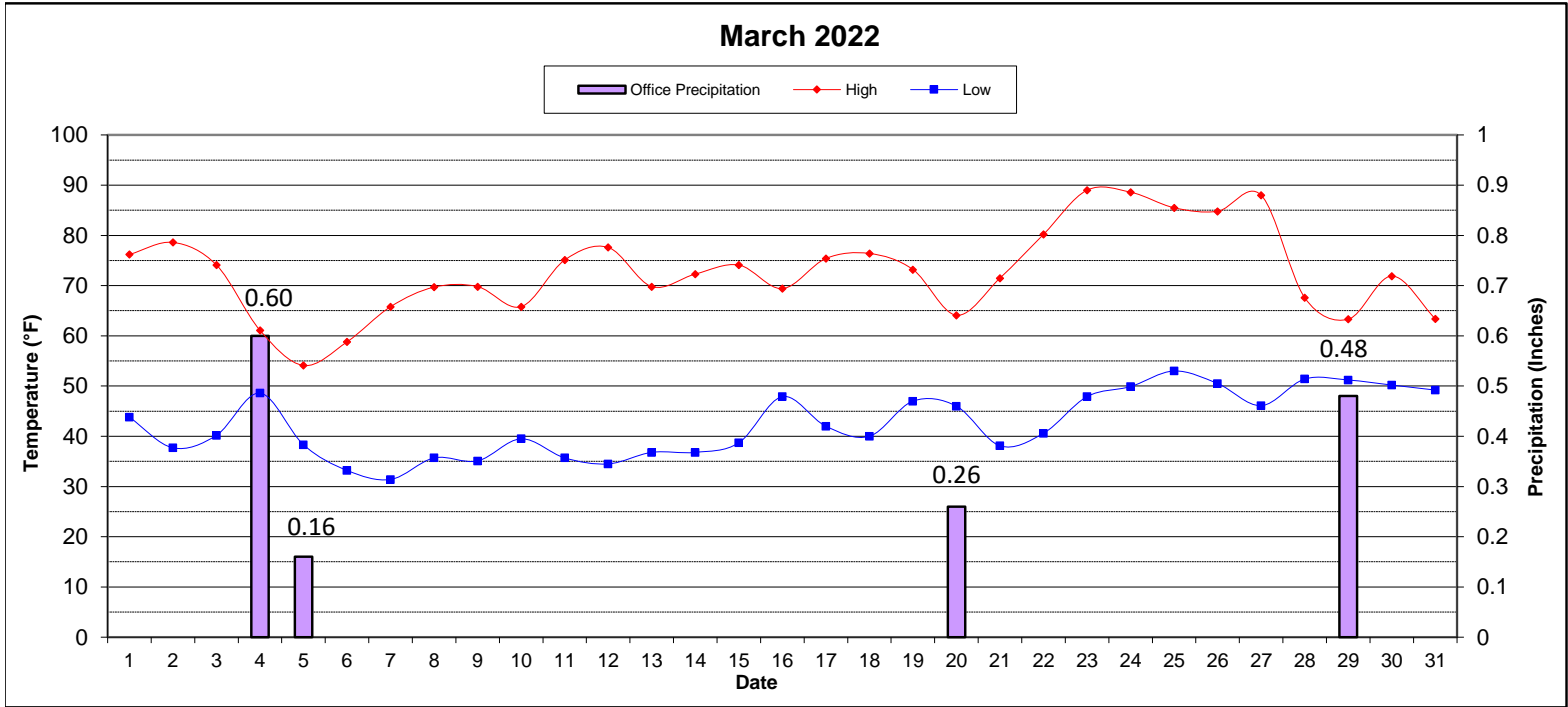
Treatment	Material	Labor	Total
Captain/Nautique	\$0	\$0	\$0
Phycomycin	\$0	\$0	\$0
Cascade	\$0	\$0	\$0
Teton/Hydrothol	\$0	\$0	\$0
Spreading Basins	\$0	\$0	\$0
Total	\$0	\$0	\$0

Shaded weeks are actual  
 Copper treatment (gal/lbs) for algae and pondweed (injected/broadcast)  
 Phycomycin (hydrogen peroxide) treatment (lbs) for algae (broadcast)  
 Endothall treatment (gal) for milfoil/basins (injected)  
 Endothall treatment (gal) for algae (injected)  
 Sonar/Clearcast/RoundUp Custom/MSO (gal)  
 Winter Maintenance

Year	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003
Year Type	Critical-High	Dry	Wet	Normal-Dry	Wet	Normal-Dry	Critical-Low	Critical-High	Dry	Dry	Wet	Normal-Wet	Normal-Wet	Normal-Dry	Dry	Wet	Wet	Normal-Dry	Normal-Dry
Amount	\$420,296	\$399,808	\$105,928	\$235,599	\$222,685	\$186,034	\$262,734	\$367,563	\$528,770	\$504,159	\$233,449	\$24,969	\$226,466	\$341,506	\$464,165	\$341,920	\$89,797	\$65,324	\$106,107



**EXHIBIT "D"**  
**ARVIN-EDISON WATER STORAGE DISTRICT**  
**SUMMARY OF CLIMATOLOGICAL OBSERVATIONS**



PRECIPITATION	BAL RES (1)		OFFICE (2)		SYCAMORE (3)		TEJON (4)		INTERTIE (5)	
	INCHES	% AVG.	INCHES	% AVG.	INCHES	% AVG.	INCHES	% AVG.	INCHES	% AVG.
AVG. MONTHLY	1.82		1.59		1.49		1.33		1.83	
AVG. YEAR TO DATE	5.79		7.18		6.91		6.03		5.32	
CURRENT MONTH	1.75	96%	1.50	94%	1.48	99%	1.86	140%	2.02	110%
CUMULATIVE (07/01/21 - 06/30/22)	6.58	114%	7.58	106%	9.38	136%	6.73	112%	6.91	130%

TEMPERATURE (6)	(°F)	DATE	TIME
MAXIMUM TEMPERATURE	88	3/23/2022	4:00 PM
AVERAGE MAXIMUM TEMPERATURE	73		
# DAYS THIS MONTH ABOVE 100 °F	0		
MINIMUM TEMPERATURE	33	3/7/2022	7:00 AM
AVERAGE MINIMUM TEMPERATURE	43		
# DAYS THIS MONTH BELOW 32 °F	1		

WIND (6)	M.P.H.	DATE	TIME	DRCTN
MAXIMUM WIND SPEED	19.2	3/27/2022	2:00 PM	SE
AVERAGE WIND SPEED	4.0			
AVERAGE WIND SPEED @ 8:00 AM	3.2			

BAROMETRIC PRESSURE (7)	IN. HG	DATE	TIME
AVERAGE PRESSURE @ 8:00 AM	29.61		
MAXIMUM PRESSURE	29.77	3/6/2022	12:00 PM
MINIMUM PRESSURE	29.11	3/27/2022	5:00 PM

**NOTES**

(1) October 2018 to Present data gathered from District rain gauges  
(2) 1975 to Present data gathered from District rain gauges  
(3) 1968 to Present data gathered from District rain gauges  
(4) 1967 to Present data gathered from District rain gauges  
(5) October 2018 to Present data gathered from District rain gauges  
(6) Data retrieved from CIMIS (<http://www.cimis.water.ca.gov/WSNReportCriteria.aspx>)  
(7) Data retrieved from Weather Underground (<https://www.wunderground.com/us/ca/arvin/zmw:93203.1.99999>)  
Precipitation Day is 8:00 AM to 8:00 AM

**EXHIBIT "E"**  
**ARVIN-EDISON WATER STORAGE DISTRICT**  
**WY2021 ENERGY CONSUMPTION AND POWER DEMAND**

ENERGY CONSUMED - KWH							TOTAL DEMAND - KW						
Month	Forrest Frick PP	Distrib. System	Spreading	Wells	Intertie PP	Total	Forrest Frick PP	Distrib. System	Spreading	Wells	Intertie PP	Total	Load Factor
<b>MAR 21</b>	88,700	2,479,579	14,996	6,161,961	3,553	8,748,789	1,197	12,574	173	15,643	6	29,593	40%
<b>APR</b>	556,206	4,277,014	17,268	10,765,374	3,628	15,619,490	1,578	13,994	322	20,620	6	36,520	59%
<b>MAY</b>	498,414	4,857,866	43,811	13,362,056	4,004	18,766,151	1,883	14,195	785	21,098	6	37,967	66%
<b>JUN</b>	616,755	5,088,519	44,002	13,815,490	4,067	19,568,833	2,285	13,428	783	20,484	7	36,987	73%
<b>JUL</b>	545,509	5,297,896	26,235	13,729,032	4,394	19,603,066	1,506	13,829	331	20,488	8	36,162	73%
<b>AUG</b>	486,033	5,275,133	37,622	13,054,560	4,277	18,857,624	1,593	14,411	338	19,745	7	36,094	70%
<b>SEP</b>	498,728	4,831,533	34,228	10,798,227	3,978	16,166,693	1,540	13,987	342	16,988	7	32,863	68%
<b>OCT</b>	214,437	3,099,353	34,423	8,249,635	3,941	11,601,790	1,210	13,045	323	16,471	7	31,056	50%
<b>NOV</b>	858,049	1,552,014	2,121	153,825	3,652	2,569,662	5,198	9,263	156	1,138	11	15,764	23%
<b>DEC</b>	195,643	186,245	1,359	471,794	1,898	856,938	2,262	6,732	2	5,121	6	14,122	8%
<b>JAN 22</b>	980,490	490,465	1,322	109,887	102,539	1,684,703	2,667	6,297	2	707	174	9,847	23%
<b>FEB</b>	1,626,646	2,083,526	9,815	141,999	30,838	3,892,823	4,883	11,548	334	3,869	160	20,795	28%
<b>TOTAL</b>	<b>7,165,610</b>	<b>39,519,143</b>	<b>267,201</b>	<b>90,813,841</b>	<b>170,767</b>	<b>137,936,562</b>							

Notes: - Since 2005 KW records reflect non-simultaneous demands.  
- Energy use for lighting accounts for approximately 90,000 kWh/month at District wellfields and 4,000 kWh/month at the Intertie Pumping Plant

EXHIBIT "F"  
 ARVIN-EDISON WATER STORAGE DISTRICT  
**2022 WATER YEAR WELLFIELD PRODUCTION - AF**

Month	Bal Res		North Canal 5		Wellfield						Total		
	AF	% of Historical Max	AF	% of Historical Max	North		Sycamore		Tejon		AF	AF / Day	% of Historical Max
					AF	% of Historical Max	AF	% of Historical Max	AF	% of Historical Max			
MAR - 22	0	0%	988	81%	2,003	90%	1,886	29%	1,495	27%	6,372	206	41%
APR													
MAY													
JUN													
JUL													
AUG													
SEP													
OCT													
NOV													
DEC													
JAN - 23													
FEB													
<b>Total</b>	0		988		2,003		1,886		1,495		6,372	21	4%
<b>Ratio</b>	0%		16%		31%		30%		24%		100%	<b>Average</b>	
<b>Wells</b>	4		5		14		34		29		86		



**EXHIBIT "H-1"**  
**ARVIN-EDISON WATER STORAGE DISTRICT**  
**STATIC VS PUMPING WATER LEVELS IN DISTRICT WELLS - MARCH 2022**  
 ALL VALUES IN FEET

	WELL #	STATIC LEVEL	PUMPING LEVEL	BOWL DEPTH	TOTAL DEPTH	DRAW DOWN	BOWL COVERAGE
<b>NORTH CANAL (23)</b>	N1	421	483	610	840	62	127
	N2	444	552	700	840	109	148
	N3	379	407	610	840	28	203
	N4	435	460	550	864	25	90
	N5	451	461	650	864	9	189
	N6	497	601	640	920	104	39
	N7	454	478	600	1010	23	122
	N8	401	438	560	970	37	122
	N9	441	550	700	990	109	150
	N10	433	487	560	990	54	73
	N11	403	430	562	1020	28	132
	N12	450	480	600	1030	30	120
	N13	452	482	600	1000	30	118
	N14	436	457	540	900	21	83
	N15	370	506	700	1200	136	194
	N16	377	455	600	1200	79	145
	N17	384	490	610	1200	106	120
	N18	438	570	610	1190	132	40
	N19	450	491	760	1300	41	269
	N20	575	605	820	1020	30	215
	N21	449	524	660	950	75	136
	N22	440	461	680	990	21	219
	N23	433	448	680	990	15	232
Avg	435	492					

	WELL #	STATIC LEVEL	PUMPING LEVEL	BOWL DEPTH	TOTAL DEPTH	DRAW DOWN	BOWL COVERAGE
<b>TEJON (29)</b>	71	490	511	800	1050	21	289
	72	486	520	800	1045	35	280
	73	484	516	800	1018	32	284
	74	472	511	800	1084	39	289
	75	474	497	800	1045	23	303
	76	464	513	700	996	49	187
	77	465	548	800	1066	83	252
	78	470	507	800	1038	37	293
	79	467	518	700	1032	51	182
	80	454	555	800	996	102	245
	81	437	481	700	925	44	219
	82	363	414	800	996	51	386
	83	488	541	800	996	53	259
	84	384	423	700	955	39	277
	86	497	532	800	996	35	268
	87	495	520	800	984	25	280
	88	488	520	800	948	32	280
	89	467	504	800	996	37	296
	90	372	414	700	996	42	286
	91	N/A	N/A	700	996	N/A	N/A
	92	534	587	800	996	53	213
	93	513	558	800	996	45	242
	94	516	601	860	996	85	259
	95	484	514	800	996	30	286
	96	539	594	800	996	55	206
	98	488	525	760	1340	37	236
	99	480	514	760	1340	34	246
	100	442	502	760	1340	60	258
	101	464	523	760	1310	59	237
Avg	471	517					

	WELL #	STATIC LEVEL	PUMPING LEVEL	BOWL DEPTH	TOTAL DEPTH	DRAW DOWN	BOWL COVERAGE
<b>SYCAMORE (34)</b>	1	442	481	705	800	39	224
	2	447	496	690	876	49	194
	4	464	492	700	876	28	208
	5	480	510	720	876	30	210
	6	413	466	690	876	53	224
	7	453	501	700	830	49	199
	8	400	451	640	860	51	189
	9	474	515	700	886	42	185
	10	450	484	690	850	35	206
	11	448	494	700	880	46	206
	12	467	504	700	860	37	196
	13	432	469	700	850	37	231
	14	397	457	670	810	60	213
	15	456	606	710	820	150	104
	16	453	541	700	888	88	159
	17	414	491	650	820	76	159
	18	428	454	650	820	25	196
	20	426	463	680	804	37	217
	21	441	459	690	856	18	231
	22	421	446	610	792	25	164
	23	420	450	600	788	30	150
	24	430	462	580	780	32	118
	25	411	432	610	777	21	178
	26	424	461	690	816	37	229
	28	392	445	660	782	53	215
	29	443	468	690	787	25	222
	31	436	464	660	725	28	196
	32	395	446	640	739	51	194
	33	441	492	700	780	51	208
	34	N/A	N/A	700	781	N/A	N/A
	35	437	508	700	800	72	192
	36	448	478	600	820	30	122
	37	445	470	540	820	25	70
	38	440	476	860	1270	36	384
Avg	435	480					

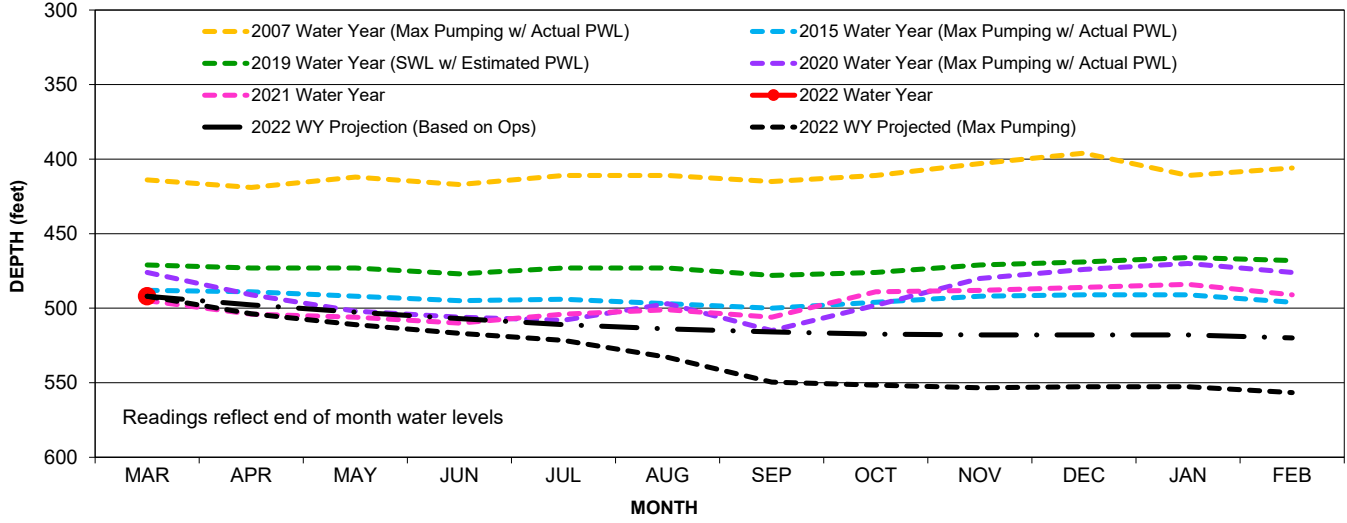
MONTHLY SUMMARY - AVERAGE WATER LEVELS						
READINGS END OF	STATIC LEVELS			PUMPING LEVELS		
	N. CANAL	SYCAMORE	TEJON	N. CANAL	SYCAMORE	TEJON
MAR-21	432	428	469	495	471	549
APR	439	436	479	504	497	564
MAY	439	454	520	506	519	575
JUN	453	464	532	510	532	599
JUL	445	469	540	504	541	600
AUG	445	462	548	501	529	605
SEP	448	464	550	506	532	607
OCT	432	445	512	489	502	566
NOV	434	429	501	488	483	547
DEC	431	426	477	486	480	524
JAN	430	421	465	484	476	512
FEB	434	421	463	491	474	510
MAR-22	435	435	471	492	480	517
CHANGE TO-DATE	-3	-7	-2	3	-9	32

OUT OF SERVICE (5)	*Bowl depth measured to top of pump
AIRLINE FAILURE (15)	*Pumping levels are estimated based on
FAILED (2)	previous draw down records. (6 month average)
86 TOTAL WELLS	*Airline failure levels were obtained with acoustic sounder

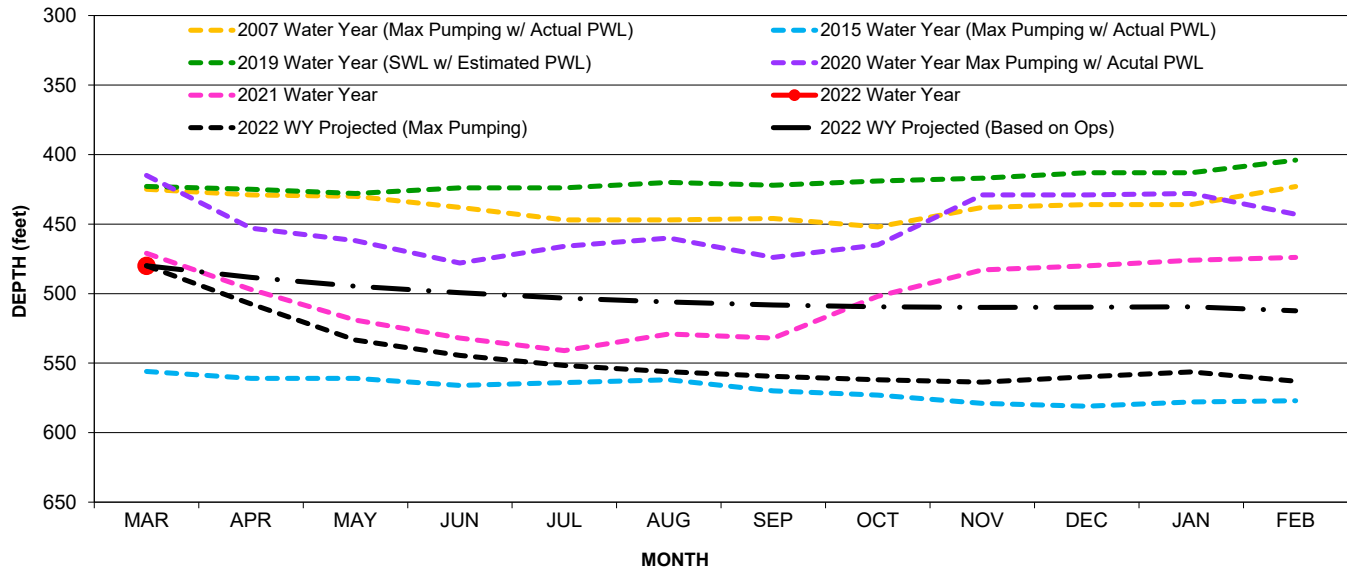


**EXHIBIT "H-2"**  
**ARVIN-EDISON WATER STORAGE DISTRICT**  
**WELLFIELD PUMPING WATER LEVELS - 2007, 2015, AND 2019-22**

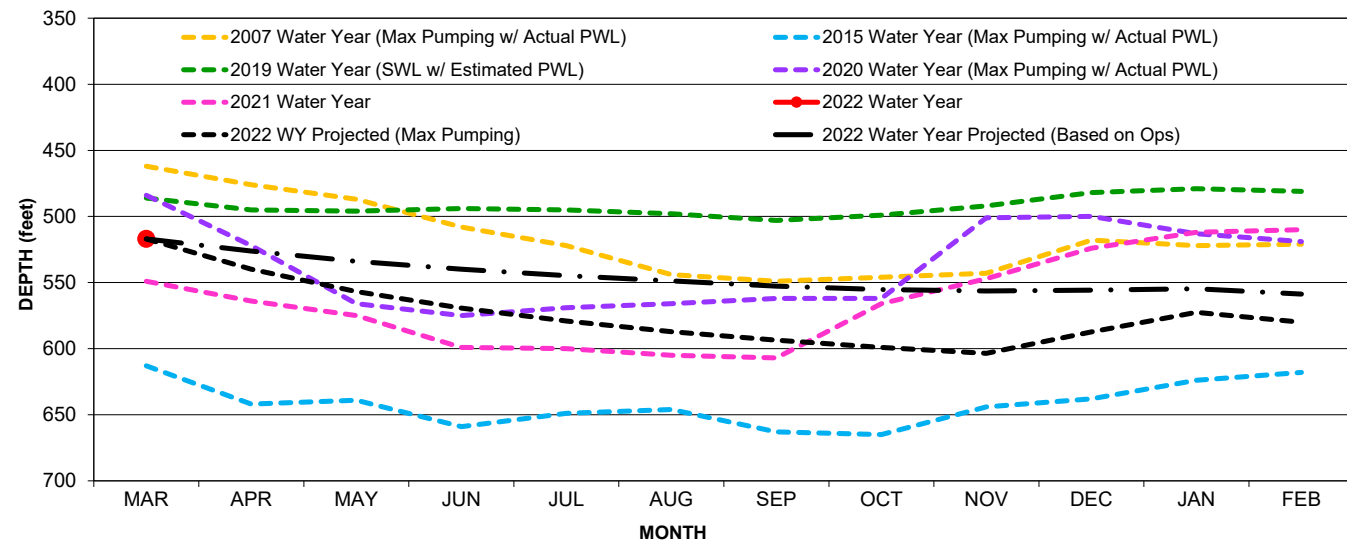
**NORTH CANAL**



**SYCAMORE WELLFIELD**



**TEJON WELLFIELD**



# EXHIBIT "I"

## March 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
<p><b>Board—</b> <b>Red—</b> <b>JSM—</b> <b>Blue—</b> <b>MD—</b> <b>Orange—</b> <b>Staff—</b> <b>Green—</b></p>	<p>ACWA – Association of California Water Agencies ACSD - Arvin Community Services District BOD - Board of Directors COB - City of Bakersfield CVC - Cross Valley Canal KC - Kern County</p>	<p><b>1 Personnel Issues (Zoom)</b>  <b>District Issues w/Camp</b>  <b>Water Supply (MTs)</b>  <b>WW BOD w/Martinez/ Giumarra</b>  <b>Prosun Solar (Zoom)</b></p>	<p><b>2 KGA Managers w/Yurosek (Zoom)</b>  <b>P&amp;P Project Update</b>  <b>PWRPA BOD (WebEx)</b></p>	<p><b>3 Water Quality Ad-Hoc w/Camp/Giumarra (Visalia)</b>  <b>Water Supply w/FWA (Visalia)</b>  <b>KRWCA BOD (Johnston)</b></p>	<p><b>4 KGA Managers w/ Yurosek (Zoom)</b>  <b>Friant Managers (Lindsay)</b></p>	<p><b>5</b></p>
<p><b>6</b></p>	<p><b>7 WWB Land Repurposing (MTs)</b>  <b>JDA (TC)</b>  <b>District issues w/Camp (TC)</b></p>	<p><b>8 SGMA Update w/EKI &amp; Legal Counsel (MTs)</b>  <b>AEWSD BOD</b></p>	<p><b>9 EKI Model (MTs)</b>  <b>Water Supply w/FWA (Lower Tule)</b></p>	<p><b>10 KGA Managers SGMA Meeting</b>  <b>Millerton Lake Forecasting (MTs)</b></p>	<p><b>11 Kern Managers SGMA Meeting (Zoom)</b>  <b>MWD Update (TC)</b>  <b>Water Supply w/FWA (Visalia)</b>  <b>USBR Update (MTs)</b>  <b>SJVAPCD (TC)</b></p>	<p><b>12</b></p>
<p><b>13</b></p>	<p><b>14 FWA EC w/Camp (Lindsay)</b>  <b>Land Repurposing w/ WWGSA</b></p>	<p><b>15 Eastside Intertie w/Legal Counsel (TC)</b>  <b>Prosun Solar (Zoom)</b></p>	<p><b>16 Power Planning w/Camp CAP (MTs)</b>  <b>Friant Water Supply w/FWA (MTs)</b></p>	<p><b>17 KGA Managers SGMA w/Yurosek</b></p>	<p><b>18 Kern Managers SGMA w/Yurosek</b>  <b>Water Supply w/FWA (MTs)</b></p>	<p><b>19</b></p>
<p><b>20</b></p>	<p><b>21 FWA Finance Committee (Giumarra)</b>  <b>KGA EC (Yurosek)</b>  <b>Sunset Spreading Electrical Kickoff w/Agilitech</b></p>	<p><b>22 Temporary Contracts (TC)</b>  <b>Power Planning w/RBI</b></p>	<p><b>23 KGA BOD w/Yurosek</b>  <b>WWB Special Mtg (Martinez)</b>  <b>CVC Ad-Hoc (GoTo)</b>  <b>Water Supply Update (MTs)</b>  <b>MWD Update (TC)</b>  <b>District Issues w/Camp</b></p>	<p><b>24 KGA Managers w/ Yurosek</b>  <b>FWA BOD w/Giumarra (Visalia)</b>  <b>District Issues w/Camp (TC)</b></p>	<p><b>25 WRMWSD Coordination (Grapevine)</b>  <b>KGA Special Mtg. (Yurosek)</b>  <b>HR Interviews</b></p>	<p><b>26</b></p>
<p><b>27</b></p>	<p><b>28 HR Interviews</b>  <b>PID w/Adams (TC)</b>  <b>WQ w/USBR (MTs)</b>  <b>Kirbian Memorial (Hilltop)</b>  <b>Water Supply w/FWA (MTs)</b></p>	<p><b>29 AE Solar Opportunities</b>  <b>Water Supply w/FWA (MTs)</b>  <b>Hough Memorial</b>  <b>District Issues w/Camp (TC)</b>  <b>DWR, MWD &amp; KCWA Coordination (MTs)</b>  <b>Arvin Mgmt. Area Plan Update (Mts)</b></p>	<p><b>30 SGMA Update w/EKI &amp; Bezdeck</b>  <b>FFPP Load Capacity Issues w/PG&amp;E/PWRPA (WebEx)</b>  <b>ETGSA Subsidence (Terra Bella)</b>  <b>Water Mgmt w/Fresno ID (Tulare)</b></p>	<p><b>31 KGA Managers w/ Yurosek</b>  <b>ETGSA (Camp) WebEx</b>  <b>FFPP Load Capacity Issues (TC)</b></p>	<p>KCWA - Kern County Water Agency KRGSA - Kern River Groundwater Sustainability Agency KRWCA - Kern River Watershed Coalition Authority MAR - Managed Aquifer Recharge MTs - Microsoft Teams MWD - Metropolitan Water District NKWSD - North Kern Water District RFG - Restoration Flow Guidelines RWA - Restoration Water Account SJVWIA - San Joaquin Valley Water Infrastructure Authority SJRRP - San Joaquin River Restoration Program</p>	<p>SGMA - Sustainable Groundwater Management Act SWID - Shafter Wasco Irrigation District TF - Temperance Flat Steering Committee TC - Teleconference WAKC - Water Association of Kern County WBC - Wage &amp; Benefit Comm. WRMWSD - Wheeler Ridge-Maricopa Water Storage District WWGSA - White Wolf Groundwater Sustainability Program WMP - Water Mgmt. Program WQSA - Water CAP - Water Supply Caucus</p>