

# **LOWER ELKHORN**

# Natural Resources District



## Lower Platte River Basin Coalition Plan – Annual Report (March 2021)

Report Contributors: Brian Bruckner, Mike Murphy, Josh Schnitzler, Dallas Dorey, and Todd Stewart

#### **Table of Contents**

- 1.0 Introduction
- 2.0 Certified Irrigated Acres
- 3.0 Municipal, Commercial/Industrial, and Livestock GW Uses
- 4.0 New GW Consumptive Uses
- 5.0 Transfers of Water Uses
- 6.0 Well Construction Permits Granted
- 7.0 Retirement of GW Consumptive Uses
- 8.0 Flow Meter Data
- 9.0 Water Banking Activities
- **10.0 Stream Flow Accretion Activities**
- 11.0 Groundwater Elevation Data
- 12.0 Stream Gage Measurements
- 13.0 NRD Regulation and Management Activities
- 14.0 New Depletions Accounting Report
- 15.0 New Data Collected Through Models or Studies

#### 1.0 Introduction

The Lower Elkhorn Natural Resource District (LENRD) covers approximately 2,591,300 acres; with predominant land uses divided among agriculture (76%), pasture/grassland (20%), and small areas of forests, open water, wetlands, and urbanized areas (<4%).

The District's Board of Directors approved the interlocal agreement which effectively adopted the Lower Platte River Basin Water Management Plan on November 21<sup>st</sup>, 2017. This action, along with the six other Natural Resource Districts and the Nebraska Department of Natural Resources, set forth a collective effort to work cooperatively towards the management and development of the water resources within the Lower Platte Basin.

Since 2009, the Lower Elkhorn NRD has utilized a managed-growth philosophy when considering the decision to allow new groundwater uses for agricultural irrigation purposes. Prior to December of 2008, no restrictions were in place that limited property owners regarding the development of agricultural land for irrigation purposes. Current policy requires an approved variance from the District before expanding groundwater use for irrigation purposes. This requirement has been in place since April of 2009 within the LENRD. No limitations have been enacted on the approval of permits for high-capacity groundwater wells for other uses, such as commercial, industrial, livestock, or municipal wells, however, any request to construct a new well for any of those purposes is reviewed for any potential impacts to existing groundwater supplies and/or impacts to groundwater quality prior to approval.

The Lower Platte River Basin Water Management Plan provides guidance to the partners in respect to the amount of (excess) available water that can be allotted for new uses (depletions). Coalition partners have, in return, agreed to adhere to the suggested limits for the first five-year increment of the plan. Table 4.1 (below) lists the allowable depletions for each sub-basin of the Lower Platte Basin and Table 4.2 of the Plan (below) breaks it down into the available amount for each Natural Resource District. As listed in Table 4.2, the amount of water available during the first five-year increment, to be shared between the Lower Elkhorn Natural Resource District and the Nebraska Department of Natural Resources is 4,514 Acre-Feet of allowable new depletions.

TABLE 4.1. FIRST 5-YEAR IN	ICREMENT ALLOWABLE DEVELOPMENT (DEPLETIONS) BY BASIN
Basin	First 5-year Increment Allowable Development (Depletions) – Peak Season (AF) <sup>1/2</sup>
Loup Basin	8,651
Elkhorn Basin	6,018
Lower Platte Sub-basins	4,138

TABLE 4.2. FIRST 5-YEAR INCREMENT ALLOWABLE NEW DEVELOPMENT (DEPLETIONS) BY NRD											
		First 5-year Increment Allowable New Development (Depletions) – Peak Season <sup>1</sup>									
NRD	Sub-Basin	% Sub-Basin	AF								
Upper Loup NRD	Loup River	32%	2,768								
Lower Loup NRD	Loup River	68%	5,883								
Upper Elkhorn NRD	Elkhorn River	25%	1,504								
Lower Elkhorn NRD	Elkhorn River	75%	4,514								
Papio-Missouri River NRD	Lower Platte River	21%	869								
Lower Platte South NRD	Lower Platte River	24%	993								
Lower Platte North NRD	Lower Platte River	55%	2,276								

<sup>1</sup>The allowable new depletion is for all new uses. Apportionment between new surface water and groundwater uses will be made according to each individual NRD Integrated Management Plan.

This report and its content will serve to fulfill the annual data collection and reporting requirement of the Lower Platte River Basin Management Plan for the LENRD for the year 2020, as required in *Section 5.0 – Plan Review and Monitoring, Lower Platte River Basin Management Plan*.

#### 2.0 <u>Certified Irrigated Acres</u>

The District formally began the process of certifying irrigated acres in January of 2013. Since that date, the District has formally certified 7,992 irrigated tracts of private property that have associated irrigated acres and meet the pre-determined criteria for certification purposes.

Rule 14 of the Lower Elkhorn Districts Rules & Regulations for the Enforcement of the Nebraska Groundwater Management and Protection Act indicates that the District will certify, as irrigated, any tract of land greater than two acres that (1) has been irrigated any one out of ten years, from 1999 to 2008, (2) is currently enrolled in a federal, state, or local conservation program and was classified as irrigated land by the local County Assessor within one year prior to being enrolled in such a program, (3) has otherwise been allowed to develop under an approval granted by the District's Board of Directors since 2007, (4) has otherwise been allowed to develop under an approval granted by the NDNR since 2007, or (5) is irrigated by wastewater effluent from a livestock operation or municipality that is operating in compliance with a Clean Water Act permit.

	LENRD CE			
	IRRIGATED /			
	SOUR			
	GROUNDWATER	SURFACE WATER	WASTEWATER	TOTAL ACRES BY
				COUNTY
ANTELOPE	468.39	-	-	468.39
BURT	15,952.43	1,077.36	1,505.06	18,534.85
CEDAR	48,578.04	529.80	432.94	49,540.78
COLFAX	24,438.30	407.87	2,249.11	27,095.28
CUMING	56,921.41	1,987.32	14,171.63	73,080.36
DAKOTA	-	-	-	-
DIXON	15,267.06	422.12	191.79	15,880.97
DODGE	65,574.75	3,709.99	2,428.12	71,712.86
KNOX	11,189.86	70.00	-	11,259.86
MADISON	119,732.09	2,210.25	3,268.38	125,210.72
PIERCE	155,363.54	1,478.37	476.94	157,318.85
PLATTE	23,956.59	-	2,190.44	26,147.03
STANTON	38,719.65	1,287.18	1,789.69	41,796.52
THURSTON	11,618.63	373.87	502.04	12,494.54
WAYNE	48,763.99	913.42	1,761.00	51,438.41
TOTAL IRRIGATED ACRES BY SOURCE	636,544.74	14,467.55	30,967.14	
TOTAL IRRIGATED ACRES	681,979.43			

As indicated by the data in Table 1, groundwater is the primary water source for agricultural irrigation in the Lower Elkhorn NRD with current inventory totaling 636,544.74 acres irrigated by this source. <u>Note: This current inventory only includes a portion of the total new irrigated acres approved in conjunction with the Lower Platte River Basin</u> <u>Management Plan, since only a portion of the new irrigated acres have been formally certified as irrigated acres by the District.</u>

The District is also home to many livestock operations; species include: beef cattle (feedlot and cow/calf), dairy, swine, and poultry operations; for both egg and meat-bird production. Current production trends for livestock and poultry operations indicate that large numbers of animals are situated on individual farms, which will require large volumes of water necessary for production. Many of these operations are also required to have operating permits to comply with the Clean Water Act requirements. Some of these locations will apply groundwater, as necessary, alongside animal waste/lagoon effluent for irrigation of growing crops.

To date; certification records show that surface water irrigation comprises the smallest increment of the total irrigated acreage in the District, estimated at *14,467.55 (down 1,339.11 from previous report)*. Commingled sources of water have been tracked through the process

of certification of acres, and current data indicates there are approximately **14,386** acres of land that are listed as utilizing both groundwater and surface water for irrigation sources.

#### 3.0 <u>Municipal, Commercial/Industrial and Livestock Uses</u>

Prior to January 1, 2019, the District has only required the reporting of annual groundwater usage reports from new Municipal, Commercial/Industrial, and Livestock wells that were constructed with an approved permit, dated July 29<sup>th</sup>, 2007 or later. However, recent modifications to the Lower Elkhorn Natural Resource District Groundwater Management Plan Rules & Regulations requires the installation of a Flow Meter for wells classified as Commercial/Industrial, Livestock, and Municipal use by January 1<sup>st</sup>, 2019. Also required is the annual reporting of groundwater usage data on all wells classified for these other uses beginning January 1, 2020 (see **Appendix A**).

#### 4.0 New Groundwater Consumptive Uses

Previous to participation in the Lower Platte River Basin Management Plan, the only accounting for new groundwater consumptive uses by the Lower Elkhorn Natural Resource District would be the new irrigated acres located within the hydrologically connected areas authorized by an approved Variance from the District, and most importantly those acres approved under the prior requirements of LB 483. The District has required an approved variance to expand irrigated acres districtwide since early 2009. A variance is required for both the Hydrologically Connected and Non-Hydrologically Connected portions of the District, which under the current boundaries (as recognized by the District and the Nebraska Department of Natural Resources) equals approximately a 1/3<sup>rd</sup> (Hydrologically Connected) and 2/3<sup>rd</sup> (Non-Hydrologically Connected) split.

In August of 2020, the Lower Elkhorn Board of Directors once again authorized a signup period to receive applications for Standard Variances to Expand Irrigated acres within the District. This authorization would allow for the development of up to 295.00 AF of new peak season depletions within the hydrologically connected portion of the district and up to 2,500 new irrigated acres in the non-hydrologically connected area.

In November of 2020, the Board of Directors voted to allow up to **286.42** acre feet of new peak season depletions in the *hydrologically connected portion* of the District, and up to **2676.77** new groundwater irrigated acres in the *non-hydrologically connected* portion of the District. For accounting purposes, at this time only the new depletions located with the current hydrologically connected portion of the LENRD are accounted for and reported to the Coalition. Any future boundary amendment will require the LENRD to account for any new depletions approved outside of the current hydrologically connected area, dating back to the beginning of the first increment (2016).

The attached spreadsheet (LENRD\_Appendix B\_New Depletions) lists the site specific information for each allowed new depletion.

3422.70 AF Available – 286.42 New Depletions (LENRD) = 3,136.28 AF Remaining

#### 5.0 Transfers

The Lower Elkhorn Natural Resource District did not receive or approve any groundwater use transfer requests during this reporting period, therefore no data is provided for this section.

#### 6.0 <u>Permits for High Capacity Wells</u>

The attached table entitled LENRD\_Well Permits\_2020 lists the well permits issued for 85 high capacity wells in the Lower Elkhorn NRD between January 1, 2020 through December 31, 2020. A breakdown of this inventory includes permits for: irrigation (76 - 18 replacement well permits), commercial/industrial (3), livestock (3), public water supply (2), and fire protection or other (1).

#### 7.0 <u>Retirement of Groundwater Consumptive Uses</u>

During the 2020 reporting period, there were no retirements of groundwater uses inventoried or reviewed within the Lower Elkhorn NRD.

#### 8.0 Flow Meter Data

As of January 1, 2019, all active high-capacity wells are required to be equipped with a flow meter to measure the total annual groundwater withdrawal, and to report water-use readings to the LENRD by December 1 of each calendar year. The water use information is inventoried into a central data management system that was developed for the LENRD by Phoenix Webgroup (PWG) of Waverly, NE. This data management system, which houses the information from over 5,000 flow meters, also contains a user interface that allows well owners or operators to submit their information using a web-based interface.

Water use information on flow meters associated with irrigation use for the 2020 pumping season, is itemized in three Excel Spreadsheets (LENRD\_2020 Water-use\_Nonsubarea), (Eastern Madison Subarea\_2020\_Water-use), (Wayne Subarea\_2020\_Water-use).

#### 9.0 Water Banking Activities

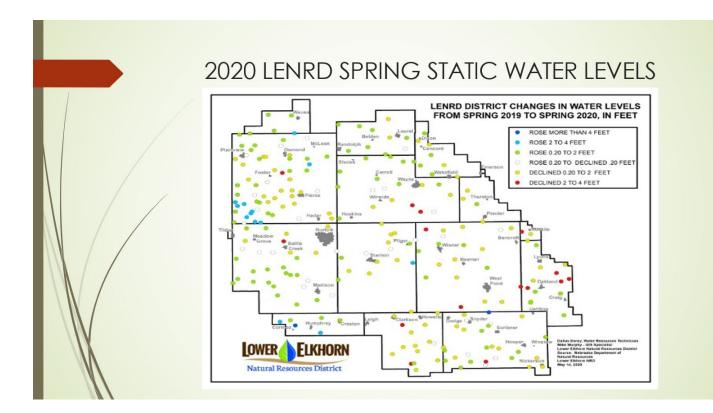
The Lower Elkhorn NRD does not currently participate in any water banking activities and therefore no data exists for this reporting requirement.

#### 10.0 Stream-flow Accretion Activities

Within the Lower Elkhorn NRD there are currently no operating projects that would create reporting data associated with stream flow augmentation or to compensate for any conjunctive management requirements.

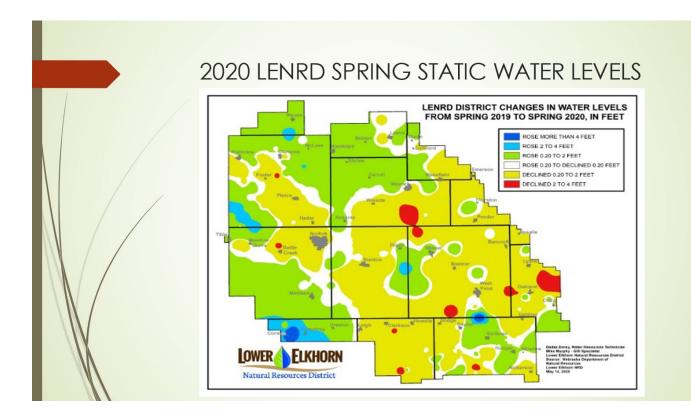
#### 11.0 Groundwater Elevation Observations

The District collects annual water-level observations from approximately 234 privately owned irrigation wells. Data collection typically occurs during March of each calendar year and the map above illustrates the changes in groundwater elevation data between the Spring of 2019 and the Spring of 2020.



As illustrated by the map above, the aquifer systems in the Lower Elkhorn NRD are geologically diverse, and subsequently the groundwater levels react differently by location. This phenomenon presents a situation where the year-to-year water level data will vary significantly at the local level. That being stated, groundwater levels have generally been very resilient in the Lower Elkhorn NRD and have (in the past) recovered from periods of deficit precipitation coupled with increased groundwater demand.

The map below uses spatial analyst to display the same data-set depicted in the map above, and highlights portions of the District that experienced year to year declines in groundwater supplies, which the District will continue to monitor and analyze with future data collection events.



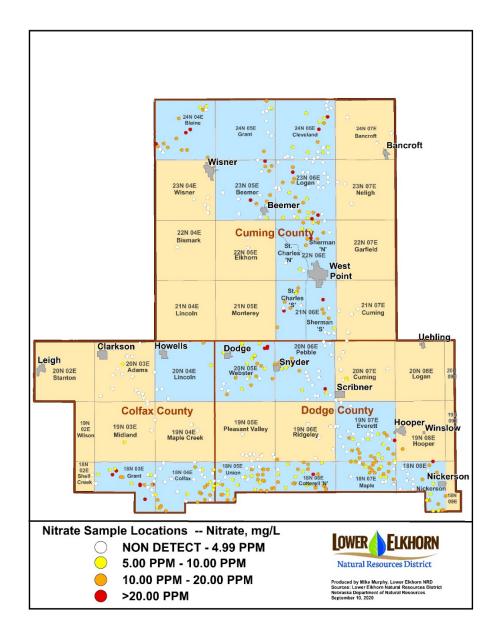
#### 12.0 Stream-gage Measurements

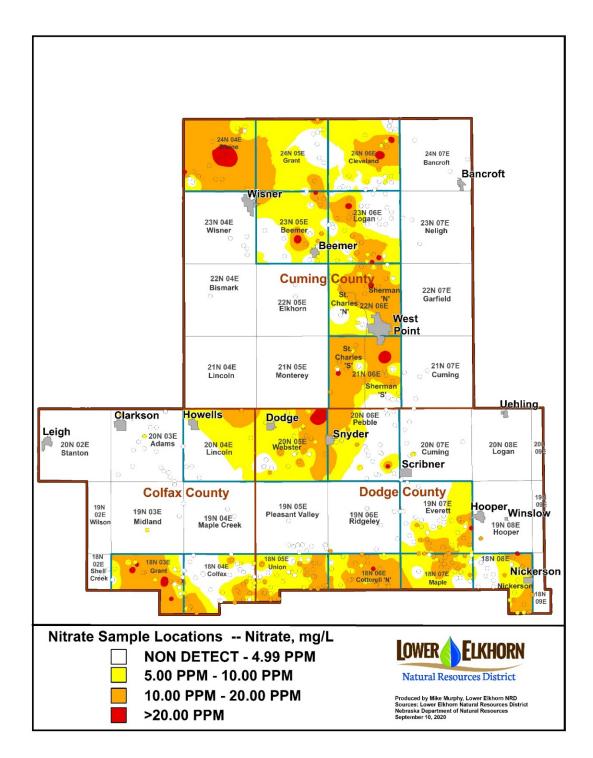
The Lower Elkhorn NRD does not maintain any stream gages within the District that are independent of gage-data collected by the United States Geological Survey (USGS) or the Nebraska Department of Natural Resources (NDNR).

#### 13.0 NRD Regulations and Management Activities

There were no amendments to the Groundwater Management Area Rules and Regulations during 2020, however the District has proposed the delineation of a Phase 2 Area in portions of Cuming, Colfax, and Dodge Counties within the LENRD. Well sampling studies conducted during 2018, 2019, and 2020 have provided sufficient data to effectively evaluate groundwater nitrate concentrations in these areas. There are a sufficient number of wells within these proposed areas that contain the minimum threshold of nitrate concentration per location to warrant the delineation of a management area for the protection of groundwater quality.

A webinar was hosted via Zoom on December 17, 2020 to inform stakeholders of the proposed changes and an Open House and Public Hearing is planned for March of 2021 to receive public input on the amendments. Maps of the proposed management area, along with information regarding the nitrate concentrations are displayed below.





### 14.0 <u>New Depletions Accounting Report</u>

Peak season new depletions are recorded in a separate attachment entitled *LENRD\_Appendix B\_New Depletions*.

#### 15.0 New Data Collected Through Models or Studies

#### Hydrogeologic Groundwater Modeling

The LENRD continues to invest in the development of new tools that will further the understanding of the groundwater resource within the District. As reported in the past, the LENRD, in partnership with NeDNR, continues the development of the multi-dimensional hydrogeologic groundwater model under the direction of JEO Consulting Group. Building upon the pilot-scale effort that centered over a portion of Wayne, Cedar, and Pierce Counties, the effort was expanded to include the entire District.

The current status of the model development includes the first draft of the geologic cross sections and associated map units, the continued calibration and development of the transient model, and the development of a web-based graphic user interface (GUI) which will allow for easier software troubleshooting and updates, as well as multi-user functionality. The project is tentatively scheduled to conclude by the second quarter of 2021.

PermitNumber	OwnerName Tov	vnship Range	Section Quarter1	Quarter2	Received /	Approved Expi	rationDate	WellUse	IsRep	lac Acres Origina	ll Origir	all FlowMeter	WellDriller RegCd County	Notes
LE-20-01	Webster Land Co		6 23 NW	SE	1/9/2020	1/9/2020	1/9/2021	Irrigation	No	135.66	No	Yes	Dvorak Well - North Benc Dodge	
LE-2020-02-C	Nebraska Military D	23 1W	4 NW	SE	1/10/2020	1/10/2020	1/10/2021	Commercia	a No		No	Yes	Sargent Drilling - Geneva Madison	
LE-2020-04-L	Doug Oertwich	23 3E	26 NW	NW	1/10/2020	1/10/2020	1/10/2021	Livestock	No		No	Yes	Dietz Well & FG-189310 Stanton	
LE-2020-03	Brandl Farms	21 01W	3 SE	NW	1/10/2020	1/10/2020	1/10/2021			75.07	No	Yes	Dietz Well & Pump - Norl Madison	
LE-2020-07	Andrew Feller	23 4E	15 NW	SW	1/21/2020	1/21/2020	1/21/2021			63.28	No	Yes	Dietz Well & Pump - Norl Cuming	
LE-2020-08	Kevin Bonner	22 03W	28 SE	NW	1/21/2020	1/21/2020	1/21/2021			132	No	Yes	Grosch Irrigation - Albion Madison	
LE-2020-06	Donald Bauermeiste	24 02W	31 NE	NW	1/21/2020	1/21/2020	1/21/2020			26.79	No	Yes	Dietz Well & Pump - Norl Madison	
LE-2020-05	Dan Scheer	22 2W	28 SE	SE	1/21/2020	1/21/2020	1/21/2021			123	No	Yes	Grosch Irrigat G-189188 Madison	
LE-2020-09	Flying K Ltd	23 04W	27 SW	The second second			1/21/2021	and the second	and the second sec	132.8	No	Yes	Sargent Irrigal G-189405 Madison	
LE-2020-10	Grain Belt LLC	27 01E	22 SW		1/21/2020	1/21/2020	1/21/2021				No	Yes	Christensen V G-189565 Wayne	
LE-2020-11	Landon & Malissa G	25 01E	30 SW	NE	1/23/2020	1/23/2020	1/23/2021			78.5	No	Yes	Buchanan Well - Osmonc Wayne	
LE-2020-12	Marvin Guenther	21 06E	5 SE	SE	1/23/2020	1/23/2020	1/23/2021		*********************	31.36	No	Yes	Dietz Well & Pump - Norf Cuming	
LE-2020-17	Krusemark Land LLC	24 4E	22 SE	SW	1/23/2020	1/23/2020	1/23/2021	allest and a second s	account of the second	136.77	No	Yes	Dietz Well & Pump - Norf Cuming	
LE-2020-13	Kenneth F Haseman	20 07E	24 SW	NE	1/23/2020	1/23/2020	1/23/2021			63.9	No	Yes	Dvorak Well - G-189462 Dodge	
LE-2020-18	James H Schutt	22 04W	11 SW	SW	1/23/2020	1/23/2020	1/23/2021	and the second second second second		134.56	No	Yes	Sargent Irrigal G-189408 Madison	
LE-2020-15	Kurt Janke	27 01E	15 SW	377	1/23/2020	1/23/2020	1/23/2021		and and a second second second	135.7	No	Yes	Christensen Well - Hartin Wayne	
LE-2020-15	Robert Klassen	22 03W	33 SE	NW	1/23/2020	1/23/2020	1/23/2021	and the second second second second		215.65	No	Yes	Grosch Irrigation - Albion Madison	
	Chad Hemmer - Her	22 03W			1/23/2020	1/23/2020	1/23/2021			150.55	No	Yes	Grosch Irrigat G-189338 Madison	
LE-2020-14			34 NW	NW										
LE-2020-23	Russell Poppe	19 7E	8 SE	SW	1/31/2020	1/31/2020	1/31/2021			115.87	No	Yes	Dvorak Well - North Benc Dodge	
LE-2020-24	Jeremiah T Schantz	23 4E	16 NW	SW	1/31/2020	1/31/2020	1/31/2021	and the second	CONCERCICLES AND	39.8	No	Yes	Dietz Well & Pump - Norf Cuming	
LE-2020-21	Douglas Nelson	27 04E	16 SW	SE	1/31/2020	1/31/2020	1/31/2021			134.25	No	Yes	Christensen Well - Hartin Dixen	
LE-2020-19	William Martin	22 05E	22 SW	SW	1/31/2020	1/31/2020	1/31/2021			134.85	No	Yes	Dietz Well & Pump - Norf Cuming	
LE-2020-20	Edward Neesen	18 05E	19 NE	SW	1/31/2020	1/31/2020	1/31/2021	and the second	and the second second	150.8	No	Yes	Webster Well - North Bei Dodge	
LE-2020-22	Karen Matteo and V	26 1E	7 NE	NE	1/31/2020	1/31/2020	1/31/2021			133	No	Yes	Christensen Well - Hartin Wayne	
LE-2020-25-PWS	Village of Snyder	20 6E	18 SE	NW	2/4/2020	2/4/2020	2/4/2021		mummmmm		No	Yes	Downey Drilling - Lexingt Dodge	
LE-2020-30	John Uecker	24 1W	10 NW	NW	2/12/2020	2/12/2020	2/12/2021			34.4	No	Yes	Dietz Well & Pump - Norf Madison	
LE-2020-27	Jerry Schulz	22 2W	10 SE	SE	2/12/2020	2/12/2020	2/12/2021			67.61	No	Yes	Sargent Irrigal G-189406 Madison	
LE-2020-26	Dan Weidner	23 3W	27 NE	SW	2/12/2020	2/12/2020	2/12/2021			135.69	No	Yes	Dietz Well & Pump - Norl Madison	
LE-2020-31	Gladys Vodvarka an	20 5E	3 SW	SW	2/12/2020	2/12/2020	2/12/2021	Irrigation	No	32.63	No	Yes	TBD Dodge	
LE-2020-32-L	Harold Schmidt Tru:	22 2W	27 SW	SW	2/12/2020	2/12/2020	2/12/2021	Livestock	No		No	Yes	Dietz Well & Pump - Norl Madison	
LE-2020-28	Paula Baack	20 6E	27 SE	SE	2/12/2020	2/12/2020	2/12/2021	Irrigation	No	89.37	No	Yes	Webster Well - North Bei Dodge	
LE-2020-34	KCW, CDW, BRW Inv	24 6E	22 SW	SE	2/20/2020	2/20/2020	2/20/2021	Irrigation	No	128	No	Yes	Webster Well - North Bei Cuming	
LE-2020-36	Jacob Wostrel	25 3W	31 SW	NW	2/20/2020	2/20/2020	2/20/2021	Irrigation	No	59.97	No	Yes	Grosch Irrigation - O'Neil Pierce	
LE-2020-35	Patty, Scott & Kathy	23 6E	24 NE	NW	2/20/2020	2/20/2020	2/20/2021	Irrigation	No	137	No	Yes	Christensen VG-189510 Cuming	
LE-2020-33	Bryan & Amy Rents	19 7E	7 NE	SE	2/20/2020	2/20/2020	2/20/2021	Irrigation	No	132.84	No	Yes	Dietz Well & Pump - Norf Dodge	
LE-2020-38-PWS	Randy Woldt - City (	23 4E	2 NE	NE	2/28/2020	2/28/2020	2/28/2021	Public Wat	€ No		No	Yes	Sargent Irrigation - Gene Cuming	
LE-2020-37	Paul Renner	22 1E	15 NW	NE	2/28/2020	2/28/2020	2/28/2021	Irrigation	No	97.39	No	Yes	Sargent Irrigal G-189553 Stanton	
LE-2020-39	Paul Ridder	21 5E	13 SE	NW	3/2/2020	3/2/2020	3/2/2021	Irrigation	No	80.31	No	Yes	Dietz Well & Pump - Norl Cuming	ananananana
LE-2020-40	Mt Edna Farms LLC	25 7E	31 SW	SW	3/20/2020	3/20/2020	3/20/2021	Irrigation	No	125.02	No	Yes	Christensen Well - Hartin Thurston	n
LE-2020-41	Brian Haisch	28 3E	14 NW	SW	3/30/2020	3/30/2020	3/30/2021			44.93	No	Yes	Christensen Well - Hartin Cedar	
LE-2020-42-R	Mike Uecker	25 1W	8 SE	SE	3/31/2020	3/31/2020	3/31/2021			120.07	No	Yes	Dietz Well & FG-023459 Pierce	
LE-2020-43	Timothy Spatz - TLS	26 4W	5 SE	NW	3/31/2020	3/31/2020	3/31/2021		*****************	134.29	No	Yes	Sargent Irrigat G-189555 Pierce	
LE-2020-44	Kevin Anderson	22 10E	7 NW	NE	4/20/2020	4/20/2020	4/20/2021		and the second contraction of the	134	No	Yes	Grosch Irrigation - Albion Burt	
LE-2020-45	Mike Moeller	19 8E	28 NW	NE	4/27/2020	4/27/2020	4/27/2021			122.34	No	Yes	Webster Well - North Bei Dodge	
LE-2020-46-R	Neal H. Paul ETAL	29 3E	19 SW	NE	4/27/2020	4/27/2020	4/27/2021			123.51	Yes	Yes	Christensen Well - Hartin Cedar	
LE-2020-47	Cynthia L. Weitzenk	20 8E	17 NW1/4	NE1/4		5/14/2020	5/14/2021		adunation	68.41	No	No	Dietz Welll & Pump Co. Dodge	
LE-2020-48	Platte Valley Equipn	18 8E	26 NW	NW		5/19/2020	5/19/2021		*****************		No	No	Webster Well Co. Dodge	
LE-2020-49-R	Cedar View Country	28 3E	9 SW	NW		5/29/2020	5/29/2021				No	No	Buchanan We G-066053 Cedar	
LE-2020-50-R	Bill Paasch	20 6E	25 NE	SW		6/3/2020	6/3/2021		*******************	80	No	No	Grosch Irrigat G-152207 Dodge	North Contractory
LE-2020-51-R	Gould Brothers Fam	20 0L 29 3E	12 SW	NW		6/18/2020	6/18/2021			120.7	No	No	Christensen V G-134964 Cedar	
			*****											
LE-2020-52-R	David Kleinschmit	29 2W	14 NW	NW		7/20/2020	7/20/2021		***********************	129.86	Yes	No	Sargent Irrigat G-058092 Knox	
LE-2020-53-R	Lynn Borgelt	23 4E	23 SE	NE		7/21/2020	7/21/2021	****************************	*************	134.82	No	No	Grosch Irrigat G-039502 Cuming	******
LE-2020-54-R	Judith A Regan Trus	24 1E	15 NW	NW		7/22/2020	7/22/2021	*****		136.18	No	No	Sargent Irrigal G-055847 Stanton	
LE-2020-55-R	Carroll Hasemann	18 GE	1 SE	SW		8/5/2020	8/5/2021	*************************	****************	206.14	No	No	Sargent Irrigal G-006321 Dodge	
LE-2020-56-R	Dean Vavricek	18 4E	2 SE	NE		8/6/2020	8/6/2021		****************	219	Yes	No	Sargent Irrigal G-047434 Colfax	
LE-2020-58-L	Wes Sievers	26 3E	10 SW	NE		8/19/2020	8/19/2021				No	No	Buchanan We G-191187 Wayne	
LE-2020-57-R	Roland Collison Farr	28 3E	13 SE	SE	Sold Sold Sold Sold Sold Sold Sold Sold	8/19/2020	8/19/2021			134.12	Yes	No	Christensen V G-046454 Cedar	
LE-2020-59-R	Henry Sjuts Family 1	20 2W	34 NW	SE		9/2/2020	9/2/2021			162.35	Yes	No	Sargent Irrigat G-009035 Platte	
LE-2020-60-C	James Pruss	21 4E	36 SE	SW		9/29/2020	9/29/2021	Commercia	a Yes		Yes	No	Rutjens Const G-094804 Cuming	

LE-2020-62-R	Pat Brockhaus	23 1W	7 SE	SE	9/30/2020	9/30/2021 Irrigation	Yes	122.41	Yes	No	Dietz Well & FG-069566 Madison
LE-2020-61-R	Tim & Carol Schellp	23 3E	5 SW	SE	9/30/2020	9/30/2021 Irrigation	Yes	21.18	Yes	No	Dietz Well & FG-122850 Stanton
LE-2020-63-R	Marvin Gesell Irr Trı	25 1W	25 NW		10/20/2020	10/20/2021 Irrigation	Yes	120	Yes	No	Dietz Well & FG-052479 Pierce
LE-2020-64-R	Jason Lauritsen - Ha	23 9E	36 NW	SE	10/20/2020	10/20/2021 Irrigation	Yes	188.81	Yes	No	Dietz Well & FG-052723 Burt
LE-2020-65	Joan Lackas	27 3W	6 SE	NE	10/28/2020	10/28/2021 Irrigation	No	111.47	No	No	Sargent Irrigation Pierce New well for existing irrigated acres - no new acres
LE-2020-66-R	Alan Krienert	26 4w	2 SE	NE	11/17/2020	11/17/2021 Irrigation	Yes	131.09	Yes	No	Sargent Irrigal G-054453 Pierce
LE-2020-67-R	Sam Woodrow - Cot	23 2W	12 NE	SE	11/17/2020	11/17/2021 Irrigation	Yes	146.09	Yes	No	Dietz Well & FG-049610 Madison
LE-2020-68-R	Herb Hasenkamp	23 5E	. 29 SE	SW	11/20/2020	11/20/2021 Irrigation	Yes	70	Yes	No	Dietz Well & FG-047835 Cuming
LE-2020-69-R	Robert Mulliken - N	18 8E	25 SW	NE	12/9/2020	12/9/2021 Irrigation	Yes	96.5	Yes	No	Webster Well G-074355 Dodge Accompanies approved variance to expand irrigated acre
LE-2020-70	John & Karen Mang	26 1E	23 NE	SW	12/9/2020	12/9/2021 Irrigation	No	117.32	No	No	Christensen Well Co Ha Wayne New well for new irrigated acres.
LE-2020-71	Eric Knobbe	22 5E	20 SW		12/10/2020	12/10/2021 Irrigation	No	135.13	No	No	Dietz Well & Pump Co I Cuming New well for new irrigated acres.
LE-2020-75	Allen Knapp	23 3W	27 NE		12/14/2020	12/14/2021 Irrigation	No	116.95	No	No	Dietz Well & Pump Co I Madison New well for new irrigated acres.
LE-2020-76	John Frey	23 4W	35 NE	SW	12/14/2020	12/14/2021 Irrigation	No	66.78	No	No	Sargent Irrigation - Neligl Madison New well for new irrigated acres.
LE-2020-74	Grain Belt LLC	28 2E	13 SW		12/14/2020	12/14/2021 Irrigation	No	138.29	No	No	Christensen Well Co Ha Cedar New well for new irrigated acres.
LE-2020-73	Terry Sorensen	29 3W	32 N1/1	NW1/4	12/14/2020	12/14/2021 Irrigation	No	63.5	No	No	Sargent Irrigation - Neligl Knox New well for new irrigated acres.
LE-2020-72	Barbara Brahmer	22 4E	18 SE		12/14/2020	12/14/2021 Irrigation	No	119.47	No	No	Dietz Well Co. Cuming New well for new irrigated acres.
LE-2020-81	Keith Dittrich	23 4W	16 NE	SE	12/22/2020	12/22/2021 Irrigation	No	78	No	No	Sargent Irrigation - Neligl Madison New well for new irrigated acres.
LE-2020-78	Floyd Melcher	21 3W	1 SW		12/22/2020	12/22/2021 Irrigation	No	133.97	No	No	Grosch Irrigation - Albion Madison New well for new irrigated acres.
LE-2020-77	Todd Mink	22 3W	17 SE	·	12/22/2020	12/22/2021 Irrigation	No	134.28	No	No	Sargent Irrigation - Neligl Madison New well for new irrigated acres.
LE-2020-82	Boyd Ebberson	27 1E	11 SE	NW	12/22/2020	12/22/2021 Irrigation	No	130.17	No	No	Dietz Well & Pump Co I Wayne New well for new irrigated acres.
LE-2020-83	Greg Lackas	28 2E	32 SW		12/22/2020	12/22/2021 Irrigation	No	134.74	No	No	Christensen Well Co Ha Cedar New well for new irrigated acres.
LE-2020-80	Dirk Petersen	23 3E	27 NE		12/22/2020	12/22/2021 Irrigation	No	124.27	No	No	Dietz Well & Pump Co. Stanton New well for new irrigated acres.
LE-2020-79	Virgil Preister	21 3W	25 SE	NW	12/22/2020	12/22/2021 Irrigation	No	137.19	No	No	Sargent Irrigation - Neligl Madison New well for new irrigated acres.
LE-2020-84	Brent Tietz	23 7E	18 NE		12/28/2020	12/28/2021 Irrigation	No	90.37	No	No	Christensen Well Co Ha Cuming New well for new irrigated acres.
LE-2020-85	Grothe Farms LLC	25 1E	29 NW		12/28/2020	12/28/2021 Irrigation	No	124.47	No	No	Buchanan Well Co Osm Wayne New well for new irrigated acres.
LE-2020-86	Larry Faltin	20 5E	3 NE	SW	12/28/2020	12/28/2021 Irrigation	No	100.63	No	No	Sargent Irrigation Co Gi Dodge New well for new irrigated acres.

.

.

10/50 Applica	Latitude	Longitude	County	Tow Rans	Sectic N		Depletion Factor	Acres Request ed	ve Crop Factor		d Transmissivit Ca g. y Value (From cit bil CSD Map) We		amate / Proven xisting Well Yield all Yield gpm		s Nonco r mplianc e e w/R&R		S other CWA Permit?	NRD Stay	AF Dep	Peak Season Dep		
10/50 20-001		-96.516585	COLUMN STATES OF A	19 8E	27	31.02	78.32	31.02	7 0.58	8 19	95 200 to 250 23	3	1250 1266.66	no	no	no	no	no	14.16	4.25		
10/50 20-008		-97.588078		24 2W	22	15.62		15.62			86 100 to 150 23		800 1166.66	no	no	no	no	no	7.95	2.39		
10/50 20-069	41.789049	-96.516939	Burt	21 8E	15	13.29	79.87	13.29	8 0.67	7 18	81 20 to 50 13	3	800 1033.33	no	no	no	no	no	7.07	2.12		
10/50 20-021	41.579235	-96.735138	Dodge	19 6E	33	26.91	96	26.91	8 0.67	7 18	83 150 to 200 32	2	1000 1141.66	no	no	no	no	no	17.21	5.16		
10/50 20-072	41.92765	-96.98605	Cuming	. 23 4E	32	24.95	16.27	24.95	8 0.67	7 14	45 20 to 50 18	8	800 966.66	no	no	no	no	no	2.70	0.81		
10/50 20-025	41.851403	-97.634976	Madison	22 3W	26	83.73	15	83.73		_	58 50 to 100 28		1000 1166.66	no	no	no	no	no	9.42	2.83		
10/50 20-056	42.004158	-97.037308		24 3E	36	19.14	81.18	19.14			32 20 to 50 41		800 1447.00	no	no	no	yes	no	10.35	3.10		
10/50 20-018		-97.566378		21 2W	8	136.3		136.3			53 50 to 100 16		1000 850.00		no	no	no	no	24.55	7.37		
10/50 20-077		-96.565979		19 7E	24	4.55	77.25	4.55		_	96 100 to 150 29		900 966.66		no	yes	no	no	2.34	0.70		
10/50 20-035		-96.447345		18 9E	19	19.66		19.66			37 20 to 50 29		900 1133.33		no	no	no	no	10.59	3.18		
10/50 20-038		-97.654151		22 3W	27	135.31		135.3		-	36 50 to 100 31		1000 1100.00		no	no	no	no	13.94	4.18		
10/50 20-073		-96.9932		23 4E	32	133.96	16.27	134	8 0.67		55 20 to 50 21		1000 950.00		no	no	no	no	14.52	4.35		
10/50 20-026		-97.586148		21 2W	6	133.96	23	134			34 100 to 150 17		1000 550.00		no	no	no	no	23.11	6.93		
10/50 20-009		-96.536822		20 8E	21	12.07		12.07			55 0 to 20 12	-	550 866.66		no	no	no	no	7.05	2.11		
10/50 20-061		-97.645125		23 3W	27	116.95	19.78	117	9 0.75		85 50 to 100 28		1000 1066.66		no	no	no	no	17.35	5.20		
10/50 20-079		-97.024698		23 3E	25	10.69		10.69	8 0.67		94 20 to 50 26		750 966.66	no	no	no	no	no	3.01	0.90		
10/50 20-019		-97.751286		23 4W	35	66.78		66.78	9 0.75		85 50 to 100 27			yes	no	no	no	no	9.02	2.71		
10/50 20-003		-97.683085		22 3W	17	134.28		134.3	9 0.75	-	90 50 to 100 34		1000 1200.00		no	no	no	no	12.09	3.63		
10/50 20-029		-97.238134		22 2E	7	19.9	74.69	19.9	8 0.67		85 50 to 100 41		1250 1233.33		no	no	no	no	9.90	2.97		
10/50 20-016		-96.473261		18 8E	24	96.5	77.01	96.5	7 0.58		59 50 to 100 47		500 1066.66	-	no	no	no	no	43.33	13.00		
10/50 20-032		-97.547163		21 2W	16	128.98	33	129	9 0.75		00 50 to 100 12		1000 916.66		no	no	no	no	31.92	9.58		
10/50 20-022		-97.615526		21 3W	1	133.97	21.87	134	9 0.75		88 50 to 100 25		1000 1150.00		no	no	no	no	21.97	6.59		
10/50 20-081		-97.780329		23 4W	16	78	32	78		_	94 50 to 100 23		1100 850.00		no	no	no	no	18.72	5.62		
10/50 20-046		-97.769811		23 4W	22	117.88		117.9	9 0.75		89 50 to 100 20		1000 883.33		no	no	no	no	23.22	6.96		
10/50 20-024		-97.064111		23 3E	27	138.55		138.6	8 0.67		13 50 to 100 35		850 1088.33	•	no	no	no	no	49.65	14.90		
10/50 20-034		-96.579085		18 7E	14	79.94		79.94	7 0.58		39 20 to 50 31		1000 976.66		no	no	no	no	27.96	8.39		
10/50 20-054		-96.494529		28 8E	14	88.8	85.42	88.8			48 50 to 100 43		700 1033.33	•	no	no	no	no	44.22	13.27		
10/50 20-044				21 3W	25	137.19	66.91				13 20 to 50 14		850 1016.66		no	no	no	no	68.85	20.65	tera de la trata da trata - da d	
10/50 20-074		-97.037935		28 3E	11	22.63	94.82				11 20 to 50 27		900 766.66		no	no	no	no	16.09	4.83		
10/50 20-057		-96.673366		19 7E	31	129.19	90.64				58 20 to 50 38		2000 1083.33		no	no	no	no	77.99	23.40		
10/50 20-050		-97.404892		24 1W	14	19.19	98.06				37 20 to 50 54		650 883.33	· · · · · · · · · · · · · · · · · · ·	no	no	no	no	14.11	4.23		
10/50 20-007		-97.616083		25 3W	12	137.67	70.38				33 20 to 50 23		1000 1050.00		no	no	no	no	72.67	21.80		
10/50 20-076		-97.107867		23 3E	10	40.19	81.91				45 50 to 100 45		500 900.00		no	no	no	no	21.92	6.58		
10/50 20-030		-97.766193		24 4W	10	61.4	83.54	61.4	9 0.75		37 50 to 100 31 54 0 to 20 16		900 1266.66		no	no	no	no	38.47	11.54		
10/50 20-070		-96.569932		24 7E	24	66.07	86.75						600 850.00		no		no	no	38.17	11.45		
10/50 20-028		-96.81729		26 5E	11	69.7	96	69.7	8 0.67		53 0 to 20 26			yes	no	no	no	no	44.56	13.37	E4 72 Total	286 42 Deak Season
10/50 20-088 10/50 20-089		-96.608922 -97.537604		24 7E	15	132.66	96 93.12	132.3	8 0.67 9 0.75		30 0 to 20 18 37 20 to 50 9	-	700 866.66		no	no	no	no	<u>84.56</u> 93.81	28.14	554.75 TOTAL	286.42 Peak Season
				21 2W	27	134.32							1000 900.00		no	no	no	no				
10/50 20-078 10/50 20-092		-97.433131 -96.488688		24 1W 22 8E	33	53.16 152.5	96.16 84.39			-	01 50 to 100 88 15 20 to 50 17		1000 558.33 700 933.33	-	no			no	38.34 85.71	11.50 25.71		
10/50 20-092		-96.488688		22 8E 24 2W	35		84.39 99				54 50 to 100 27				no	yes		no	86.87	26.06		
10/50 20-085		-97.509222		24 2W	26 28	117 117.58		117 117.6			92 20 to 100 27		1000 933.33		no	yes	Sector Control of Cont	no	86.87	26.06		
10/50 20-064		-97.54715		21 2W	33	117.58		129.3			20 10 50 11 20 20 to 50 9	L	750 266.66 500 266.66		no		no	no	81.13	24.34		
10/50 20-088		-97.5562		21 200 20 2W	35	256.97	92.75	257	9 0.75		95 20 to 50 12	2			no		no	no	185.02	55.51		
10/50 20-042		-97.085977		20 200 28 3E	4	96.13	89.39				31 0 to 20 27		450 566.66	no	no		no	no	64.45	19.33		
10/50 20-084	42.434097	-71.002911	Ceudi	20 JE	4	30.13	03.33	30.13	3 0.75	13	51 01020 27	/	430 300.00	yes	no	no	no	no	04.45	19.33		