February 21, 2022

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

Re: 2022 Cooperative Solution – Fawaz Farming and coordinating growers

To the State Water Board:

As authorized by 23 CCR §§ 875-875.9, Fawaz Farming provides this letter to further describe its proposed local cooperative solution (LCS) for the 2022 irrigation season.

There are also several operations below the acreage threshold that are coordinating with Fawaz Farming in submitting this LCS. Each coordinating operation will be included as a separate sheet of the water budget workbook. Fawaz Farming does not have management authority or take any responsibility for coordinating growers but is merely assisting them with this LCS.

Brandon Fawaz started Fawaz Farming after graduating high school in 1998. Fawaz Farming irrigates 1114 acres primarily in production of alfalfa hay, grass hay, cereal grain hay, and other small rotational crops. The irrigation infrastructure consists of 12 wells, 17 pumps, 16 pivots, various wheel lines, hand lines, and squirt guns / cannons.

Prior to 2021, all center pivots were equipped with High Pressure, Mid Elevation, Spray Application sprinkler packages or iWob packages by Senninger Irrigation. Commonly on the farm, these nozzle packages are referred to as Nelson Rotators or iWobs. Pivots move automatically in accordance with parameters set for each pivot.

Historically wheel lines have been moved in established crops, either once per day, commonly referred to as "24-hour sets" or twice per day, referred to as "12-hour sets." In actuality the sets are approximately 23 hours or 11 hours, respectively, as it takes time to manually move the wheel lines.

Unlike some areas of California, the fields are not all rectangular, square, or circular. This results in the need for different types of irrigation to provide complete coverage and overlap between systems. Considering labor, a major challenge when managing irrigation systems on a farm, some of these areas that are considered for fallowing.

Fields are labeled using the Siskiyou County of Agriculture's Restricted Materials Spray Permit. This is the most common form of mapping farmers in Scott Valley are familiar with on their farms. The acreages identified were determined by the county, not the farmer.

Irrigation season usually starts within the first 10 days of April. Irrigation for a three cutting alfalfa system typically ends mid-August. Grass fields typically require water a little later in the year, with irrigation ending around the end of the first week of September. Irrigation for a four cutting alfalfa system generally aligns more with grass, ending around September 10th. When a rotational crop such as cereal grains are grown for forage, irrigation usually ends by June 15th, and for grain, around July 10-15th. Depending upon workload, conditions, and labor, sometimes alfalfa is planted in the fall. This requires some irrigation later in the year, usually into October, and in the case of 2020, a couple light applications the first week of November.

Fawaz Farming is a first-generation farm. I literally turned my high school FFA project into the job / farm I have today. This has forced me to operate on a tight budget and do some practices different than others. While not common for all growers, Fawaz Farming has a long history of growing a second season crop such as corn, teff, Sudan, and sudex. Sudan and sudex have primarily been grown not for their forage value, but for their soil fumigation properties and to add organic matter to the soils.

MOST IRRIGATION UPGRADE / EFFICIENCY GAIN HAS BEEN DONE WITHOUT ANY FINANCIAL ASSISTANCE.

Conservation Efforts taken place since 2020:

Since 2020, many conservation efforts have taken place. These exact practices are identified in the water budget workbook, will be displayed in final maps, and t are described below.

Items 1-12 are eligible and permanent efficiencies contributing to the overall reduction, and can be checked once by the coordinating entity during each irrigation season on an inspection.

- All pivots currently controlled or owned with more than 4 towers have been converted to Low Energy Precision Application / LEPA packages. This conversion has drastically increased irrigation efficiency with estimates from various irrigation companies exceeding 25%! From in the 2021 season to the present, over \$50,000 has been self-funded for just converting pivots to LEPA.
- 2. Wheel Lines have been replaced by pivots with LEPA
- 3. Wheel Lines were replaced in mid 2020 with pivot with iWob
- 4. Wheel Line nozzles size has been reduced
- 5. Overall irrigation system pressure has been drastically reduced
- 6. Wheel Line set times have been altered
- 7. Soil Moisture sensors have been installed or will continue to be installed when Verizon LTE parts are available
- 8. Squirt Guns / Cannons on field corners have been eliminated
- Inside towers of LEPA pivots typically do not have hose drops. Rotators have been removed and will have iWobs installed. According to Senninger, this is about a 10-15% gain in efficiency.

- 10. Pivot flow rates reduced in addition to installing LEPA, with not as much water being needed as there is more efficient use, our pivots have been renozzled so that less water flows through them.
- 11. Variable Frequency Drives (VFD) have been installed so that only the water needed is pumped
- 12. Flow Control valves have been installed on pivots so that pressure / water to the pivot can be limited while then providing only enough water for the other demands on the irrigation system

Items 13-16 are additional eligible and temporary water reduction efficiencies contributing to this local cooperative solution. These can be verified on an inspection conducted by the coordinating entity during the irrigation season.

- 13. Forbearance of Edges Many field edges used to be irrigated with solid set hand line. This is now abandoned or only used prior to first cutting.
- 14. Fallowing Some ground will not be farmed in 2022
- 15. Reduced Cuttings Some fields will only be cut twice and most likely none will be cut four times
- 16. Reduction of Second Crop The majority of the eligible ground for a second crop, such as Sudan, will not be planted or irrigated late

With the exception of some small reimbursements from Pacific Power WattsSmart, all the above upgrades have been financially borne by Fawaz Farming. This is has been a significant hardship. Specifically, this past fall, we were faced with a choice between a broken tractor that needed to be replaced as it was a 1982 model, or irrigation upgrades purchased. The tractor was not replaced; upgrades are happening.

It seems clear to me, as a farmer, we have to look at the weather and environmental conditions to evaluate how to move forward. Unless we have a "Miracle March," it is unlikely all the sacrificing experienced by farmers in Scott Valley, will be able to provide river conditions desired by some. This current reduction is not a sustainable way for me to run my farm and raise my family. I employ around 10-11 people. I cannot support them year-end year-out if these conditions continue. I am exhausting all the efficiency gains I can make. Soon, the sacrifices will make me unable to continue. I fully support a plan of action that can make the valley better for all whom love it, without severely hurting me and my family. My kids are 6 and 11. I am 42. I am too old to go back to school and learn something new. I am too invested in just purchasing our farm to walk away. I have now completed 12 mortgage payments out of 240.

This plan is offered in good-faith regarding the local control solution for the 2022 irrigation season. All rights, claims, and defenses with regard to the matters described herein are hereby expressly reserved. Moreover, this plan is offered voluntarily by Fawaz Farming. Previously in 2021, I was one of three irrigators that curtailed our water use early, July 31, 2021, in exchange for compensation. No part of this plan or its water budget shall be construed to limit the availability of our participation of any future potential programs. I have in the past and will in the future negotiate and be available for the betterment of Scott Valley. This is my home.

Many of the growers in Scott Valley, including myself, were told it would be appreciated to have our agreements presented to the water board in the month of February. I have worked diligently to abide by that timeline. As a farmer, I needed to see what the weather, markets, and commodity prices were lining up like in order to make the best decision of how to manage my farm. Seeds I plant today will control my options all the way through until next year. These are not simple decisions.

Regarding a coordinating entity, I am open to options. I would be completely available to working with Joe Croteau of CDFW. I believe Joe is somewhat familiar with my operation from being around it in 2021 with the curtailment. While I understand whoever is my partnering person will need to have access to my farm to look at irrigation practices, I must point out that I will need to be involved with knowing when, even if very brief notice, of their arrival. We spray pesticides that have restricted entry intervals (REIs). This is the time from after application when both the EPA and the pesticide manufacturer have agreed is needed for safe entry. I would not want someone to walk out into one of my fields an hour after I sprayed when a REI for 48 hours is in effect.

Regarding tracking / monitoring pivot applications, I am working on trying to make a more seamless option viable. Currently I start most pivots remotely from a smart phone or computer. Some pumps are started remotely and some manually at the panel. While my last resort, which would work, would be to keep a calendar log of when I turn pivots off and on and their set amount, it will be tedious. My pivot control telemetry software / app can track details of the pivot. I am working with the software designer to see if a longer term of that data can be available and then be exported to Excel. This would make pivot monitoring much easier and fool proof.

I feel the need to point out the level of calculations I prepared should not be used to harm another farmer. I tend to outline many things in my farm on Excel spreadsheets. I believe this exercise was best done that way as well. However, I do still work with other farmers that do not even own a computer. Many do not have smart phones. Many don't text. Therefore, I am willing to work with some other growers to have their water plans on my spreadsheet.

My contact information is provided above. Please feel free to contact me by phone, email, or text regarding any questions you might have in moving forward with this plan.

Regards,

Brandon Fawaz

Brandon Fawaz Owner, Fawaz Farming





State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Northern Region
601 Locust Street
Redding, CA 96001
www.wildlife.ca.gov

GAVIN NEWSOM, Governor CHARLTON H. BONHAM, Director

March 22, 2022

Brandon Fawaz, Landowner and Manager Fawaz Farming



SUBJECT: Groundwater Use Reduction and Binding Agreement for Local Cooperative Solution

Dear Brandon Fawaz,

On August 17, 2021, the State Water Board adopted an emergency regulation establishing drought emergency minimum flows in the Scott River and Shasta River watersheds. (Cal. Code Regs., tit. 23, §§ 875–875.9.). Under the regulation, local cooperative solutions (LCS) by individuals or groups may be proposed by petition to the Deputy Director as an alternative means of reducing water use to meet or preserve drought emergency minimum flows, or to provide other fishery benefits in lieu of curtailment. For individual cooperative solutions, the Deputy Director may approve a petition where a water user agrees to voluntarily cease diversions or where the California Department of Fish and Wildlife (CDFW) makes a recommendation for an exemption to curtailment based on an assessment that the benefits of the actions to anadromous fish in a specific time are equal to or greater than the protections provided by their contribution to flow under curtailment.

For overlying or adjudicated groundwater diversions for irrigated agriculture described in section 875.5(f)(4)(D)(i) – (ii) [Scott River], the State Water Resources Control Board (SWB) Deputy Director may approve a groundwater-basin-wide, groundwater sub-basin-wide, or any number of individual local cooperative solutions totaling at least 400 irrigated acres. For the Scott River the proposal needs to provide at least: 1) a net reduction of water use of 30 percent throughout the irrigation season (April 1 – October 31), as compared to the prior irrigation season; and 2) a monthly reduction of at least 30 percent in the July 1 through October 31 period, as compared to the prior year or to 2020. Such reduction may be demonstrated by evidence that provides a reasonable assurance that the change in farming practice or other action results in at least the relevant proportionate reduction. Such evidence may include but is not limited to pumping reports, actions that will be taken to reduce water use,

Brandon Fawaz Fawaz Farming March 22, 2022 Page 2 of 3

estimation of water saved from conservation measures or changes in irrigation or planting decisions and electric bills.

On February 21, 2022, you proposed an LCS authorized by 23 CCR §§ 875(f)(4)(D) of the regulation for the 2022 irrigation season. It includes a conservation plan, narrative, and parcel/spray/field maps incorporated by reference. The proposal uses the year 2020 as the baseline; it includes detailed spreadsheets and a narrative that describes permanent enhanced irrigation efficiencies, reduced irrigation wheel line set timing, an irrigation forbearance plan for field edges, fallowing fields, reduced cuttings, and halting the majority of a second crop planting in 2022. The specific conservation practices within the narrative offer concise and proper monitoring elements enabling CDFW to assume the role of a coordinating entity to implement a binding agreement.

Attached to this cover letter is a groundwater use reduction and binding agreement for an LCS. You have worked closely with CDFW and SWB staff to develop this binding agreement that will enable us to be your coordinating entity. I have already signed it. If you agree with its content and terms, please sign and retain one copy, include one copy with your petition to the SWB, and return one copy to the email included in the contact information below.

CDFW is grateful for your commitment to enter a groundwater use reduction and binding agreement for a local cooperative solution. We think this will be one of several tools we can use to tackle the challenges of this ongoing drought to protect native salmon, protect tribal cultural resources; and support local and commercial economies. If you have any questions regarding this letter, please contact Senior Environmental Scientist Carmen Tull at klamathwatershed@wildlife.ca.gov.

Sincerely,

—DocuSigned by: Ina Bartlett

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Tina Bartlett, Regional Manager Northern Region

Ec's on Page 3

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ec: Botany

03/24/2022

Fawaz Farming

Brandon Fawaz, Landowner and Manager

State Water Resources Control Board

Erik Ekdahl, Deputy Director Division of Water Rights erik.ekdahl@waterboards.ca.gov

California Department of Water Resources

Craig Altare, Section Chief Sustainability Plan Review SGMO craig.altare@water.ca.gov

National Marine Fisheries Service

Alecia Van Atta, Assistant Regional Administrator <u>alecia.vanatta@noaa.gov</u>

California Department of Fish and Wildlife

Tina Bartlett, Regional Manager and Joe Croteau, Environmental Program Manager klamathwatershed@wildlife.ca.gov



GROUNDWATER USE REDUCTION AND BINDING AGREEMENT FOR LOCAL COOPERATIVE SOLUTION

BACKGROUND

Under the 2021 drought emergency regulation establishing drought emergency minimum flows in the Scott River and Shasta River watersheds, I local cooperative solutions (LCS) by individuals or groups may be proposed by petition to the Deputy Director as an alternative means of reducing water use to meet or preserve drought emergency minimum flows, or to provide other fishery benefits (such as cold-water refugia, localized fish passage, or redd protection), in lieu of curtailment.

RECITALS

- Section 875(f)(4)(D) of the drought emergency regulation provides a specific type of LCS that was determined to be sufficient for approval by the Deputy Director;
- 2. For overlying or adjudicated groundwater diversions for irrigated agriculture described in section 875.5(f)(4)(D)(i) (ii) [Scott River], the Deputy Director may approve a groundwater-basin-wide, groundwater sub-basin-wide, or any number of individual local cooperative solutions totaling at least 400 irrigated acres where:
 - (i) The proposal is based on a binding agreement. Such binding agreement may be made with a coordinating entity with the expertise and the ability to evaluate and require performance of the agreement, for example with the California Department of Fish and Wildlife (CDFW), the National Marine Fisheries Service, the Scott Valley and Shasta Valley Watermaster District, a non-profit organization with expertise and experience in water-saving transactions, or similar qualified entity.
 - (ii) For the Scott River: "The proposal provides at least: 1) a net reduction of water use of 30 percent throughout the irrigation season (April 1 October 31), as compared to the prior irrigation

¹ California Code of Regulations, title 23, sections 875–875.9.

season; and 2) a monthly reduction of at least 30 percent in the July 1 through October 31 period, as compared to the prior year or to 2020. Such reduction may be demonstrated by evidence that provides a reasonable assurance that the change in farming practice or other action results in at least the relevant proportionate reduction. Such evidence may include but is not limited to: pumping reports, actions that will be taken to reduce water use, estimation of water saved from conservation measures or changes in irrigation or planting decisions, and electric bills."

PROPOSED LOCAL COOPERATIVE SOLUTION

On February 21, 2022, Brandon Fawaz DBA Fawaz Farming (Landowner) proposed an LCS authorized by 23 CCR §§ 875(f) (4) (D) of the regulation for the 2022 irrigation season. It includes a final conservation plan, narrative, and spray/field maps incorporated by reference. The proposal uses the year 2020 as the baseline; it includes detailed spreadsheets and a narrative that describes permanent enhanced irrigation efficiencies, reduced irrigation wheel line set timing, an irrigation forbearance plan for field edges, fallowing fields, reduced cuttings, and halting the majority of a second crop planting in 2022. The specific conservation practices within the narrative offer concise and appropriate monitoring elements enabling CDFW to assume the role of a coordinating entity to implement a binding agreement described in "i" above. The mathematically calculated conservation plan accounts for a net reduction of approximately 34.6% to meet the requirement described in item "ii" above.

The included lands in the proposal equal 1,114 acres and exceeds the minimum 400 acres required under the emergency regulation. This agreement is being entered into with the understanding that additional acres may be added under a separate binding agreement with additional parties for State Water Resources Control Board (State Water Board) approval. Any additional parties joining the proposed LCS will only be done with the Landowner's consent, and with the understanding it will not harm or hinder operations. The Landowner will not be held liable for any violations of additional parties' respective LCS.

TERMS OF BINDING AGREEMENT

The Landowner is required to adhere to the proposed conservation plan, as submitted to CDFW and approved by the State Water Board. The Landowner has requested that CDFW serve as the coordinating entity. The Landowner and CDFW agree to the following:

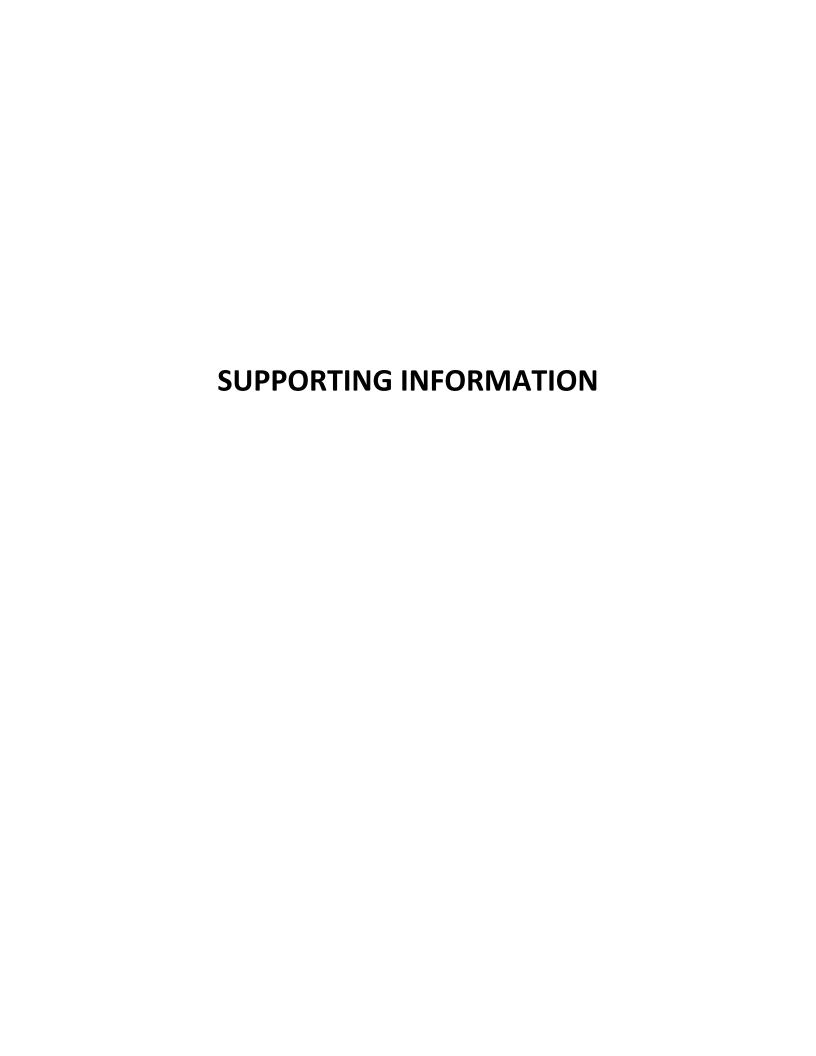
- For the duration of this binding agreement where CDFW is the coordinating entity, the Landowner shall give CDFW and CDFW agents the right to reasonably access the included parcels for the limited purpose of verifying execution of the conservation plan. Any individual not directly employed or contracted by CDFW shall provide prenotification to, and shall obtain approval by, the Landowner.
- CDFW will strive to notify the Landowner a day in advance of visiting the
 parcels and shall provide the Landowner or a designee the ability to
 participate in the monitoring inspection.
- It is anticipated that CDFW representatives will visit the property approximately twice per month. A monitoring inspection may include verification of any or all the actions described in the conservation plan and may include inspection checklist/notes/report and photo verification.
- The written irrigation log described under the wheel line conservation practice, and any photos, logs, checklists, and other documentation for this conservation strategy incorporated by reference will be transmitted by the Landowner via email to the Klamath Watershed Program at klamathwatershed@wildlife.ca.gov. This information for each month shall be transmitted within the first 7 calendar days of each calendar month.
- CDFW will submit the Information regarding the verification materials and actions described in this agreement, and conservation plan incorporated by reference, to the State Water Board upon request, for the purposes of verifying compliance with the LCS.
- This binding agreement is not intended to preclude, harm, or otherwise interfere with the Landowner's ability to secure any funding to mitigate the financial impacts imposed by the emergency regulation or proposed conservation practices. CDFW supports use of funding programs to ameliorate the costs of implementing the conservation practices described in the proposed conservation plan: planning and cooperation under a voluntary LCS should not undermine the ability to receive such funding.
- This binding agreement may be terminated by either party with 30 days' notice. The Coordinating Entity will only terminate the agreement if the Landowner is not cooperating with the terms of this binding agreement (e.g., is not providing access, is not reporting, etc.). Both parties agree to take reasonable measures to resolve any concerns related to performance of the conservation plan, negative human interaction, or any other unforeseen circumstance prior to invoking termination.

It is recognized that as the irrigation season unfolds, there may be reason
to change the terms of the conservation plan or this agreement regarding
its implementation and verification. Any such changes to the
conservation plan or binding agreement will need to offer continued
compliance with the drought emergency regulations and shall be agreed
upon by both parties as well as the State Water Board.

<u>Contact Information</u>												
California Department of Fish and Wildlife	Fawaz Farming											
Carmen Tull	Brandon Fawaz											
klamathwatershed@wildlife.ca.gov												
916.203.1947												

This Binding Agreement is valid while the current drought emergency regulation is in place. By signature, both parties agree and memorialize CDFW as the coordinating entity for this binding agreement. The Landowner shall include one signed copy with its petition to the SWB, return one signed copy to CDFW, and retain a signed copy of this binding agreement and the conservation plan readily handy at its residence in the event any questions arise for either party during implementation or monitoring.

Authorized Landowner Signatur	e:
Sign Here: 3 Jany	Date Signed: 03/24/22
Authorized Coordinating Entity	Signature:
Sign Here: DocuSigned by: Jina Battlitt 1D82ADE7303A474	<u>Date Signed:</u> 3/22/2022



2020 2020 2020 2020 2020 2020 2020 202	od Ty I Line - I Lin	Ifalfa Ifalfa	Calculation Factors 7/32", 60 psi, 23 hours, 61 sprinklers 671 gpm, 9 sets. Repeat 10 days, 4 sets / cutting, 3 cuttings (12 7/32", 60 psi, 23 hours, 33 sprinklers 360 gpm, 10 sets, repeat 11 days, 4 sets / cutting, 2 cuttings, (12 mous) sets) 1200 gpm pivot, 126 gpm end gun,	April 2020 Acre Feet Applied	Acre Feet Applied	Acre Feet	Acre Feet Applied	August 2020 Acre Feet Applied	Feet	2020 Acre Feet Applied	2020 Total Acre Feet	2022 Irrigated Acres	2022 Irrigation Method	2022 Crop Type	Calculation Factors	Acre Feet	Acre Feet	June 2022 Acre Feet Applied	Acre Feet Applied	Feet		Feet	2022 Acre	Moisture Sensor Installed
29 61 sprim Wheel L 21 33 sprim Phot w, 60 rotators Phot Wheel I 30 Sprim (Weel I 41 Field I 41 Field I 41 Field I 42 Field I 43 Field I 44 Field I 45 Field I 45 Field I 46 Field I 46 Field I 47 Field I 47 Field I 48	Il Line - rinklers Al W/ ors Al Line - rinklers Al W/ ors Gi Line - rinklers tine - rinklers tine - rinklers tine - rinklers tine - tine - tine - rinklers tine - tin	Ifalfa Ifalfa Ifalfa rchard	671 gpm,9 sets. Repeat 10 days, 4 sets / cutting, 3 cuttings (12 complete annual sets) 7/32", 60 psi, 23 hours, 33 sprinklers 360 gpm, 10 sets, repeat 11 days, 4 sets / cutting, 3 cuttings, (12 annual sets) 1200 gpm pivot, 126 gpm end gun,	51	5:																			_
29 61 sprim Wheel L 21 33 sprim Phot w, 60 rotators Phot Wheel I 30 Sprim (Weel I 41 Field I 41 Field I 41 Field I 42 Field I 43 Field I 44 Field I 45 Field I 45 Field I 46 Field I 46 Field I 47 Field I 47 Field I 48	Il Line - rinklers Al W/ ors Al Line - rinklers Al W/ ors Gi Line - rinklers tine - rinklers tine - rinklers tine - rinklers tine - tine - tine - rinklers tine - tin	Ifalfa Ifalfa Ifalfa rchard	complete annual sets) 7/32", 60 psi, 23 hours, 33 sprinklers 360 gpm, 10 sets, repeat 11 days, 4 sets / cutting, 3 cuttings, (12 annual sets) 1200 gpm pivot, 126 gpm end gun,	. 51	5:								Wheel Line 61		7/32", 30 psi, 10.5 hours, 470 gpm, repeat 7 days, 10 sets, 3 cuttings, (10									
21 33 sprin Pivot w, 60 rotators Pivot w, 60 rotators Wheel L 30 Sprin (Went is 14 Field 1-1 Pivot w, 51 rotators	w/ All w/ Ors All w/ Ors Gr d Line - rinklers t into 1-06) All	Ifalfa Ifalfa rchard	sets) 1200 gpm pivot, 126 gpm end gun,			1 51	76.5	51	25.5	. 0	307	23	3 sprinklers	Alfalfa Wheat Hay	complete annual sets)	9.1	13.65	18.2	22.75	18.2	9.1	0	91	
Pivot w/ 60 rotators Wheel L 30 Sprin (Went in 14 Field 1-6 Pivot w/ 51 rotators	w/ Or ors Gi Il Line - rinklers t into 1-06) Al		End gun on 142 degrees / 78% of run	30.5	30.	30.5	45.75	30.5	15.25	0	183	17.8	1 Pivot w/ LEPA	Spring, Fall Plant Alfalfa Wheat Hay Spring, Fall	178 GPM / 10 psi regulators. 1000 GPM pivot, 15 psi regulators, 10:	8.9	17.81	13.36	C	8.9	10.33	0	59.3	
Wheel L 30 Sprin (Went is 14 Field 1-(Pivot w) 51 rotators	l Line - rinklers t into 1-06) Al	rass	time, 4 cuttings 1200 gpm pivot, 126 gpm end gun,	30	31	45	30	45	45	0	225	60	Pivot w/ LEPA	Plant Alfalfa	gpm end gun 1000 GPM pivot, 15 psi regulators, 10:	30	30	30	(30	24.9	0	144.9	Yes Yes, see
(Went in 14 Field 1-0 Pivot w/ 51 rotators	t into 1-06) Al		end gun on 80 degrees / .44% Average length 32 sprinklers, 7/32",	30	31	60	45	60	30	0	255	56	Pivot w/ LEPA	Wheat Hay	gpm end gun	30	45	30	(34.8	30	0	169.8	above
51 rotators Pivot w/		Ifalfa Grass	60 psi, 10 sets, 23 hours per set, 3 cuttings, (11-12 annual sets)	7.46	11.1	36	36	36	7	0	133.65	12.8	1 Pivot w/ LEPA	Alfalfa Grass	128 GPM / 10 psi regulators	6.4	9.61	12.81	9.61	12.81	0	0	51.24	
	ors Al		1200 gpm pivot, 126 gpm end gun, end gun on 73 degrees / 41%	25.5	38.2	5 45	45	38.25	25.5	0	217.5	49	9 Pivot w/ LEPA	Alfalfa	960 gpm pivot, 15 psi regulators, 103 gpm end gun	25.5	25.5	38.25	38.25	29.58	0	0	157.08	Yes
			1200 gpm pivot, 126 gpm end gun, end gun on 180 degrees for willows / 100%	32.5	32.5	5 48	48	32.5	21.6	0	215.1	60	Pivot w/ LEPA	Alfalfa	960 gpm pivot, 10 gpm end gun, end gun on 90 degrees for crop only / 50% End gun savings additional to calc.	25.5	25.5	37.7	37.7	32.5	21.6	0	180.5	Yes, see above
117 Pivot w/	w/ iWab Al	Ifalfa Grass	1000 gpm pivot, 164 gpm end gun, on 180 degreee / 100%	58.5	67.1	87.75	87.75	87.75	38.61		428.16	100	Pivot w/ LEPA	Wheat Hay? Spring, Fall Plant Alfalfa	1000 GPM pivot, 15 psi regulators, 13- gpm end gun, end gun on 125 degrees / 69%. End gun reduction not in calc	48.75	58.5	58.5	38.61	38.61	38.61	9.75	291.33	Yes, Alfalfa
			205 gpm pivot, 95 gpm end gun, on 130 degrees / 72%	9.16	1	1 16.5	16.5	16.5	7.26		76.92	2:	2 Pivot w/ iWob	Wheat Hay, Fall Plant Alfalfa or Corn	205 gpm pivot, 95 gpm end gun, on 100 degrees / 55%, End Gun not in cal	c 9.16	- 11	16.5	7.26		7.26	1.83	62.17	Ves Alfalfa
		rchard	205 gpm pivot, 95 gpm end gun, on 105 degrees / 58%	9.16	1	1 16.5	16.5	16.5	7.26	0	76.92		2 Pivot w/ iWob	Grass	205 gpm pivot, 95 gpm end gun, on 105 degrees / 58%	9.16	11	16.5	16.5		7.26	0	76.92	Undecided
	w/ iWob Al		600 gpm pivot, 200 gpm end gun, end gun on 180 degrees / 100%	20	21	25	25	25	10	0	125	40	Pivot w/ LEPA	Alfalfa Grass	515 gpm pivot, 98 gpm end gun, end gun on 150 degrees / 83%. End gun not in calc.	16.66	16.66	23.33	23.33		10	0	109.98	Yes
	w/ iWob Al	lfalfa	600 gpm pivot, 200 gpm end gun, end gun on 180 degrees / 100%	20	21	25	25	25	10	0	125	40	Pivot w/ LEPA	Alfalfa Grass	515 gpm pivot, 98 gpm end gun, end gun on 180 degrees / 100%. End gun not in calc.	16.66	16.66	23.33	23.33		10	0	109.98	Yes, see above
4 Gun	Al		410 gpm gun, runs 2 days per week when needed, 22 hours, 24 days total for the year	6.5	6.5	5 6.5	6.5	6.5	6.5	0	39	(FALLOWED FOR 2022	Dry Corner	No Irrigation	0	0	0	(0	0	0	0	
8 Wheel L	l Line Al	lfalfa	18 sprinklers, 7/32", 50 psi, 5 sets for pass, 23 hours per set	7.6	7.0	5 7.6	11.4	7.6	3.8	0	45.6		Wheel line	Alfalfa	18 sprinklers, 3/16", 25 psi, 5 sets per pass, 23 hours per set	2.09	4.18	4.18	6.27	4.18	0	0	20.9	
28 Wheel li	l line Al		32 sprinklers, 3/16", 55 psi, 14 sets per pass, 10 hours per set	7.08	14.1	5 14.16	17.7	14.16	3.54	. 0	70.8	28	Wheel Line	Alfalfa / Grain inner planted	32 sprinklers, 3/16", 55 psi, 14 sets pe pass, 10 hours per set	7.08	14.16	14.16	7.08	14.16	0	0	56.64	
10 Wheel L	l Line Al	lfalfa	19 sprinklers, 3/16", 60 psi, 14 sets per pass, 10 hours per set	3.9	3.5	9 0	0	0	0	0	7.8		FALLOWED FOR 2022	Alfalfa	No Irrigation	0	0	0	(0	0	0	0	
4 Gun	Al		250 gpm gun, 2 days / 4 sets per pass, 11.5 hours per set	2.11	2.1	1 0	0	0	0	0	4.22	(FALLOWED FOR 2022	Alfalfa	No Irrigation	o	0	0	(0	0	0	0	
32 Pivot w/	w/ iWab Gi	rass Alfalfa	2 pivots in same field, run together, 1" possible in 56-60 hours	16	5 10	5 16	24	24	10.56	0	106.56	30	Pivot / iWob, end guns partially off	Grass Alfalfa	2 pivots in same field, run together, 1' possible in 56-60 hours, NO 3rd Crop	9.9	9.9	24	24	. 0	0	0	67.8	
Hand Lin 5 with Gu			Approximately 15 sprinklers and Nelson 100 Gun, total 150 gpm, run 2 days per set, 24 hour each	5.304	5.30	5.304	5.304	5.304	2.652	0	29.172	(FALLOWED FOR 2022		No Irrigation	0	0	0	(0	0	0	0	
17 Pivot w	w/ iWob Al	Ifalfa 4 cuts	1 Pivot in field. Capable of 1" of water in 60 hours	8.5	8.5	5 10.625	10.625	8.5	8.5	0	55.25	14	Pivot w/ iWob	Wheat Hay	1 Pivot in field. Capable of 1" of water in 60 hours	8.5	8.5	5.61		0	0	0	22.61	
Wheel L 4 and han	Line and line Al	lfalfa	Approximately 30 sprinklers, 11/64", 2 days per pass, run 11 hours per set	2.92	2.9	2 4.38	4.38	4.38	2.92	0	21.9	4	Wheel line	Wheat Hay	3 passes in corner only, 11 sprinklers at 6 gpm, 4 sets	1.06	1.06	0.53	C	0	0	0	2.65	Yes
		lfalfa	2 pivots in same field, run together, 1" possible in 56-60 hours	10	1	16.67	16.67	10	5	0	68.34	3:	1 Pivot w/ iWob	Grass Alfalfa	2 pivots in same field, run together, 1' possible in 56-60 hours, NO 3rd Crop	10	10	16.67	16.67	0	0	0	53.34	
Hand Lin 5 with Gu	Sun Al	/heat Grain	Nelson Gun, 204 gpm, runs 1 day out of 7 when needed Pivot section of large field - Had	1.8	1.1	3 2.7	2.7	2.7	1.8	0	13.5	(FALLOWED FOR 2022	Alfalfa	No Irrigation	0	0	0	(0	0	0	0	
Pivot w/ 140 rotators	ors Al	Fall Plant Ifalfa /heat Grain	issues with fall plant, can explain if needed Approximately 60 sprinklers which	70	87.	87.5	70	93.33	70	70	548.33	172	Pivot w/ LEPA	Alfalfa	Pivot converted to LEPA	58.33	58.33	70	87.5	70	87.5	0	431.66	Yes
20 Wheel L	l Line Al	lfalfa	ran on an irregular schedule, 3/16", 50 psi Approximately 20 sprinklers, 3/16",	10	12.5	12.5	7.5	15	10	10	<u>77.5</u>	20	Pivot w/ iWob	Alfalfa										
12 Wheel L	&		Approximately 20 sprinklers, 3/16 , 50 psi, 4 days per pass, 2 sets per day	4.66	6.99	6.99	2.33	6.99	4.66	4.66	37.28	12	Wheel line	Alfalfa	Approximately 20 sprinklers, 3/16", 40 psi, 4 days per pass, 2 sets per day	4.08	4.08	4.08	6.12	6.12	0	0	24.48	
Wheel L 51 Section		Ifalfa	60 Sprinklers, 3/16", 50 psi, 10.5 hour sets, make four passes of water on all cuttings	23.38	23.3	3 23.38	29.225	29.225	11.69	0	140.28	45	5 Wheel line	Alfalfa	Acres removed for Handline Fallow. 60 Sprinklers, 3/16", 50 psi, 10.5 hour sets, 3 Passes 1st, make four passes of water on 2nd / 3rd	11.69	23.38	23.38	29.225	29.225	0	0	116.9	
23 Wheel L	l Line Al	lfalfa	48 Sprinklers, 3/16", 50 PSI, 10.5 hour sets, make four passes of water all cuttings. Overlap to M-01	16.04	16.0	16.04	20.05	20.05	14.99		103.21	2	3 Wheel line	Alfalfa	48 Sprinklers, 3/16", 50 PSI, 10.5 hour sets, 3 passes 1st, four passes of wate 2/3 cuttings. Overlap to M-01	r 8.02	16.04	16.04	20.05	20.05		0	80.2	
37 Wheel L	l Line Al		64 Sprinklers, but 8 break off, ave 60 3/16", 50 PSI, 10.5 hours set, make four passes all cuttings	31.74	31.7	31.74	39.675	39.675	15.87	0	190.44	34	Wheel line	Alfalfa	36 sprinkler 3/16", 24 11/64", 50 PSI, 10.5 hours set, make 3 passes 1st, fou passes 2/3 cuttings	14.98	29.98	29.98	37.475	37.475	0	0	149.89	
Pivot se 112 w/ rotat	secction tators Al	lfalfa	4 days to apply 4" water. 50 psi.	56	5 5	5 84	84	84	0	0	364	111	Pivot secction w/ rotators	Alfalfa Grass	VFD Installed, 30 psi, reduced gpm.	42	42	56	84	84	0	0	308	Yes
30 Hand Lis	Lines Al	Ifalfa	78 sprinklers, 11/64 Nozzles, 45 PSI, run 3 days 24 hour sets, per pass, 12 sets / 36 days run time	11.4	11.	11.4	14.25	14.25	5.7	0	68.4	. 10	Hand Lines	Alfalfa	Only First cutting irrigated, all 30 acresirrigated 1st, then fallowed	11.4	11.4	0	(0	0	0	22.8	
11 Wheel L	Line Al	lfalfa	29 Sprinklers, 11/64", 50 PSI, run 4 days, 23 hour sets, 4 sets per pass, 4 passes per cutting	6.1	6.:	1 6.1	7.625	7.625	3.05	0	36.6	4	Wheel line	Alfalfa	Only First cutting irrigated, all 11 acres irrigated 1st, then fallowed	6.1	6.1	0	(0	0	0	12.2	
1114				624.814	683.68	1320.698	<u>870.934</u>	857,289	424.212	84.66	4396.432	1049.62	2			431.02	520	583.11	535.7	536.27	256.56	11.58	2874.27	
															30 % of 2020 reduced = showing 70% allowed / threshold	437.3698	478.5788	924.4886	609.6538	600.1023	296.9484	59.262	3077.5024	<u> </u>
															Monthly Threshold Met - Jul-Oct				Yes	Yes	Yes	Yes		
															Water Savings in EXCESS of 30% required				73.9238	63.8323	40.3884	47.682	203.2324	
															Total Water used as a Percentage								0.65377333	
	_														Percentage of Water Saved								34.623%	<u> </u>
																								<u> </u>