



EMERGENCY ORDINANCE TO ESTABLISH AN
EXTRACTION LIMITATION FOR THE MID KAWEAH
GROUNDWATER SUSTAINABILITY AGENCY SERVICE
AREA

Adopted: May 1, 2022

Mid-Kaweah Groundwater Sustainability Agency
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Acronyms and Abbreviations

AF	Acre-Foot
DWR	California Department of Water Resources
ET	Evapotranspiration
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
MKGSA	Mid-Kaweah Groundwater Sustainability Agency
SGMA	Sustainable Groundwater Management Act

Definitions

Acre-Foot	An Acre-Foot of water is equivalent to one acre of ground cover one foot deep in water or 325,851 gallons of water.
Emergency Ordinance	An ordinance enacted for a period of time to avoid an undesirable outcome and to assist in the achievement of groundwater sustainability.
Evapotranspiration	The process by which water is transferred from the land to the atmosphere by evaporation from the soil and other surfaces, and by transpiration of plants. For the purposes of this program evapotranspiration will be measured by utilizing satellite imagery and analysis provided by Land IQ.
Groundwater Dependent	Parcels that are operated with only groundwater and do not have any surface water applied for usage such as industrial or agricultural production.
Parcel	A parcel is defined as a unit of land which has a singular Assessor's Parcel Number (APN) assigned by Tulare County.

Pumping Limit	The total amount of groundwater that can be used on each acre within the boundaries of the Mid-Kaweah Groundwater Sustainability Agency, as set forth in Section 2.1 of this Emergency Ordinance.
Service Fee	Those fees associated with tracking and administering the Pumping Limit. Costs shall include and are not limited to costs associated with tracking evapotranspiration (monthly LandIQ Fees), costs for the Water Dashboard, costs for staff to oversee and assist in the tracking of groundwater pumping, and costs of materials and supplies to assisting the tracking of groundwater pumping.
Sustainable Groundwater Management Act	Legislation passed in 2014 requiring local agencies to form groundwater sustainability agencies to develop and implement groundwater sustainability plans and avoid undesirable results and achieve groundwater sustainability within 20 years.
Water Year	The 12-month period starting on October 1 st for a given year through September 30 th of the following year. The designated year is defined as the year in which the September 30 th date falls. For example, Water Year 2023 is the period from October 1, 2022 to September 30, 2023.

Article I. General

1.1 Mid-Kaweah Groundwater Sustainability Agency

The Mid Kaweah Groundwater Sustainability Agency (Agency) is a joint powers authority formed on September 14, 2015, under the Joint Powers Agreement – Formation of the Mid-Kaweah Groundwater Subbasin Joint Powers Authority, and whose members include the Tulare Irrigation District, the City of Tulare, and the City of Visalia. The Agency is the groundwater sustainability agency (GSA) responsible for groundwater management in its jurisdictional boundary or service area, which is located in the Kaweah Subbasin (Subbasin). The Subbasin has been designated a high-priority groundwater basin by the California Department of Water Resources (DWR). The Agency adopted a groundwater sustainability plan (GSP) in 2020 and submitted the GSP to the DWR for review on January 31, 2020.

1.2 Purpose

The purpose of this Emergency Ordinance (Ordinance) is to limit groundwater extractions in the Agency service area to ensure compliance with the GSP adopted pursuant to the requirements of the Sustainable Groundwater Management Act (SGMA). It is not the purpose of this Ordinance to determine or alter water rights entitlements, including those which may be asserted pursuant to California Water Code sections 1005.1, 1005.2, or 1005.4. In the event any court comprehensively determines groundwater rights in the Subbasin, the Agency will review and amend any Ordinance in place at that time to ensure it is consistent with water rights priorities in any final judgment entered in the adjudication.

1.3 Authority

The Agency is a lawfully formed GSA pursuant to SGMA and has the powers and authorities provided to GSAs through the legislative enactment of SGMA and amendment to the Water Code. Water Code section 10725.2 states: “A groundwater sustainability agency may adopt rules, regulations, ordinances, and resolutions for the purpose of this part, in compliance with any procedural requirements applicable to the adoption of a rule, regulation, ordinance, or resolution by the groundwater sustainability agency.”

1.4 Groundwater Sustainability Plan

Pursuant to Water Code section 10725, a GSA may exercise the powers described in Chapter 5 provided the GSA adopts and submits a GSP to the DWR. This Ordinance is designed to implement the provisions of the Agency GSP and may be amended at any time if necessary to achieve consistency with the GSP and any steps needed to achieve sustainability.

1.5 Findings

Pursuant to the technical appendices attached hereto as Appendix A and incorporated herein, the Agency finds that groundwater conditions in the Agency service area are being adversely affected by drought conditions. Due to the severity of the drought conditions and the impact on groundwater conditions in the Subbasin and the Agency service area, the Agency finds that it is necessary to limit groundwater extractions in order to avoid undesirable results and maintain compliance with SGMA.

ARTICLE 2. Emergency Restrictions

2.1 Pumping Limits

The Agency hereby limits the use of groundwater to **2.50 acre-feet (AF)** per acre, measured as Evapotranspiration (ET) for land within its service area (Pumping Limit). This Pumping Limit is based on the estimate and negotiation of native yield for the Subbasin and the estimated amount of groundwater afforded to lands within the Agency per the Water Accounting Framework. The Pumping Limits are represented and supported by the GSP and the technical information in Appendix A. If any groundwater user uses less ET water than the amount permitted herein, the groundwater user may carryover 100% of the unused ET into the following year.

Any parcel with di minimis use, which is defined as water use less than 2 AF in total, shall not be restricted to the Pumping Limit as long as total usage thereon is less than 2 AF per year.

The Pumping Limit shall apply to any parcel assigned an Assessor's Parcel Number (APN) greater than 4 acres that is actively and has historically been operated for irrigated agriculture. In the event that a groundwater user with less than 4 acres wishes to request the Agency provide it a specific allocation, the groundwater user can do so by submitting a written request to the Agency Board of Directors.

The City of Visalia and the City of Tulare shall strive not to exceed current groundwater pumping quantities per acre within their jurisdictional areas (as established in the GSP Water Budget). The Agency shall estimate the current groundwater pumping quantities per acre and provide to the Cities for reference.

The Pumping Limit shall be applied over the course of a Water Year, unless otherwise directed by the Agency Board of Directors.

2.2 Effective Date

The Ordinance shall become effective upon adoption and may be added to, amended, and/or repealed at any time by resolution of the Board of Directors of the Agency. The Agency intends the Ordinance to be in place for a limited time and no longer than necessary to resolve the emergency conditions in section 1.04 and the supporting appendices.

2.3 Measurement

For purposes of this Ordinance, groundwater use will be measured according to the evapotranspiration method described in this subsection. Crop ET is estimated using remote sensing data from Landsat satellites. The Agency has contracted with Land IQ, a consulting firm specializing in remote sensing analytics and agronomics. The satellite data is entered into a Land IQ managed model, which estimates the ET rate and ET spatial distribution of an area in any given time period. Land IQ satellite ET data, when calibrated to land-based ET and/or climate stations and validated with crop surveys, provides an estimate of crop ET (i.e. consumptive use) that is of accuracy for management of groundwater extractions. ET resulting from groundwater extractions will be calculated using the total ET measured by LandIQ subtracted by the fraction of precipitation and surface water the crop consumes.

2.4 Native Yield

The Ordinance will allocate the Native Yield to each Parcel based upon the Water Accounting Frameworks included in the MKGSA GSP. Each Parcel shall be allocated a Native Yield initially of 0.83 AF/acre as ET. The Native Yield is subject to change based upon the revisions or updates to the Water Accounting Framework. Native Yield can be transferred per Section 2.8 below. See Appendix B for a chart of groundwater to meet ET.

2.5 Relief Pumping

The Ordinance provides two tiers of voluntary Relief Pumping to meet ET above the Native Yield but below the pumping limit set forth in Section 2.1. Relief Pumping to meet ET is offered on a voluntary basis, and there is no requirement to participate in either tier of the Relief Pumping program. However, any water that is pumped in excess of the Pumping Limit set forth in section 2.1 to meet ET will be treated as Mitigation Pumping or Penalty pumping to meet ET. Relief Pumping to meet ET is not guaranteed, and access to relief pumping may be reduced or eliminated by an amendment to the Ordinance. See Appendix B for a chart of groundwater to meet ET.

2.5.1 Tier 1 Relief Pumping

Tier 1 Relief Pumping includes any water pumped over the Native Yield (0.83 AF/acre of ET) up to 1.67 AF/acre of ET. The Agency will invoice Groundwater Dependent growers \$160 per AF for Tier 1 relief water, which consists of a Service Fee and a fee equivalent to replace the water pumped from groundwater. The Agency will invoice eligible groundwater users with access to surface water supplies \$10 per AF for Tier 1 relief water, which consists of a service fee, and acknowledges that use of surface water replenishes groundwater and historical costs associated with this have already been paid. Tier 1 water may be transferred to parcels within common ownership/management or upon approval of the Agency per Section 2.8 below.

2.5.2 Tier 2 Relief Pumping

Tier 2 relief pumping is any water pumped in excess of Tier 1 pumping levels, up to 2.50 AF/acre. The Agency will invoice Groundwater Dependent growers \$210 per AF for Tier 2 relief water, which consists of a Service Fee and a fee equivalent to replace the water pumped from groundwater. The Agency will invoice eligible groundwater users with access to surface water supplies \$10 per AF for Tier 2 relief water, which consists of a service fee and acknowledges use of surface water replenishes groundwater and historical costs associated with this have already been paid. Tier 2 water may be transferred to parcels within common ownership/management or upon approval of the Agency per Section 2.8 below.

2.6 Excess Pumping

Pumping in excess of the Pumping Limit (amounts allowed in section 2.1, 2.4, and 2.5) will be treated as excess pumping pursuant to this Ordinance. The Agency has established two tiers of excess pumping: A Mitigation Tier and a Penalty Tier.

2.6.1 Mitigation Tier

The Mitigation Tier shall apply to groundwater use in excess of the Pumping Limit, up to 3.50 AF/acre. The Agency will charge \$260 for each AF of Mitigation Tier ET or portion thereof. This Mitigation Tier fee is not punitive, but is based on estimates of replacement costs and/or

purchasing water in a compacted market during significant drought conditions. ET water within the Mitigation Tier is non-transferrable to other parcels. Groundwater users cannot elect to purchase Mitigation Tier water.

2.6.2 Penalty Tier

The Penalty Tier shall apply to groundwater use in excess of the Mitigation Tier up to 4.5 AF/acre. The Agency will charge \$500 for each acre foot of Penalty Tier ET or portion thereof. The Penalty Tier fee is not punitive, but is based on estimates of replacement costs and/or purchasing water in a compacted market during significant drought conditions. In addition to the imposition of the Penalty Tier fee, a groundwater user that pumps in Penalty Tier water will be subject to a reduction in the base pumping allowed in section 2.1 on a one-to-one basis in a future Water Year. Thus, if a groundwater user uses 50 acre feet of Penalty Tier water in one Water Year, the groundwater user's Pumping Limit would be reduced in the following Water Year by 50 AF. ET water within the Penalty Tier is non-transferrable to other parcels. Groundwater users cannot elect to purchase Mitigation Tier water.

2.7 Fees for Relief Pumping and Mitigation Tier

Costs identified for Relief Pumping (Tier 1 and Tier 2), Mitigation Tier ET, and Penalty Tier ET were established with the data provided in Appendix C. Service Fees were estimated by establishing the current costs needed to track fundamental use of groundwater to comply with the MKGSA GSP. The Service Fee costs were rounded up to the nearest whole dollar amount. The cost of replacement water for groundwater dependent users, and the Mitigation Tier were based on the current market of water available to the Tulare Irrigation District.

2.8 Transferability

A groundwater user may transfer Native Yield and Relief Pumping Tier supplies to other parcels under common management or ownership, provided such transferee parcels are registered in the Agency's Water Dashboard, and provided that such transferee parcel is no no further than 5 miles from the transferor parcel.

2.9 Invoicing

The amount of net groundwater consumptive use (ET) will be calculated monthly, approximately 30 days after the end of the prior month, using one of the measurement methods described in Section 2.3. The Agency will make the information available to growers and landowners on a digital platform called the Agency's Water Dashboard.

Upon the Effective Date identified on Section 2.2, a groundwater user will be given 45-days to inform the Agency that it will not participate in Relief Pumping identified in Section 2.4. Based upon the election to receive Relief Pumping an invoice will be sent to each landowner/grower based upon the amount of Relief Pumping used by the parcel. A groundwater user will have consistent access to the Water Dashboard to track monthly ET usage. At the conclusion of a Water Year, the Agency will evaluate the total ET usage by each acre and do an annual accounting of the total ET used by each acre. Each groundwater user will receive an invoice identifying the amount of ET used and any charges for ET usage in excess of the Pumping Limit.

ARTICLE 3. Enforcement and Appeal

3.1 Enforcement

The Agency adopts this Ordinance pursuant to Water Code section 10725.2 and has enforcement authority under Water Code section 10732. Any person who acts to violate the provisions of this Ordinance shall be subject to the criminal and civil penalties set forth in SGMA, in addition to any penalties and fees set forth herein.

3.2 Appeal or protest

Within thirty (30) days of receiving an invoice, any groundwater user may protest the amount invoiced or the method used to determine such amount. The written protest must be submitted to the Agency in writing. Agency staff shall review the protests and resolve any errors or administrative matters. No substantive change to an invoice shall be made before the written protest is investigated by staff, technical consultants, and any advisory committee that the Agency may establish. The protest, the results of the investigation and any recommendation from staff shall be provided to the Agency Board of Directors for decision with within ninety (90) days of receipt of the protest. The Board shall act on the written protest and supporting documentation within sixty (60) days of receipt of the staff recommendation.

ARTICLE 4. Other Laws

4.1 California Environmental Quality Act

This Ordinance is exempt from the California Environmental Quality Act (CEQA) pursuant to Water Code section 10728.6 and CEQA Guidelines sections 15061(b)(3), 15307 and 15308.

4.2 Local Land Use

The extraction allocations established under this ordinance are consistent with the land use elements of the applicable general plans to the extent that there is sufficient sustainable yield in the Basin to serve the land use designations therein.

4.3 Water Use

The Ordinance does not determine or alter water right entitlements, including those which may be asserted pursuant to California Water Code sections 1005.1, 1005.2 or 1005.4. In the event a court of competent jurisdiction comprehensively determines groundwater rights in the Subbasin, it is the intent of the Board to amend this ordinance in a manner consistent with water right priorities in any final judgment entered in the adjudication.

Appendix A

MKGSA Representative Monitoring Well Current Conditions and MKGSA Water Accounting Framework

Table 1- Summary of Representative Monitoring Well Data for 2020

Conditions	Number	Percentage
Trending on Sustainability Path	2	5.8%
Below 2025 IM	2	5.8%
Trending to be below 2025 IM ahead of 2025	16	47%
Below MT	1	2.9%
Dry or no recent Data	13	38%
Totals	34	

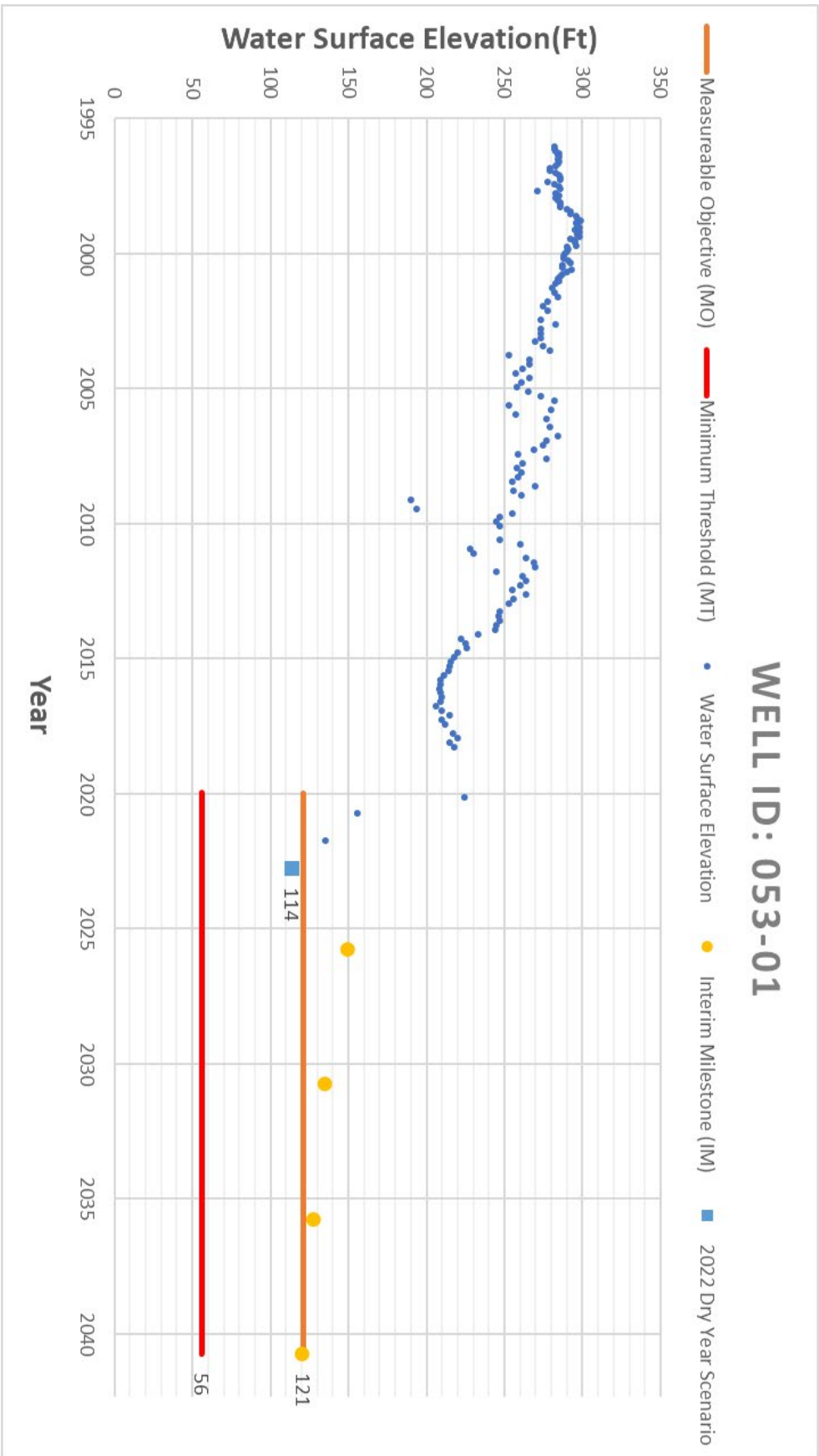
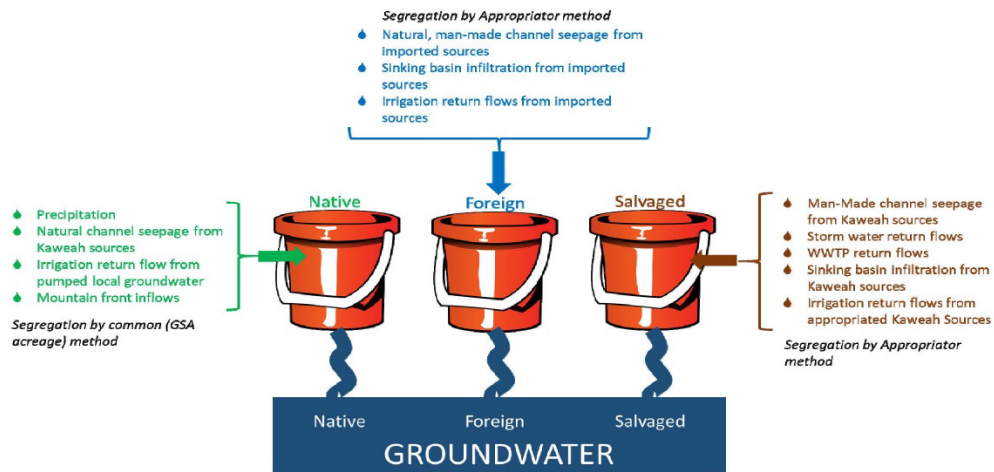


Figure 1 - Sample of Representative Monitoring Well trending below the Measurable Objective projected for 2022.

Kaweah Subbasin Water Accounting Framework Values in Acre-feet



Native Water				
	East	Greater	Mid	Total
Perc of Precip (Ag and 'Native' non-Ag land)	23,666	44,213	20,974	88,854
Streambed Perc from Kaweah River Sources	16,767	31,324	14,860	62,952
Irrigation Ret. Flow from Pumped GW	41,484	77,501	36,766	155,752
Mountain Front Recharge	14,976	27,978	13,273	56,227
Total Native	96,894	181,017	85,874	363,784
GSA % of Total Native	27%	50%	24%	

Foreign Water				
	East	Greater	Mid	Total
Streambed Perc from Imported Sources	0	11,730	2,523	14,253
Ditch Perc from Imported Sources	0	1,204	21,745	22,949
Basin Perc from Imported Sources	0	1,050	14,305	15,355
Irrigation Ret. Flow from Imported Sources	12,073	1,241	7,140	20,453
Total Foreign	12,073	15,225	45,713	73,010
GSA % of Total Foreign	17%	21%	63%	

Salvaged Water				
	East	Greater	Mid	Total
Ditch Perc from Kaw River Sources	8,835	49,771	34,880	93,486
Additional Recharge	226	6,892	5,697	12,815
Stormwater Return Flows	508	2,370	8,491	11,368
WWTP Return Flows	1,470	3,129	13,878	18,477
Basin Perc from Kaweah River Sources	0	16,005	23,479	39,484
Irrig. Ret. Flow from Kaweah River Sources	4,555	31,039	11,981	47,574
Total Salvaged	15,593	109,205	98,406	223,205
GSA % of Total Salvaged	7%	49%	44%	

	East	Greater	Mid	Total
Grand Total	124,560	305,447	229,992	659,999
GSA % of Total	19%	46%	35%	
Mun. & Ind. Pumping (Visalia/Tulare) (AF)			54,400	
Ag Pumping (AF)			175,592	
Ag Acreage (Acres)			72,000	
AF/Acre of Ag Groundwater Pumping			2.44	Say 2.5 AF/Acre

Note: Data is based on water budget for the period Water Year 1997 to 2017 for the Kaweah Subbasin and Water Supply Accounting Framework developed by GSA managers.

Appendix B

Chart of Groundwater Allocated to Meet ET

Surface Water User

Surface Water	4.50 AF/Acre of ET	Groundwater Dependent User
Penalty Tier \$500/AF of ET	3.50 AF/Acre of ET	Penalty Tier \$500/AF of ET
Mitigation Tier \$260/AF of ET	Groundwater Pumping Limit (Per Section 2.1) 2.50 AF/acre of ET	Mitigation Tier \$260/AF of ET
GW Relief Pumping Tier 2 \$10.00/AF of ET	0.83 AF/Acre of ET	GW Relief Pumping Tier 2 \$210/AF of ET
GW Relief Pumping Tier 1 \$10.00/AF of ET	0.83 AF/Acre of ET	GW Relief Pumping Tier 1 \$160/AF of ET
Native Yield No Cost		Native Yield No Cost

Appendix C

Fees for Relief Pumping and Mitigation Tier

Tiered Relief Pumping

Service Fees

Item No.	Description	Cost
1.	2021 Land IQ Data ¹	\$ 60,000
2.	2022 Land IQ Data	\$ 60,000
3.	Water Dabsboard MKGSA Costs V1.0	\$ 25,000
4.	Water Dabsboard MKGSA Costs V2.0	\$ 75,000
5.	Water Dashboard Support (P&P)	\$ 85,000
6.	ArcGIS License Fee (3 seats)	\$ 15,000
7.	Staff Engineer	\$ 150,000
8.	Support Staff (2 employees)	\$ 190,000
9.	MKGSA Field Truck (Agency Truck + Fuel)	\$ 50,000
10.	GPS Subsidence Monitoring Equipment	\$ 100,000
11.	Overhead Costs (\$1.35 per SF for approximately 2,500 SF)	\$ 40,000
12.	Misc. Supplies (computers, office supplies, etc.)	\$ 50,000
TOTAL		\$ 900,000

Acreage in the MKGSA ²	72,000	<i>acres</i>
Total Relief Pumping Allocation (1.67' of Relief Pumping)	120,240	<i>acre-feet</i>
Reduced Volume Percentage (reduced participation) ³	80%	
Anticipated Relief Pumping Total	96,192	
\$ / Acre	\$ 9.36	

Notes

¹ *Seeking reimbursement for 2021 Water Year Land IQ data. Will not be included in subsequent Water Year Service Fee costs*

² *Estimated acreage*

³ *Assumed percentage of acreage that registers for Relief Pumping*

Tiered Relief Pumping & Mitigation Tier

Cost of Replacement Water

Year	USBR Water Costs		Friant O&M Costs		Total Costs	
	Class 1	Class 2	Class 1	Class 2	Class 1	Class 2
2021	\$ 43.85	\$ 26.98	\$ 194.52		\$ 238.37	\$ 221.50
2020	\$ 42.82	\$ 24.01	\$ 185.91		\$ 228.73	\$ 209.92
2019	\$ 40.69	\$ 25.02	\$ 13.97		\$ 54.66	\$ 38.99
2018	\$ 47.63	\$ 28.94	\$ 14.09		\$ 61.72	\$ 43.03
2017	\$ 39.39	\$ 25.33	\$ 6.13		\$ 45.52	\$ 31.46
	\$ 42.88	\$ 26.06	\$ 82.92		\$ 125.80	\$ 108.98

WY 2019 December Friant Rate \$60-\$100
WY 2021 Decenber Rate \$150

Winter Pricing (Low Value) \$150
Irrigation Pricing (High Value) \$250