

JOE O'BRIEN – O'BRIEN RANCH

March 27, 2024

State Water Resources Control Board  
1001 I Street  
Sacramento, CA 95814

**Re: 2024 Cooperative Solution – Joe O'Brien (O'Brien Ranch)**

To Deputy Director:

Attached is my 2024 Cooperative Solutions. It is the same as what I submitted in 2022 and was approved. In 2023, even though it was not required, I adhered to the same plan and shut off irrigation at the end of August-2023. Please note, I do not divert water.

Also, I have installed a water meter on my irrigation well and will log a starting number as of April 1, 2024 and bi-weekly thereafter. I am working with J.W. Kerns to eventually convert my new pivots to LEPA-compliant, and I will seek partial financing from the USDA.

I considered the other options for water conservation but because my farm is rectangularly shaped and there are buildings, barns, etc, I have no choice but to adhere to my original plan which was approved originally and inspected by your organization.

This plan, I hope, should serve as notification that I have installed a water meter which I will log starting April 1. I request approval of my submitted 2024 Cooperative Solution.

Regards,

Joe O'Brien, O'Brien Ranch

*Joe O'Brien*

Joe O'Brien, Owner

Attachments:

4 pages - 2024 Cooperative Solution

1 page - .pdf – Colored Map of Fields

4 pages – Excel – Conservation Plan

**JOE O'BRIEN – O'BRIEN RANCH**



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1001 I Street  
Sacramento, CA 95814


***Re: 2024 Cooperative Solution – Joe O'Brien (O'Brien Ranch)***

To Deputy Director:

As authorized by 23 CCR §§ 875(f)(4)(D), Joe O'Brien (O'Brien Ranch) is providing this letter to further describe its proposed local cooperative solution (LCS) for the 2022 irrigation season. O'Brien Ranch is included with Brian Heffernan of the H&H Land & Livestock Co., LLC Local Cooperative Solution (LCS).

My farm according to County records is 116 acres and divided into two parcels:

-  – 40 acres
-  – 80 acres

Water rights are Scott Valley Adjudication, Schedule B23, Sheet 7 of Plate 1, under former owner of farm,  number 410.7. The acres described in this plan are irrigated from a ground water well. Surface water will not be used in place of the groundwater reduction described in the plan.

Introduction / Historical Irrigation Procedures

All of the approximately 116 acres <sup>[1]</sup> we own and irrigate at the above address has been cultivated primarily for alfalfa and seasonal pasture. As requested, included is map of the pivots, wheelline, and other irrigated equipment. Irrigation infrastructure for seasonal alfalfa and pasture include a single agriculture well that supply the following areas and equipment:

- (i) Center Pivots (approximately 66 acres) – See map.**  
Two automated circular center pivots (installed 2021).

<sup>[1]</sup> For purposes of this letter, all acreage estimates have been estimated in good faith using satellite imagery.

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### (ii) **Wheelline** (approximately 26 acres) - **See map.**

Wheelline (i.e. long mobile pipe sets historically moved manually during irrigation season) service approximately 26 acres. Prior to installation of two center pivots, there were 3 wheellines, now there is only one. Generally, each wheelline is moved manually each day at approximately 6AM and 6PM resulting in two approximately 11-hour operation period during a 24-hour period. <sup>[2]</sup>

### (iii) **Corners** (approximately 24.10 acres) - **See map.**

Since our property is irregularly shaped, certain areas of the property cannot be irrigated with circular pivots or rectangular wheellines. Remainder areas (i.e. "corners") are irrigated using a combination of methods including moveable big guns (i.e. movable high-pressure sprinklers) and handline (movable aluminum pipe).

- 1) Rebuilt 50hp turbine pump to improve electrical efficiency and reduce kilowatt hours.
- 2) Replaced entire mainline due to irregular pipe widths which caused friction losses.
- 3) Installed a VFD so that only the water needed is pumped and can vary PSI as needed.

**Pivots** – During 2021, installed 2 state-of-the-art Valley 7000 Pivots Low-Pressure System with a machine flow of 300 gpm and pivot pressure of 26 psi. Hose drops are 5-feet over alfalfa. Nozzles are Nelson Regulator Blue Acme 20 psi ¾ NPT. These nozzles do not atomize. Pivots are controlled manually, by laptop and smartphone. Full control and instant water usage and psi are accessible on-line. Two wheellines were removed permanently. J.W. Kerns estimates 30% improvement in efficiency. ***Both pivots will be turned off on September 1.***

**Water Sensors** – Installed 3 water sensors strategically placed by USDA-NRCS experts. These sensors are on-line accessible by laptop and smartphone. Daily reports are sent to me via email by WildEye. This was installed in 2021. Verification of sensors can be made by CE Inspection.

**Wheelline** – We changed out nozzles on the one remaining wheelline (formerly 3) from 7/32" (390 gpm) to 11/64" (240 gpm) resulting in a 38.46% savings. Resealed remaining wheelline to prevent leaks. Sets are targeted at 11 hours and a daily log will be instituted. We will present that log to the Cooperating Entity upon request. ***Wheelline will be turned off on September 1.***

<sup>[2]</sup> Time is required for wheelline to drain fully and be moved, which can take an hour or so each move. No irrigation occurs during periods required to drain/move wheelline. Hence, the estimation of 11-hour sets.



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**Corners** – (anything not wheelline or pivot) We will reduce all sets from 11.5 hours to 10 hours each. Also, we will cease irrigation on the corners at the end of August. This will result in a material reduction in forage production in these areas during 2024. Verification of the above-described Forbearance can be directly verified by the Cooperating Entity in an on-site inspection. ***All corners will be turned off on September 1.***

All of these improvements made in 2021 (pump, pivots, mainline, water sensors, VFD) come at a considerable cost. During 2021, I had a goal of reducing water usage and reducing energy costs, not knowing about possible water restrictions. My out-of-pocket expenses were approximately \$95,000. I continue working with a team from the USDA NRCS to accomplish these goals for the past four years, and they were pleased with the results. My big concern with the water restrictions is how I am going to get a payback on my return. Because my farm is 116 acres, it is going to be tough.

While voluntary conservation and forbearance efforts may tend to improve river conditions (and we are certainly supportive of these efforts), unless snowpack improves soon, it seems clear that in a year like 2022, no amount of sacrifice by farmers and ranchers will improve river conditions this year. Nonetheless, we are undertaking voluntary conservation measures in good faith to provide an opportunity to improve watershed conditions and to create a more constructive and effective framework for water conservation than involuntary curtailment triggered by river flow standards that are not likely achievable and/or other involuntary regulation. Conservation efforts can create real financial burdens on farmers and ranchers, their families, and this community as a whole, especially in a year where forage costs are historically high and costs are escalating on all other inputs from labor to fuel to equipment. We, therefore, hope you will thoughtfully and diligently consider these voluntary actions as you balance the interests of various stakeholders in our watershed.

Please note that this plan is offered in good faith in connection with the 2024 irrigation season only. All rights, claims and defenses with regard to the matters described herein are hereby expressly reserved. Moreover, and as this plan is offered voluntarily (without any current legal obligation to undertake the matters described herein), should any governmental or NGO funds later become available for any forbearance or improvement efforts to which the O'Brien Ranch would otherwise be entitled, nothing herein shall be construed to limit the availability of such funds to the O'Brien Ranch provided that we materially perform the 2024 undertakings described herein. Water saved under this proposal will not be transferred to parcels not included under the LCS and we will not knowingly or intentionally otherwise take actions outside of the LCS that diminish, in any material way, the overall thirty percent reduction established by this proposal.

JOE O'BRIEN – O'BRIEN RANCH



Please timely advise as to your decision on the acceptability of this plan in lieu of regulatory curtailment as contemplated by 23 CCR §§ 875 and thank you for your consideration in this matter.

Please feel free to contact me with any questions.

Regards,

Joe O'Brien, O'Brien Ranch

*Joe O'Brien*

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Joe O'Brien, Owner

Attachments:

1 page - .pdf – Colored Map of Fields

4 pages – Excel – Conservation Plan

		O'Brien Ranch Joe O'Brien	
<b>SUMMARY</b>			Sheet #1
Total Irrigated Seasonal Acreage:	<b>116</b>		
Alfalfa Pivot Acreage:	65.9		
Alfalfa Wheeline Acreage:	26		
Corners:	24.1		
Total AF 2020 All Acres: <b>(NON BINDING BASELINE ESTIMATE FOR DISCUSSION PURPOSES ONLY)</b>	460.00		
Total Monthly AF (avg) 2020:	76.67		
	<b>Total 2020 Estimated Monthly (AF)</b>	<b>Total Estimated 2024 Monthly Reduction (AF)</b>	<b>Estimated Monthly Reduction %</b>
April	57.50	17.88	<b>31.09%</b>
May	76.67	23.84	<b>31.09%</b>
June	76.67	23.84	<b>31.09%</b>
July	95.83	29.80	<b>31.09%</b>
August	95.83	29.80	<b>31.09%</b>
September	57.50	45.55	<b>79.22%</b>
October [No Irrigation]			
	<b>Total Estimated 2020 Seasonal (AF)</b>	<b>Total Estimated 2024 Seasonal Reduction (AF)</b>	<b>Estimated Seasonal Reduction %</b>
	460.00	170.69	<b>37.11%</b>



<b>NEW ALFALFA PIVOTS (Formerly wheeline in 2020)</b>	O'Brien Ranch Joe O'Brien [REDACTED]	Sheet #2
Total Alfalfa Pivot Acres:	65.90	
Alfalfa Pivots % Total Acres:	56.81%	
Wheeline Gallons Per Minute 2020:	920	
Pivot Gallons Per Minute 2024:	600	
Percent Savings:	34.78%	
	<b>2020 Pivot AF (baseline)</b>	<b>2024 Reduction AF</b>
April	32.67	11.36
May	43.55	15.15
June	43.55	15.15
July	54.44	18.94
August	54.44	18.94
September*	32.67	32.67
October*	<u>0.00</u>	<u>0.00</u>
	<b>261.33</b>	<b>112.20</b>
*No Fourth Cutting in 2024		





	O'Brien Ranch Joe O'Brien	
<b>CORNERS HANDLINE AND IRRIGATION GUN</b>		Sheet #4
Total Corners Handline and Irrigation Gun Acres :	24.10	
Corners Handline and Irrigation Gun % Total Acres:	20.78%	
Corners Handline and Irrigation Gun Savings (%): (reduce all sets from 11.5 hours to 10 hours each)	13.04%	
	<b>2020 Corners Handline and Irrigation Gun AF (baseline)</b>	<b>2024 Corners Handline and Irrigation Gun AF Reduction</b>
April	11.95	1.56
May	15.93	2.08
June	15.93	2.08
July	19.91	2.60
August	19.91	2.60
September*	11.95	11.95
October*	<u>0.00</u>	<u>0.00</u>
	95.57	22.85
*No Irrigation		

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	Total 2020 Estimated Monthly (AF)	Total Estimated 2024 Monthly <b>Reduction</b> (AF)	Estimated Monthly <b>Reduction</b> %
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May	76.67	23.84	<b>31.09%</b>
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October [No Irrigation]			
	Total Estimated 2020 Seasonal (AF)	Total Estimated 2024 Seasonal <b>Reduction</b> (AF)	Estimated Seasonal <b>Reduction</b> %
	460.00	170.69	<b>37.11%</b>

<b>NEW ALFALFA PIVOTS (Formerly wheeline in 2020)</b>	O'Brien Ranch Joe O'Brien	Sheet #2
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Pivot Gallons Per Minute 2024:	600	
Percent Savings:	34.78%	
	2020 Pivot AF <b>(baseline)</b>	2024 <b>Reduction AF</b>
April	32.67	11.36
May	43.55	15.15
June	43.55	15.15
July	54.44	18.94
August	54.44	18.94
September*	32.67	32.67
October*	<u>0.00</u>	<u>0.00</u>
	261.33	112.20
*No Fourth Cutting in 2024		



	O'Brien Ranch Joe O'Brien	
<b>ALFALFA WHEEL LINE</b>		Sheet #3
Total Alfalfa Wheelline Acres:	26.00	
Alfalfa Wheelline % Total Acres:	22.41%	
Wheelline Gallons Per Minute 2020: (7/32" nozzle-30 sprinklers)	390	
Wheelline Gallons Per Minute 2024: (11/64" nozzle-30 sprinklers)	240	
Percent Savings:	38.46%	
	2020 Alfalfa Wheelline <b>(baseline)</b>	2024 Alfalfa Wheelline <b>Reduction AF</b>
April	12.89	4.96
May	17.18	6.61
June	17.18	6.61
July	21.48	8.26
August	21.48	8.26
September*	12.89	12.89
October*	<u>0.00</u>	<u>0.00</u>
	103.10	47.59
*No fourth cutting in 2024		

	O'Brien Ranch Joe O'Brien	
<b>CORNERS HANDLINE AND IRRIGATION GUN</b>		Sheet #4
Total Corners Handline and Irrigation Gun Acres :	24.10	
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	2020 Corners Handline and Irrigation Gun AF ( <b>baseline</b> )	2024 Corners Handline and Irrigation Gun AF <b>Reduction</b>
April	11.95	1.56
May	15.93	2.08
June	15.93	2.08
July	19.91	2.60
August	19.91	2.60
September*	11.95	11.95
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