# CLAIM OF BENEFICIAL USE for Surface Water Permits claiming more than 0.1 cfs



Oregon Water Resources Department 725 Summer Street NE, Suite A Salem, Oregon 97301-1266 (503) 986-0900 www.wrd.state.or.us

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A fee of \$200 must accompany this form for <u>permits</u> with priority dates of July 9, 1987, or later.

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#### A separate form shall be completed for each permit.

In cases where a permit has been amended through the permit amendment process, a separate claim for the permit amendment is not required. Incorporate the permit amendment into the claim for the permit.

This form is subject to revision. **Begin each new claim** by checking for a new version of this form at: <a href="http://www.oregon.gov/owrd/pages/wr/cwre\_info.aspx">http://www.oregon.gov/owrd/pages/wr/cwre\_info.aspx</a>

The completion of this form is required by OAR 690-014-0100(1) and 690-014-0110(4).

Please type or print in dark ink. If this form is found to contain errors or omissions, it may be returned to you. Every item must have a response. If any requested information does not apply to the claim, insert "NA." Do not delete or alter any section of this form unless directed by the form. The Department may require the submittal of additional information from any water user or authorized agent.

"Section 8" of this form is intended to aid in the completion of this form and should not be submitted.

If you have questions regarding the completion of this form, please call 503-986-0900 and ask for the Certificate Section.

The Department has a program that allows it to enter into a voluntary agreement with an applicant for expedited services. Under such an agreement, the applicant pays the cost to hire additional staff that would not otherwise be available. This program means a certificate may be issued in about a month. For more information on this program see <a href="http://www.oregon.gov/owrd/pages/mgmt\_reimbursement\_authority.aspx">http://www.oregon.gov/owrd/pages/mgmt\_reimbursement\_authority.aspx</a>

#### **SECTION 1**

#### **GENERAL INFORMATION**

#### 1. File Information

APPLICATION #	PERMIT#	PERMIT AMENDMENT #	sin
S-18423	S-18547	Т-	

2. Property Owner (current owner information)

APPLICANT/BUSINESS NAME		PHONE NO.		ADDITIONAL CONTACT NO.	
Warmsprings Irrigation District		541-473-39	51	-377	
Address					
334 Main Street North		210	I Server	Lexonrenimies	
Сіту	STATE	ZIP	E-Mail		
Vale	OR	97918	wid4water(	@qwestoffice.net	

If the current property owner is not the permit holder of record, it is recommended that an assignment be filed with the Department. <u>Each permit holder of record must sign this form.</u>

3. Permit or holder of record (this may, or may not, be the current property owner)

PERMIT HOLDER OF RECOR	D	
Warmsprings Irrigation	District	dan en timos per liguralli dine co con il di mesa poro i e con i
Address		
334 Main Street North		
CITY	STATE	ZIP
Vale	OR	97918
	A0110-0-0-0	Date (1) DOLLE-318-19-5 HARL Schember in most and to adde in the con-

ADDITIONAL PERMIT	Holder of Record		
n/a	ateletation of "A 47" featre, and a		
Address			
CITY	STATE	ZIP	

- 4. Date of Site Inspection:
- 5. Person(s) interviewed and description of their association with the project:

Name	DATE	Association with the Project
Randy Kinney	4 6	Irrigation District Manager

- 6. County: Malheur
- 7. If any property described in the place of use of the permit final order is excluded from this report, identify the owner of record for that property (ORS 537.230(4)):

OWNER OF RECORD			
n/a Address			
Сіту	STATE	ZIP	

Add additional tables for owners of record as needed

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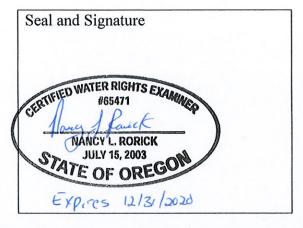
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# SECTION 2 SIGNATURES

# CWRE Statement, Seal and Signature

The facts contained in this Claim of Beneficial Use are true and correct to the best of my knowledge.



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CWRE NAME		PHONE NO	O.	ADDITIONAL CONTACT NO.
Nancy L Rorick		541-519-3	3644	
Address				
645 L Loop				
Сіту	STATE	ZIP	E-Mail	
Baker City	OR	97814	nrorick@	nlr-water.com

# Permit Holder of Record Signature or Acknowledgement

**Each** permit holder of record must sign this form in the space provided below.

The facts contained in this Claim of Beneficial Use are true and correct to the best of my knowledge. I

request that the Department issue a water right certificate.

SIGNATURE	PRINT OR TYPE NAME	TITLE	DATE
Cam/King	Randy Kinney	Manager	1/4/19
3	V1905FF		
	ee mal		

# SECTION 3 CLAIM DESCRIPTION

1. Point of diversion name or number:

1. Form of diversion maine of multiper.
POINT OF DIVERSION
(POD) Name or Number
(CORRESPOND TO MAP)
1. Vines Canal
2. JH Canal
3. Farmers Canal
4. GF Canal
5. Bully Creek Ditch
6. Bully Creek Exchange / Willow
Creek Pump Canal
7. Nevada Canal
8. Willow Creek Feeder Canal
9. Wood Drain / Blanton Drain

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POD Name or Number	Source	Tributary
1. Vines Ditch	VOID <sup>1</sup> return flow in the Malheur River, diversion out of the Malheur River	Snake River
2. JH Canal	VOID return flow in the Malheur River, diversion out of the Malheur River	Snake River
3. Farmers Canal	VOID return flow in the Malheur River, diversion out of the Malheur River	Snake River
4. GF Canal	VOID return flow in the Malheur River, diversion out of the Malheur River	Snake River
5. Bully Creek Ditch	VOID return flow in Bully Creek (Malheur River water stored in Bully Creek Reservoir)	Snake River
6. Bully Creek Exchange / Willow Creek Pump Canal	VOID Lateral 197 to WID Bully Creek Exchange Ditch (Malheur River water stored in Bully Creek Reservoir)	Snake River
7. Nevada Canal	VOID return flow in the Malheur River (diversion on the Malheur River) and backup water from the Owyhee Ditch	Snake River
8. Willow Creek Feeder Canal	VOID return flow from the Malheur River water stored in Bully Creek Reservoir via the Vale Main Canal discharged into Willow Creek and rediverted into the WID Willow Creek Feeder Canal	Snake River
9. Wood Drain / Blanton Drain	Old Owyhee Ditch Company flow from the Old Owyhee Ditch into the Wood Drain to the Blanton Drain to the Blanton Canal.	Malheur River

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<sup>&</sup>lt;sup>1</sup> Vale Oregon Irrigation District

3. Developed use(s), period of use, and rate for each use:

POD	Uses	IF IRRIGATION,	SEASON OR MONTHS	ACTUAL RATE OR VOLUME
Name or		LIST CROP	WHEN WATER	USED
Number		Түре	WAS USED	(CFS, GPM, or AF)
1. Vines	Irrigation	Various crops	From the Malheur	3
Ditch		including	Decree: "limited to	11.8 CFS
2. JH Canal	Irrigation	sugar beets,	the diversion not to	121 CFS
3. Farmers	Irrigation	wheat,	exceed one and one-	
Canal		potatoes,	half acre feet per	32.44 CFS
4. GF Canal	Irrigation	onions,	acre during any	123.1 CFS
5. Bully	Irrigation	alfalfa,	period of thirty days	
Creek Ditch		pasture	prior to June 1st of	19.44 CFS
6. Bully	Irrigation	grasses, corn,	each year, and	4. GF Canal
Creek		and grains.	thereafter not to	
Exchange /		737	exceed one-acre foot	
Willow	100	Country The	per acre during any	
Creek Pump			period of thirty	
Canal		Creek	days."	4.43 CFS
7. Nevada	Irrigation		(nigrose)	
Canal	1971	DID Stake	DECENTE	102.8 CFS
8. Willow	Irrigation		RECEIVED	Maller Creek Pamp Carek
Creek Feeder			JAN 09 2019	
Canal		plant 3	3AN 0 9 2019	26.2 CFS
9. Wood	Irrigation		OWRD	
Drain /	1.70	Codenii on	90000	
Blanton		= gie	orial ravill modific (area	
Drain		C One t	addinusilisty odds c	36.61 CFS
<b>Total Quantity</b>	of Water Us	ed	i kodina water from il	477.82 CFS

**4.** Provide a general narrative description of the distribution works. This description must trace the water system from **each** point of diversion to the place of use:

#### **Permit and BOR Contract Summary**

Permit S18547 (issued on September 1, 1948) with a 1939 priority date is for a supplemental water right held by the Warmsprings Irrigation District (WID) for "waste water." The permit defines this waste water as "waste and return flow from Vale, Oregon [now called Vale Oregon Irrigation District (VOID)], which water originates in the Malheur River." The waste water and return flow also include "water from the Owyhee and Ontario-Nyssa Irrigation Districts and the Owyhee Ditch Company lands, which water originates in the Owyhee River." The permit document shows that WID originally applied for 125 CFS, but that the permit was issued for 300 CFS.

The permit describes the points of diversion as "One diversion taken out of Willow Creek [POD 8] at the above point, the others not determined, part of the water drains directly into the present ditches of the District, will also use all our present diversion."

The permit was issued to establish a water right for return flow to WID from VOID under a Bureau of Reclamation (BOR) contract signed on April 30, 1926. The BOR contract specifies that WID accept return flow from VOID to the extent that water can be diverted and beneficially used by WID.

The return flow now used under this permit includes:

- all drainage and waste water from VOID that reach the Malheur River and are re-diverted into WID canals;
- all drainage and waste water from VOID that reaches Willow Creek and is re-diverted into the
   Willow Creek Feeder Canal and pumped from Willow Creek into the Willow Creek Pump Canal;
- all return flow and waste water from the Malheur River water stored (as part of the Vale project) in Bully Creek reservoir diverted into the Bully Creek Ditch;
- all water discharged from VOID, Owyhee Irrigation District, and Old Owyhee Ditch Improvement District canals directly into WID canals;
- all field runoff from the VOID, Owyhee Irrigation District and Old Owyhee Ditch Improvement District intercepted along the entire reach of the WID canals;
- Old Owyhee Ditch District Improvement District return flow (Old Owyhee Ditch) that backs up the Nevada Canal;
- and Old Owyhee Ditch spills excess water into the Wood Drain, which discharges to the Blanton Drain, which is pumped into the Blanton Canal (a lateral of the Nevada Canal).

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#### **System Description**

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The Warmsprings Irrigation District receives water from the Malheur River, Bully Creek, Willow Creek, Snake River, and Owyhee River drainage basins under permit S18547. This permit allows WID the use of Malheur River water diverted into Bully Creek and Willow Creek basin by the Vale project. It also allows WID to use water from the Owyhee Project and the Owyhee Ditch Company that flows into the WID. The Owyhee Project and Owyhee Ditch Company canals both contain water pumped from the Snake River at the Dunaway pumping station south of Nyssa.

The source reservoirs for the return flow are shown on map 1. The Warmsprings Reservoir owned by WID is the source of water for WID's primary reservoir right Certificate 48051. Permit S18547 is supplemental to Certificate 48051. The Beulah, Bully Creek and Owyhee Reservoirs are all BOR projects, the Warmsprings Reservoir is not. Map 2 shows the locations of the VOID and WID irrigation districts, and Map 3 shows lands irrigated under the Owyhee Project.

Map 4 shows the Owyhee and VOID canal systems that deliver water from the reservoirs and the Snake River that are the sources of the return flow used under Permit S18547. The VOID main canal diverts water from the Malheur River at Namorf. Water from the VOID canal is first used to irrigate fields at Harper. Return flow from these fields returns to the Malheur River and is picked up by WID downstream at the Vines Ditch, JH Canal, Farmers Ditch, GF Canal, and the Nevada Ditch (maps 5 and 6).

A portion of the Malheur River water from the Vale Main Canal is diverted north in VOID Lateral 197 into Bully Creek Reservoir. The VOID lands downstream from the Bully Creek Reservoir are irrigated with Malheur River water form the main canal, therefore return flow to Bully Creek from these lands is included under permit S18547. This water is diverted into WID's Bully Creek Ditch, which also receives water from the Farmers Canal.

Malheur River water is also diverted out of Bully Creek Reservoir to VOID's Lateral 197. At the end of Lateral 197 return flow enters WID's Bully Creek Exchange Canal (jointly managed by VOID and WID)

that then flows into WID's Willow Creek Pump Canal.

The Vale Main Canal crosses into the Willow Creek watershed to irrigate the lands above WID. Runoff from these lands enters Willow Creek and is re-diverted into WID's Willow Creek Feeder Canal; and is pumped from Willow Creek into the Willow Creek Pump Canal.

Lands on both the north and south borders of the WID are irrigated by the Owyhee Irrigation District. On the south side of WID water from the Owyhee Irrigation District enters directly into the WID Nevada Canal via the Shoestring Ditch. It also enters the WID canals as runoff in natural drainages at Morgan Lane and Onion Avenue. On the north side of WID, Owyhee water enters the GF Canal from the Henry's Gulch Drain. Owyhee water also enters the Willow Creek Pump Canal at the Belnap farm and at the End of the Owyhee Canal.

Due to the topographically lower position of the WID canals, they directly intercept field runoff and channel flow from VOID and the Owyhee District. Permit S18547 includes this in WID's water right by stating: "part of the water drains directly into the present ditches of the district."

Water from the Old Owyhee Ditch backs up the Nevada Canal and is also diverted into the Wood Drain, from the Wood Drain into the Blanton Drain, and into the Blanton canal (a lateral off the Nevada Canal).

#### **POD Definition**

The PODs are defined as the points where return flow is diverted from the Malheur River, Bully Creek and Willow Creek into a major WID canal; where the Bully Creek Exchange (jointly maintained by VOID and WID) discharges into the Willow Creek Pump Canal; and where the Old Owyhee Ditch can spill excess water into the Wood Drain and water also backs up into the Nevada. The inflow into the WID canals is not limited to these PODs, but also includes any inflow from natural drainages, drains, or canals from the other districts that discharge into the WID canals.

#### Flow Measurement

The VOID and WID measure the return flow to WID at various points. These include flow in the Malheur River, Bully Creek, and Willow Creek. These return flow points have automated gauges that are maintained by Idaho Power (map 4). The return flow on the Malheur River credited to VOID is the difference in flow between the flow at Namorf (just downstream of the diversion point to the Vale Main Canal) and at Vines (just upstream of WIDs uppermost diversion points from the Malheur River). The total flow measured at the Bully Creek and Willow Creek gauges is credited to VOID as return flow. Graphs showing the measured flow at these locations are included in Appendix A.

The CWRE and District Manager measured flow at inflow points where the canals intercept channelized field runoff and where canals from the surrounding districts spill into the WID canals. The measured inflow does not include all return entering WID. The permit grants WID all return flow intercepted by its canals from the other districts. Flow measurements and capacity calculations at these measuring points are in Appendix A and the measurement point locations are shown on the Final Proof Maps.

This claim includes a variety of measurement methods due to the complexity of the project. The NRCS office in Ontario provided WID with 1-meter resolution lidar data for the entire district. The CWRE used the 3D Analyst extension in ArcGIS to generate 0.5-foot-interval contour lines. These data were used to determine variables in the Manning flow equation used to calculate flow capacity: slope, bottom width, and

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top width. The actual water depth in the canals is difficult to measure because the canals are steep sided, have high flow, and widely varying flow levels. The BOR manual on design standards<sup>2</sup> for canals recommends bottom width to depth ratio of no more than 2:1 for canals with capacities of less than 10,000 CFS. Therefore, the capacity based on channel dimensions was calculated using water depths that were ½ the bottom width or less.

Many of the natural drainages and canals carrying return flow have weirs. The CWRE and district manager measured the height of live flow over the weir blade and measured the height of the highwater mark above the weir blades. The flow rates over these weirs were calculated using equations from the *Isco Open Channel Flow Measurement Handbook, Forth Edition*, 1995, by Grant and Dawson.

Many of the measuring points had head gates. Flow through these head gates was determined using tables provided by Waterman, a company that manufactures headgates. The flow is based on the dimensions of the headgate, the height of the opening, and the amount of head on the upstream side of the headgate.

There are historic gauge data available on the OWRD website for the Vines, JH, Farmers, GF and Nevada Canals. These data were used to verify the maximum capacity.

Reminder: The map associated with this claim must identify the location of the point(s) of diversion, Donation Land Claims (DLC), Government Lots (GLot), and Quarter-Quarters (QQ).

5. Variations:

Was the use developed differently from what was authorized by the permit, or permit amendment final order? If yes, describe below.

YES

(e.g. "The permit allowed three points of diversion. The water user only developed one of the points." or "The permit allowed 40.0 acres of irrigation. The water user only developed 10.0 acres.")

The geometry of the water rights was updated to match the District's 3111 mapping.

6. Claim Summary:

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<sup>&</sup>lt;sup>2</sup> Design Standards No. 3, Canals and Related Structures, United States Bureau of Reclamation, 1967, available online: https://www.usbr.gov/pn/snakeriver/landuse/authorized/designstandards3.pdf
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POD NAME OR #	MAXIMUM RATE AUTHORIZED	CALCULATED THEORETICAL RATE BASED ON SYSTEM	AMOUNT OF WATER MEASURED	Use	# OF ACRES ALLOWED	# OF ACRES DEVELOPED
1. Vines Ditch	300 CFS	11.8 CFS	11.8 CFS	Irrigation	18,258	18,258
2. JH	in to I Ab	120.8 CFS	121 CFS	Irrigation	anerb law a	onlike ground
Canal	1 100 10 16 16 1	r between a loss of	of the art of	woil evel to Id	gipti od the heig	om to divini
3. Farmers Canal	Leading qualities	47.8 CFS	32.44 CFS	Irrigation	de sweet had de care	over show the form
4. GF Canal	Lonio de la compansión de	191.6 CFS	123.1 CFS	Irrigation	ng gaziera an	brisilie gast 11 i
5. Bully Creek Ditch	albanik kesa olesak bira	34.4 CFS	19.44 CFS	Irrigation	t unutiment. W	e benevin lagb windi
6. Bully Creek Exchange / Willow		10.1 CFS	4.43 CFS	Irrigation	\$100 ± 100 ×	on media
Creek Pump Canal	craviti 10 - Jimio	the location of the Quarters (QO).	others of the steel	in the distribution of the contract (Cd) and	the map assured	mid book
7. Nevada Canal		241.8 CFS	102.8 CFS	Irrigation	31 Is Investigated	- 17 - 15 T/
8. Willow Creek Feeder		54.8 CFS	26.2 CFS	Irrigation		
Canal	o ide desa	15 a harded out	fiction of ter-b	an error at digita o	atematike este	es rais es suit l
9. Wood	1	26.7 CFS	36.61 CFS	Irrigation	-	
Drain / Blanton Drain	RECL	20.7 CFS	30.01 CF3	Ittigation	SALITY TE	emio &
Total		739.8 CFS	477.82		18,258	18,258



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# SECTION 4 – 1. Vines Ditch SYSTEM DESCRIPTION

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Are there multiple PODs?

YES

If "YES" you will need to copy and complete Sections 4B through 4E for each POD.

POD Name or Number this section describes (only needed if there is more than one):

1.	Vin	es	Dit	ch

#### A. Place of Use

1. Is the right for municipal use?

NO

If "YES" the table below may be deleted.

TWP	RNG	Mer	SEC	QQ	GLOT	DLC	Use	IF IRRIGATION, # PRIMARY ACRES	If Irrigation, # Supplemental Acres
See at	tached t	abulatio	n.						
Total .	 Acres I1	rigated							

Reminder: The map associated with this claim must identify Donation Land Claims (DLC), Government Lots (GLot), Quarter Quarters (QQ), and if for irrigation, the number of acres irrigated within each projected DLC, GLot, and QQ.

# **B. Diversion and Delivery System Information**

Provide the following information concerning the diversion and delivery system. Information provided must describe the equipment used to transport <u>and</u> apply the water from the point of diversion to the place of use.

1. Is a pump used?

YES

If "NO" items 2 through item 6 may be deleted.

2. Pump Information

No	MANUFACTURER	Model	SERIAL	Type (centrifugal,	INTAKE	DISCHAR
			Number	TURBINE OR	SIZE	GE SIZE
				SUBMERSIBLE)		
1	Berkeley	<b>B6ZRHS</b>	G220101	Centrifugal	8 inch	6 inch
2	Berkeley	<b>B6ZRHS</b>	G110800	Centrifugal	8 inch	6 inch
3	Berkeley	<b>B6ZRHS</b>	G220101	Centrifugal	8 inch	6 inch
4	Berkeley	<b>B6ZRHS</b>	G230201	Centrifugal	8 inch	6 inch
5	Berkeley	<b>B6ZRHS</b>	G280201	Centrifugal	6 inch	6 inch

# 1. Vines Ditch

3. Motor Information

No.	MANUFACTURER	Horsepower
1	Marathon	10
3	Teco	7.5
3	Teco	10
4	Baldor	7.5
5	Marathon	10



4. Theoretical Pump Capacity

No	Horsepower	OPERATING	LIFT FROM SOURCE	LIFT FROM PUMP	TOTAL PUMP
		PSI	то Римр	TO PLACE OF USE	OUTPUT
					(IN CFS)
1	10	7	3.6 feet	3.94 feet	2.6
3	7.5	7	3.6 feet	3.94 feet	2.0
3	10	7	3.6 feet	3.94 feet	2.6
4	7.5	7	3.6 feet	3.94 feet	2.0
5	10	7	3.6 feet	3.94 feet	2.6
Total					11.8 CFS

5. Provide pump calculations:

The WID uses five pumps to pump water from the Malheur River into the Vines Ditch (MP1 on final proof map). The lift from source to pump is the difference in elevation between the water level in the river and the center of the pump. The lift from the pump to place of use is from the pump up to the bottom of the discharge pipe. The pumps are housed below ground level in a cement structure.

## For three 10-HP pumps

Pressure head = 2.54 feet head/ PSI x 7 = 17.78 feet

Total head = Suction lift + pressure head + discharge lift

Total head = 3.6 feet + 17.78 + 3.94 feet = 25.32 feet

Q pump = (horsepower)(pump efficiency)
(total head in feet)

 $Q_{pump} = \frac{(10 \text{ HP})(6.61 \text{ ft}^4/\text{sec/HP})}{(25.32 \text{ feet})} = 2.6 \text{ cfs}$ 

For three pumps = 7.8 cfs

## For two 7-HP pumps

Pressure head = 2.54 feet head/ PSI x 7 = 17.78 feet

Total head = Suction lift + pressure head + discharge lift

Total head = 3.6 feet + 17.78 + 3.94 feet = 25.32 feet

Q pump = (horsepower)(pump efficiency) (total head in feet)

 $Q_{pump} = \frac{(7 \text{ HP})(6.61 \text{ ft}^4/\text{sec/HP})}{(25.32 \text{ feet})} = 2.0 \text{ cfs}$ 

For two pumps = 4.0 cfs

Total pump capacity = 7.8 cfs + 4.0 cfs = 11.8 cfs

6. Measured Pump Capacity (using meter if meter was present and system was operating)

INITIAL METER READING	ENDING METER READING	DURATION OF TIME OBSERVED	TOTAL PUMP OUTPUT (IN CFS)
n/a	READING	OBSERVED	(IN CFS)

Reminder: For pump calculations use the reference information at the end of this document.

7. Is the distribution system piped?

NO

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12. Additional notes or comments related to the system:

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Water is pumped from the Malheur River into the Vines Canal. The Vines Ditch is 2.6 miles long. At the end of the Vines Ditch water spills into the JH Canal. There is historic gauge data for the Vines Canal (number 13221000) available on the Department's website.



Photo shows pumping station intake on the Malheur River.

# C. Storage

1. Does the distribution system include in-system storage (e.g. storage tank, bulge in system / reservoir)

NO

# D. Gravity Flow Pipe

(THE DEPARTMENT TYPICALLY USES THE HAZEN-WILLIAM'S FORMULA FOR A GRAVITY FLOW PIPE SYSTEM)

1. Does the system involve a gravity flow pipe?

NO

# E. Gravity Flow Canal or Ditch

(THE DEPARTMENT TYPICALLY USES MANNING'S FORMULA FOR CANALS AND DITCHES)

1. Is a gravity flow canal or ditch used to convey the water as part of the distribution system? YES If "NO", items 2 through 4 relating to this section may be deleted.

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#### 1. Vines Ditch

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2. Complete the	table:	L. Canall					Can	
CANAL OR DITCH TYPE (MATERIAL)	TOP WIDTH OF CANAL OR DITCH	BOTTOM WIDTH OF CANAL OR DITCH	DEPTH	"N" FACTOR	AMOUNT OF FALL	LENGTH OF CANAL/ DITCH	SLOPE	COMPUTED RATE (IN CFS)
Earth; straight and uniform	15.5	7.7	2	0.025	0.4	2242	0.0006	24 cfs

#### 3. Provide calculations:

	Ditch Ca	apacity C	alcualtor			2011	stand nemberale action men beats
	using l	Manning's F	ormula				
	Data Entry	y (fill in un	derlined bla	anks)			
Top Width =	15.5	feet					- tobalista bahasa
Bottom Width =		feet					
Depth =	2	feet					This was the control of the control
Fall =	0.43	feet	per	2242	feet of dist	ance	
Grade =	0.000192	, or	0.0%				OO has to I
n Factor =	0.025						
					Tagraci.		
	Results ca	lculated	marrial la	With and	3, 4,1,1		— 2 หลักสามารัฐการทางงานกำหน้า ระบางกา
Area of cros	e-section =	23.2	square feet	e best			
	Perimeter =	16.46584					lace of osc.
	ic Radius =		1001				
	Velocity =		feet per seco	ond		1312013	estimater: For jump calculations to
Calculated Ditch	Capacity =	24.0	cubic feet p	er secor	nd		Locus maters notindatable use at a

4. If an actual measurement was taken, provide the following:

DATE OF	WHO MADE THE	MEASUREMENT	MEASURED QUANTITY OF
MEASUREMENT	MEASUREMENT	Метнор	WATER (IN CFS)
5/28/1938	OWRD historical gauge data (number 13221000)	OWRD gauge	19 cfs

Attach measurement notes.

was 19 CFS.

#### 2. J.H. Canal

# SECTION 4 – 2. J.H. Canal SYSTEM DESCRIPTION



Are there multiple PODs?

YES

If "YES" you will need to copy and complete Sections 4B through 4E for each POD.

POD Name or Number this section describes (only needed if there is more than one):

A TIT C	,	-	
2. J.H. Cana	al		

#### A. Place of Use

1. Is the right for municipal use?

NO

If "YES" the table below may be deleted.

TWP	RNG	Mer	SEC	QQ	GLOT	DLC	Use	IF IRRIGATION, # PRIMARY ACRES	IF IRRIGATION, # SUPPLEMENTAL ACRES
See at	See attached tabulation								
Total	Acres I1	rigated	, ,		L				

Reminder: The map associated with this claim must identify Donation Land Claims (DLC), Government Lots (GLot), Quarter Quarters (QQ), and if for irrigation, the number of acres irrigated within each projected DLC, GLot, and QQ.

# **B. Diversion and Delivery System Information**

Provide the following information concerning the diversion and delivery system. Information provided must describe the equipment used to transport <u>and</u> apply the water from the point of diversion to the place of use.

1. Is a pump used?

NO

Reminder: For pump calculations use the reference information at the end of this document.

7. Is the distribution system piped?

NO

12. Additional notes or comments related to the system:

Water is diverted from the Malheur River into the J.H. Canal on the south side of the river. The JH Canal is 16.1 miles long. The Trenkle and Purvis laterals divert off the JH Canal.

## C. Storage

1. Does the distribution system include in-system storage (e.g. storage tank, bulge in system / reservoir)

NO

#### 2. J.H. Canal

JAN 0 9 2019

D. Gravity Flow Pipe

(THE DEPARTMENT TYPICALLY USES THE HAZEN-WILLIAM'S FORMULA FOR A GRAVITY FLOW PIPE SYSTEM)

OWRD

1. Does the system involve a gravity flow pipe?

NO

## E. Gravity Flow Canal or Ditch

(THE DEPARTMENT TYPICALLY USES MANNING'S FORMULA FOR CANALS AND DITCHES)

1. Is a gravity flow canal or ditch used to convey the water as part of the distribution system? YES If "NO", items 2 through 4 relating to this section may be deleted.

2. Complete the table:

CANAL OR	Тор	Воттом	DEPTH	"N"	AMOUNT	LENGTH	SLOPE	COMPUTED
DITCH TYPE	WIDTH OF	WIDTH OF		FACTOR	OF FALL	OF		RATE
(MATERIAL)	CANAL OR	CANAL OR				CANAL/		(IN CFS)
	DITCH	DITCH				DITCH		
Earth; straight and uniform	20.7	8.4 ft	3.5 ft	0.025	0.5 ft	930 ft	0.000538	120.8 CFS

#### 3. Provide calculations:

Canal dimensions were determined from the Lidar data set. The maximum recorded measurement at the gauge (#13223000) was 121 CFS on 8/29/1986.

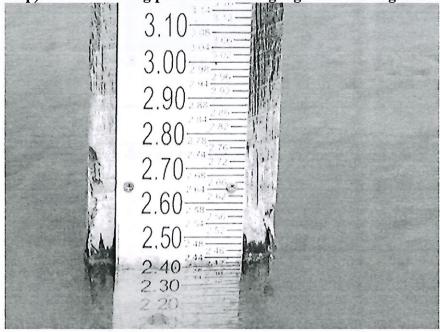
	Ditch Ca	apacity C	alcualtor		
	using	Manning's F	ormula		
	Data Entr	y (fill in un	derlined bla	nks)	
Top Width =	20.7	feet			
Bottom Width =		feet			
Depth =	3.5	feet			
Fall =	0.5	feet	per	930	feet of distance
Grade =	0.000538	, or	0.1%		
n Factor =	0.025	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
	Results ca	alculated			
Area of cros	s-section =	50.925	square feet		
Wetted	Perimeter =	22.55238	feet		
Hydraul	ic Radius =	2.258076			
	Velocity =	2.372	feet per seco	ond	101
			• • •		
alculated Ditch	Capacity =	120.8	cubic feet p	er secoi	nd

4. If an actual measurement was taken, provide the following:

DATE OF	WHO MADE THE	MEASUREMENT	MEASURED QUANTITY OF
Measurement	MEASUREMENT	Метнор	WATER (IN CFS)
6/29/1986	OWRD data for gauge #13223000 (maximum recorded at gauge)	Gauging station	121 CFS
5/5/2016	Randy Kinney and Nancy Rorick	Gauge measurement and rating table	88.9 CFS
5/31/2018	JR Hicks	Gauge measurement and rating table	72.1 CFS

The District measures flow in the canal at 0.6 miles downstream of the POD (MP 2 on final proof

map). The measuring point has a staff gauge and a rating table from the OWRD.



Staff gauge on 5/5/2016 at MP2.



J. 200						2. 3	.11. Ca	nui				RECEIVE
03/1 OREC	7/97 ON WAT	10:45 ER RES	OURCES	DEPART	TMENT							JAN 0 9 2019
#132	23000	J-H	Canal	nr Hope	e, OR							
Rati	ng Tab	1h 10	from 1	0/01/96	5 00 100			s	cale O	Eset -	0.00	OWRD
	loped	at the	end o	f the l	1998 Wat cillnear	ly from	1 1.00		.10 fe	er,		
				DISCH	ARGE IN	CUBIC E	EET PE	R SECO	DND			
gne	.00	.01	.02	03	(10.)	.05	06	.07	.03	.03	AKE	
1.0	0.	,190	.300	.570	101	,950	1.34	1.33	1,52	3.71		
1.1	1,90*	2.06	2.23	2,41	2.61	2.81	3.04	3,26	3,53	1.81	2 20	
1.2	4.10*	4.33	4.55	4.64	5.10	5.39	5.60	5.99	6.31	6.65	2.50	
1.3	7,004	, 7.35	7.71	8.09	8,48	8.89	2.32	9.76	10.2	10.7	4.20	
1.4	11.2*	11.7	12.1	12.6	13,4	14.0	14.7	15.3	16.0	16.7	6,22	
1.5	17.4*	19.1	18.5	19.5	20.2	20.9	21.7	22.5	23.3	24.1	7,58	
1.6	25.0*	25.7	26.4	27.1	27.9	28.6	29,4	30,2	31.0	31.8	7.59	
1.7	32.6*	11.1	34.0	34.8	35.5	36.3	17.0	37.6	34.6	35.4	7,60	
1.8	40.2*	49.9	41.6	42.4	43.1	43.9	21.7	45.4	46.2	47.0	7.60	
1.9	47.8*	48.5	49.3	50.0	50.0	51.5	( 52,3	53.0	53.6	54.6	7.60	
2.0	55.4*	56.1	56.9	37.8	58.4	59.1	59.9	60.7	61.4	62.2	7.60	
2.1	63.0*	63.7	64.5	65,2	66.0	66.7	67.5	68.3	69.0	69.6	2.45	
2.2	70.54	71.3	72.1	7k.0	73.6	74.3	75.1	75.9	76.6	77.4	7.64	
2.3	78.21	78.9	19.7	80.4	61.2	92.0	82,7	83.5	84.2	85.0	7.11	
2.4	85.81	86.6	87.4	69.1	(11.1)	89.7	90.5*	9218	95.2	97.8	14.3	
	100.0*	102.0	103.9	106.4	.101.9	. 110.1	112.2	114.4	116.5	114.3	2.4	
			F-200 000 000 000 000 000 000 000 000 000	Committee of the Commit	129.1	131.2	133,3	135.4	137.6	139.8	21.1	

Rating table developed for the J-H canal by OWRD. The water-level was measured at 2.44 feet on the gauge. Based on the measurement, the table shows the flow rate at 88.9 CFS on May 5, 2016.

#### 3. Farmers Canal

# SECTION 4 – 3. Farmers Canal SYSTEM DESCRIPTION

Are tl	nere	mul	tip	le ]	PODs?
--------	------	-----	-----	------	-------

YES

If "YES" you will need to copy and complete Sections 4B through 4E for each POD.

POD Name or Number this section describes (only needed if there is more than one):

#### A. Place of Use

1. Is the right for municipal use?

NO

If "YES" the table below may be deleted.

TWP	RNG	Mer	SEC	QQ	GLOT	DLC	Use	IF IRRIGATION, # PRIMARY ACRES	IF IRRIGATION, # SUPPLEMENTAL ACRES
See att	ached t	abulatio	n						
Total A	Acres In	rigated							

Reminder: The map associated with this claim must identify Donation Land Claims (DLC), Government Lots (GLot), Quarter Quarters (QQ), and if for irrigation, the number of acres irrigated within each projected DLC, GLot, and QQ.

# **B. Diversion and Delivery System Information**

Provide the following information concerning the diversion and delivery system. Information provided must describe the equipment used to transport <u>and</u> apply the water from the point of diversion to the place of use.

1. Is a pump used?

NO

7. Is the distribution system piped?

NO

JAN 0 9,2019

#### 12. Additional notes or comments related to the system:

Water is diverted out of the Malheur River into the Farmers Canal through a 48-inch canal gate (MP3 on final proof map). Return from VOID also drains into the Farmers Canal. The VOID measures inflow into the Farmers Canal at Kings Drain and Eagle Pitcher (flow calculations in Appendix A). The Farmers Canal is 2.12 miles long. The Farmers Canal discharges into Bully Creek. One lateral comes off the Farmers Canal and discharges into the Bully Creek Ditch.



JAN 0 9 2019

Photo of the Farmers Canal head gate.

# C. Storage

1. Does the distribution system include in-system storage (e.g. storage tank, bulge in system / reservoir)

NO

# D. Gravity Flow Pipe

(THE DEPARTMENT TYPICALLY USES THE HAZEN-WILLIAM'S FORMULA FOR A GRAVITY FLOW PIPE SYSTEM)

1. Does the system involve a gravity flow pipe?

NO

If "NO", items 2 through 4 relating to this section may be deleted.

Attach measurement notes.

# E. Gravity Flow Canal or Ditch

(THE DEPARTMENT TYPICALLY USES MANNING'S FORMULA FOR CANALS AND DITCHES)

1. Is a gravity flow canal or ditch used to convey the water as part of the distribution system? YES

If "NO", items 2 through 4 relating to this section may be deleted.

#### 3. Farmers Canal

2. Complete the table:

Canal or Ditch Type (material)	TOP WIDTH OF CANAL OR DITCH	BOTTOM WIDTH OF CANAL OR DITCH	DEPTH	"N" FACTOR	AMOUNT OF FALL	LENGTH OF CANAL/ DITCH	SLOPE	COMPUTED RATE (IN CFS)
Earth; straight and uniform	19.1 ft	6 ft	3 ft	0.025 ft	0.19 ft	942 ft	0.000202	47.8 cfs

3. Provide calculations:

		Ditch Ca	apacity C	alcualtor	•		
	27 -	using I	Manning's F	ormula			
		Data Entry	/ (fill in und	derlined bla	nks)		
Tı	op Width =	19.1	feet				
Botto	m Width =	6	feet				
	Depth =	3	feet				
	Fall =	0.19	feet	рег	942	feet of distance	
	Grade =	0.000202	, or	0.0%			
	n Factor =	0.025				La Tag Danil Ia	
		Results ca	lculated				
					·		
Α	rea of cros	s-section =	37.65	square feet			
	Wetted F	Perimeter =	20.40868	feet			
	Hydrauli	ic Radius =	1.844803				
		Velocity =	1.270	feet per sec	ond		

The maximum historical reading for the gauge on the Farmers Canal was 50 CFS on 6/26/1941.

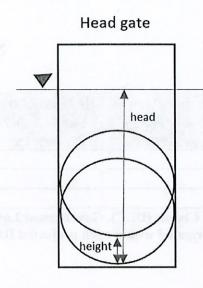




#### 3. Farmers Canal

4. If an actual measurement was taken, provide the following:

Date of Measurement	WHO MADE THE MEASUREMENT	MEASUREMENT METHOD	Measured Quantity of Water (IN CFS)
8/10/2018	J.R. Hicks	Tables from Waterman Headgate company	32.44 CFS
6/26/1941	OWRD gauge data for station 13222000		50 CFS



Water level on upstream side

JAN 0 9 2019

OWRD

For a 48-inch-diameter head gate, for head =45 inches and height = 9 inches

		-		, =	***				· · · ·		
Diameter	48	in		See Jan	180 110		<del>- H-ga</del>				
Perimeter	150-13/16			1 6/12 77	TOTAL TOTAL		RELIGITION OF				
Area (in²)	1,809-9/16	in²									
Area (ft²)						1					
Coefficient											
of Discharge	0.7										
					41	42	43	44	45	46	
Height (in)	q	Area of Overlap (in²)	Opening Area (in²)	Opening Area (ft²)	(3.417)	(3.500)	(3.583)	(3.667)	(3.750)	(3.833)	(3
0	3.1416		0	0.00	0.000	0.000	0.000	0.000	0.000	0.000	
1	3.0999	1,761-9/16	48	0.33	3.461	3.503	3.545	3.586	3.626	3.666	
2	3.0582	1,713-19/32	95-31/32	0.67	6.920	7.004	7.087	7.169	7.250	7.330	
3	3.0165	1,665-21/32	143-29/32	1.00	10.377	10.502	10.627	10.750	10.871	10.991	
4	2.9747	1,617-25/32	191-25/32	1.33	13.829	13.996	14.162	14.326	14.488	14.648	
5	2.9329	1,570	239-9/16	1.66	17.274	17.484	17.691	17.895	18.097	18.297	
6	2.8909	1,522-5/16	287-1/4	1.99	20.713	20.964	21.212	21.457	21.700	21.940	
7	2.8489	1,474-25/32	334-25/32	2.32	24.140	24.433	24.722	25.008	25.290	25.570	
8	2.8067	1,427-11/32	382-7/32	2.65	27.561	27.895	28.225	28.551	28.874	29.193	
9	2.7644	1,380-1/8	429-7/16	2.98	30.966	31.341	31.712	32.079	32.441	32.799	
10	2.7219	1,333-1/16	476-1/2	3.31	34.359	34.776	35.187	35.594	35.996	36.394	
11	2.6791	1,286-7/32	523-11/32	3.63	37.737	38.194	38.646	39.093	39.535	39.972	
12	2.6362	1,239-5/8	569-15/16	3.96	41.097	41.595	42.087	42.574	43.055	43.531	
13	2.5931	1,193-9/32	616-9/32	4.28	44.438	44.977	45.509	46.036	46.556	47.070	
	^										

# SECTION 4 – 4. GF Canal SYSTEM DESCRIPTION

Are there multiple PODs?

YES

If "YES" you will need to copy and complete Sections 4B through 4E for each POD.

POD Name or Number this section describes (only needed if there is more than one):

OF O	figure 7	
G.F. Canal		

#### A. Place of Use

1. Is the right for municipal use?

NO

If "YES" the table below may be deleted.

TWP	Rng	Mer	SEC	QQ	GLOT	DLC	Use	IF IRRIGATION, # PRIMARY ACRES	IF IRRIGATION, # SUPPLEMENTAL ACRES
See at	See attached tabulation								
Total	Acres II	rigated		· · · · · · · · · · · · · · · · · · ·	1,				

Reminder: The map associated with this claim must identify Donation Land Claims (DLC), Government Lots (GLot), Quarter Quarters (QQ), and if for irrigation, the number of acres irrigated within each projected DLC, GLot, and QQ.

# **B. Diversion and Delivery System Information**

Provide the following information concerning the diversion and delivery system. Information provided must describe the equipment used to transport <u>and</u> apply the water from the point of diversion to the place of use.

1. Is a pump used?

NO

7. Is the distribution system piped?

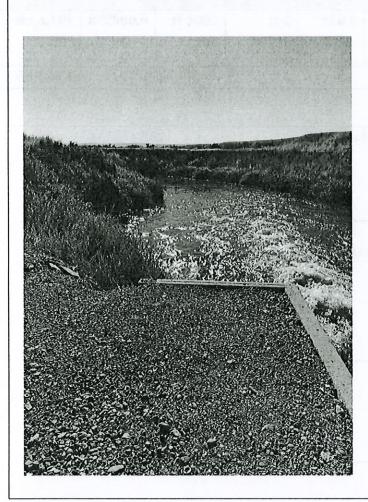
NO

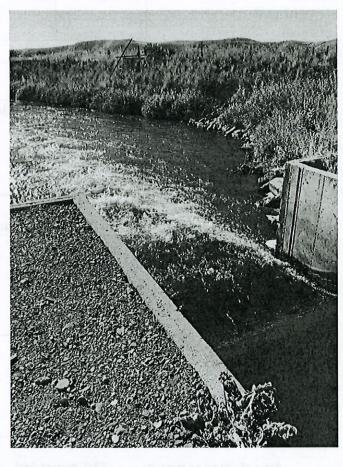


12. Additional notes or comments related to the system:

OWRD

Water is diverted out of the Malheur River into the GF Canal. The GF canal is 23.1 miles long. The Willow Creek Feeder canal discharges into the GF Canal. Historic gage data (number 13224000) are available for the GF Canal on the Department's website. The photos below show flow in the GF canal and over the weir (MP4 on final proof map).





# C. Storage

1. Does the distribution system include in-system storage (e.g. storage tank, bulge in system / reservoir)

NO

# D. Gravity Flow Pipe

(THE DEPARTMENT TYPICALLY USES THE HAZEN-WILLIAM'S FORMULA FOR A GRAVITY FLOW PIPE SYSTEM)

1. Does the system involve a gravity flow pipe?

NO

# E. Gravity Flow Canal or Ditch

(THE DEPARTMENT TYPICALLY USES MANNING'S FORMULA FOR CANALS AND DITCHES)

1. Is a gravity flow canal or ditch used to convey the water as part of the distribution system?

YES

2. Complete the table:

CANAL OR	Тор	Воттом	DEPTH	"N"	AMOUNT	LENGTH	SLOPE	COMPUTED	
DITCH TYPE	WIDTH OF	WIDTH OF		FACTOR	OF FALL	OF		RATE	
(MATERIAL)	CANAL OR	CANAL OR				CANAL/		(IN CFS)	
	DITCH	Diтсн		Carrie 13		DITCH			
Earth; straight and uniform	43 ft	29.6 ft	2 ft	0.025	2 ft	2004 ft	0.000998	191.6 cfs	
High water mark of 2.3 on gauge									

3. Provide calculations:

e channel dimen	isions wer	e determi	ned from	lidar dat	a.	RECEIVED		
	Ditch Ca	apacity C	alcualto	•		JAN 0 9 2019		
		Manning's F				- COMPE		
	J					OWRD		
	Data Entry	/ (fill in un	derlined b	lanks)				
Top Width =	43	feet						
Bottom Width =		feet						
Depth =	2	feet						
Fall =	2	feet	per	2004	feet of distance			
Grade =	0.000998	, or	0.1%					
n Factor =	0.025							
	Results ca	lculated						
Area of cross	e-section =	72.6	square fee					
1	Perimeter =		· ·					
	c Radius =							
,	Velocity =		feet per se	cond				
Calculated Ditch (	Capacity =	191.6	cubic feet	per secoi	nd			
					ř			

4. If an actual measurement was taken, provide the following:

DATE OF	WHO MADE THE	MEASUREMENT	MEASURED QUANTITY OF
MEASUREMENT	MEASUREMENT	Метнор	WATER (IN CFS)
7/15/1984	OWRD gauge data for number 13224000.		171 cfs
7/9/2018	Terry Littlejohn	Gauge on ramp flume	123.1 cfs
9/20/2018	Nancy Rorick and Randy Kinney	Politica	51.6 cfs

Rating table below is for the ramp flume developed by the OWRD. Gauge height measured by Terry Little John on 7/9/2018 at 2.18 feet.

03/27/97 09:24

OREGON WATER RESOURCES DEPARTMENT

#13224000

GELLERMAN-FROMAN CANAL NR HOPE, OR

OWRD

JAN 09 2019

1996 WY

Rating Table 13 from 10/01/96 00:00

Scale Offset = 0.00

developed at the end of the 1996 water year

Note: Table is expanded rectilinearly from 0.00 to 0.50 feet

ght	.00						FEET PE					
******	.00	.01	.02	.03	.04	.05	.06	. 07	.08	.09	1st diff	2nd diff
0.0	0.	,222	.444		***********			•••••			2.22	********
0.1	2,22	2.44	2.66	.666 2.89	.888	1.11	1,33	1.55	4.00	4.22	2.22	0
0.2	4.44	4.66	4.88	5.11	5,33	3.33	3,55	3.77	6.22		2.22	-0
0.3	6.66	6.68	7.10	7.33	7.55	5.55 7.77	5.77	5.99	8.44	8.44	2.22	0
0.4	8.88	9.10	9.32	9.55	9.77	9.99	7.99	8.21	10.7	10.9	2.22	0
0.5	11.1.	11.5	11.8	12.2			19.2	10.4			3.65	1.63
0.6	15.0	15.4	15.8		12.6	13.0	13.4	13.8	14.1	14,5		
0.7	19.2	19.7	20.1	16.2	16.6	17.0	17.5	17.9	16.3	18.8	4.20	.409
0.8	23.9	24.4			21,1	21.5	22.0	22.5	23.0	23.4	4,69	
0.9	29.0	29.5	24.9	25,4	25,9	26.4	26.9	27.4	28.0	28.5	5.00	.389
	0	29,5	30.1	30.6	31.1	31.7	32.2	32.6	33.3	33.9	5,45	. 372
1.0	34.5	35.0	35.6	36.2	36.7	37.3	37.9	38.5	39.1	39.7	5.81	. 356
1.1	40.3	40.9	41.5	42,1	42.7	43.3	43.9	44.5	45.2	45.8	6.15	.345
1.2	46.4	47.1	47.7	48.3	49.0	49.6	50.3	50.9	51.6	52.3	6.49	.334
1.3	52.9	53.6	54.3	54.9	55.6	56.3	57.0	57.7	58.3	59.0	6.81	. 325
1.4	59.7	60.4	61.1	61.8	62.5	63.3	64.0	64.7	65.4	66.1	7.13	.316
1.5	66.9	67.6	60.3	69.1	69.8	70.5	71.3	72.0	72.8	73.5	7.44	.300
1.6	74.3	75.1	75.8	76.6	77.4	78.1	78.9	79:7	80.5	41.3	7.74	.301
1.7	82.0	62.8	83.6	84,4	85.2	86.0	86.8	87.6	88.4	89.3	8.03	.294
1.8	90.1	90.9	91.7	92.5	93.4	94.2	95.0	95.9	96.7	97.6	8.32	.288
1.9	98.4	99.2	100.1	100.9	101.8	102.7	103.5	104.4	105.3	106.1	9,60	.283
2.0	107.0=	107.9	109.7	109.6	110.5	111.4	112.3	113.2	114.1	114.9	8.94	.338
2.1	115.8	116.7	117.6	118.5	119.5	120.4	121.3	122.2	123.1	124.0	9.11	.268
2.2	125.0	125.9	126.6	127.7	128.7	129.6	130.5	131.5	132.4	133.4	9.37	.264
2.3	134.3	135.3	136.2	137.2	138.2	139.1	140.1	141.0	142.0	143.0	9.63	.259
2.4	144.0	144.9	145.9	146.9	147.9	148.9	149.9	150.9	151.9	152.9	2.89	,255
2.5	153.9	154.9	155.9	156.9	157.9	158.9	159.5	160.9	161.9	163.0	10.1	.251
2.6	164.0	165.0	166.1	167.1	168.1	169.2	170.2	171.2	172.3	173.3	10.4	,249
2.7	174.4	175.4	176.5	177.5	178.6	179.7	180.7	181.8	182.9	183.9	10.6	.244
2.8	185.0	186.1	167.2	188.3	109.3	190.4	191.5	192.6	193.7	194.8	10.9	.241
2.9	195.9	197.0	198.1	199.2	200.3	201.4	202.5	203.6	204.8	205.9	11.1	,238

207.0\*

#### 5. Bully Creek Ditch

JAN 0 9 2019

# OWRD

# SECTION 4 – 5. Bully Creek Ditch SYSTEM DESCRIPTION

Are there multiple PODs?

YES

If "YES" you will need to copy and complete Sections 4B through 4E for each POD.

POD Name or Number this section describes (only needed if there is more than one):

5.	Bul	ly Cre	eek T	Ditch	
----	-----	--------	-------	-------	--

#### A. Place of Use

1. Is the right for municipal use?

NO

If "YES" the table below may be deleted.

TWP	RNG	MER	SEC	QQ	GLOT	DLC	Use	IF IRRIGATION, # PRIMARY ACRES	IF IRRIGATION, # SUPPLEMENTAL ACRES
See at	tached t	abulatio	n						
Total.	 Acres I1	rigated			1			or let make of	5 (del 1 = 3.56

Reminder: The map associated with this claim must identify Donation Land Claims (DLC), Government Lots (GLot), Quarter Quarters (QQ), and if for irrigation, the number of acres irrigated within each projected DLC, GLot, and QQ.

# **B. Diversion and Delivery System Information**

Provide the following information concerning the diversion and delivery system. Information provided must describe the equipment used to transport and apply the water from the point of diversion to the place of use.

1. Is a pump used?

NO

7. Is the distribution system piped?

NO

12. Additional notes or comments related to the system:

Water is diverted from Bully Creek into the Bully Creek Ditch through a 30-inch diameter head gate.

## C. Storage

1. Does the distribution system include in-system storage (e.g. storage tank, bulge in system / reservoir)

NO

## D. Gravity Flow Pipe

(THE DEPARTMENT TYPICALLY USES THE HAZEN-WILLIAM'S FORMULA FOR A GRAVITY FLOW PIPE SYSTEM)

1. Does the system involve a gravity flow pipe?

NO

Attach measurement notes.

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# E. Gravity Flow Canal or Ditch

(THE DEPARTMENT TYPICALLY USES MANNING'S FORMULA FOR CANALS AND DITCHES)

OWRD

1. Is a gravity flow canal or ditch used to convey the water as part of the distribution system? YES If "NO", items 2 through 4 relating to this section may be deleted.

**2.** Complete the table:

CANAL OR DITCH TYPE (MATERIAL)	TOP WIDTH OF CANAL OR DITCH	BOTTOM WIDTH OF CANAL OR DITCH	<b>DEPTH</b>	"N" FACTOR	AMOUNT OF FALL	LENGTH OF CANAL/ DITCH	SLOPE	COMPUTED RATE (IN CFS)
Earth; straight and uniform	12.6	6.7	1.5	0.025	1.3	911	0.0014	34.4 cfs

#### 3. Provide calculations:

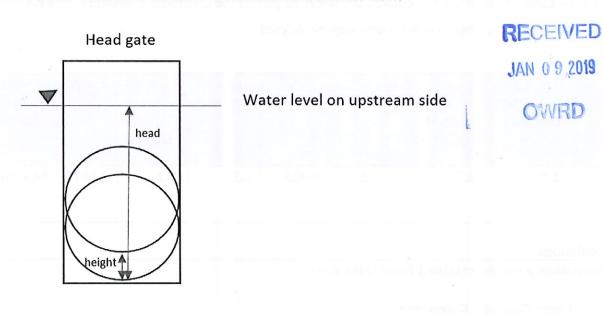
	Ditch Ca	apacity C	alcualtor	•				
	using	Manning's F	ormula					
	Data Entry	/ (fill in un	derlined bl	anks)	1			
Top Width =	12.6	feet						
Bottom Width =		feet	a so a b					
Depth =	1.5	feet		77				
Fall =		feet	per	911	feet of dista	ance		
Grade =	0.001427	, or	0.1%	1008	100000			
n Factor =	0.025							
						1 111		
	Results ca	alculated	147	18.7		0 00		
Area of cross	s-section =	14.475	square feet					
Wetted F	Perimeter =	13.31891	feet					
Hydrauli	c Radius =	1.0868			Was a	3.12		
	Velocity =	2.374	feet per sec	cond				
Calculated Ditch (	Capacity =	34.4	cubic feet	Der seco	nd			

4. If an actual measurement was taken, provide the following:

DATE OF	WHO MADE THE	MEASUREMENT	MEASURED QUANTITY OF
MEASUREMENT	MEASUREMENT	Метнор	WATER (IN CFS)
5/31/2018	Randy Kinney & Nancy	Used Waterman's	19.44 cfs
	Rorick	tables for head gate	

## 5. Bully Creek Ditch

The head gate was used as the measuring point (MP 5 on final proof map). Measured opening of the head gate (height) at 8 inches and the height of the water above the bottom edge of the head gate (head in inches) at 53 inches. Used table from the Waterman's to calculate flow.



-		_												
Diameter	30								- Control					
Perimeter	94-1/4	in												
Area (in')	706-55/64	in'												
Area (ft³)	4.91	ft³												
Coefficient							I	Iead in	inches	2				
of Discharge	0.7													
				44	45	46	47	48	49	50	51	52	53	54
Height (in)	q	Area of Overlap (in³)	Opening Area (in²)	(3.667)	(3.750)	(3.833)	(3.917)	(4.000)	(4.083)	(4.167)	(4.250)	(4.333)	(4.417)	(4.500)
0	3.1416	706-7/8	-1/64	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.00
1	3.0749	676-7/8	29-63/64	2.240	2.265	2.290	2.315	2.339	2.364	2.388	2.411	2.435	2.458	2.48
2	3.0082	646-29/32	59-61/64	4.478	4.529	4.579	4.629	4.678	4.726	4.774	4.822	4.869	4.915	4.96
3	2.9413	617-1/32	89-53/64	6.710	6.786	6.861	6.935	7.008	7.081	7.153	7.224	7.295	7.364	7.43
4	2.8741	587-7/32	119-41/64	8.937	9.038	9.138	9.237	9.334	9.431	9.527	9.622	9.716	9.809	9.90
5	2.8067	557-9/16	149-19/64	11.152	11.278	11.403	11.526	11.648	11.769	11.888	12.007	12.124	12.240	12.35
6	2.7389	528-3/32	178-49/64	13.354	13.504	13.654	13.801	13.947	14.092	14.235	14.377	14.517	14.656	14.79
7	2.6706	498-25/32	208-5/64	15.543	15.719	15.893	16.064	16.234	16.403	16.569	16.734	16.897	17.059	17.21
8	2.6017	469-3/4	237-7/64	17.712	17.912	18.110	18.306	18.499	18.691	18.881	19.069	19.255	19.439	19.62
9	2.5322	440-31/32	265-57/64	19.862	20.086	20.308	20.528	20.745	20.960	21.173	21.383	21.592	21.799	22.00
10	2.4619	412-17/32	294-21/64	21.986	22.234	22.480	22.723	22.964	23.202	23.437	23.670	23.901	24.130	24.35
11	2.3907	384-7/16	322-27/64	24.085	24.357	24.626	24.892	25.156	25.416	25.674	25.930	26.183	26.433	26.68
12	2.3186	356-23/32	350-9/64	26,155	26,451	26,743	27.032	27.318	27.601	27.881	28,159	28.434	28.706	28.97

# SECTION 4 – 6. Bully Creek Exchange /Willow Creek Pump Canal SYSTEM DESCRIPTION

Are there multiple PODs?

YES

If "YES" you will need to copy and complete Sections 4B through 4E for each POD.

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POD Name or Number this section describes (only needed if there is more than one):

JAN 0 9 2019

6. Bully Creek Exchange / Willow Creek Pump Canal

OWRD

A. Place of Use

1. Is the right for municipal use?

YES NO

If "YES" the table below may be deleted.

TWP	RNG	Mer	SEC	QQ	GLOT	DLC	Use	IF IRRIGATION, # PRIMARY ACRES	IF IRRIGATION, # SUPPLEMENTAL ACRES
See at	tached t	abulatio	n						
Total .	Acres I1	rigated							

Reminder: The map associated with this claim must identify Donation Land Claims (DLC), Government Lots (GLot), Quarter Quarters (QQ), and if for irrigation, the number of acres irrigated within each projected DLC, GLot, and QQ.

# **B. Diversion and Delivery System Information**

Provide the following information concerning the diversion and delivery system. Information provided must describe the equipment used to transport <u>and</u> apply the water from the point of diversion to the place of use.

1. Is a pump used?

NO

7. Is the distribution system piped?

NO

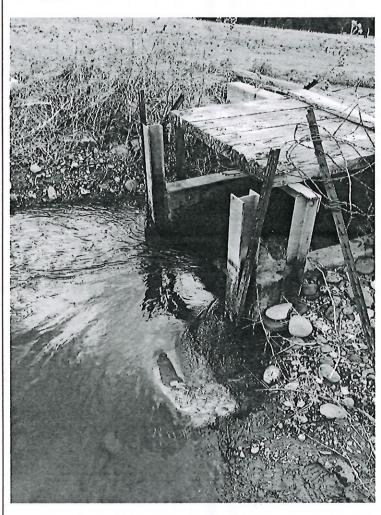
#### 12. Additional notes or comments related to the system:

Flow is measured on the Bully Creek Exchange / Willow Creek Pump Ditch at two locations.

<u>Measuring point 6-1</u> Water from VOID 197 canal discharges into the Bully Creek Exchange canal. Water in Lateral 197 originates in Bully Creek Reservoir which contains water from the Malheur River and Bully Creek.

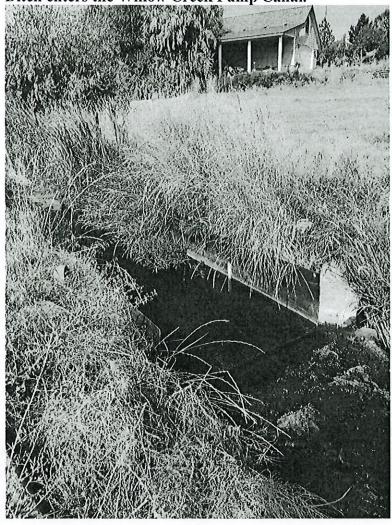
The measuring point is located 0.4 miles upstream of the Bully Creek Exchange Canal. Right below the measuring point water flows into a gravity-flow pipe, then into a natural drainage, and then into the Bully Creek Exchange Canal.

The photo below shows the weir where we measured flow.





<u>Measuring point 6-2</u> – Ramp flume at Yakima Street North. This is where the Bully Creek Exchange Ditch enters the Willow Creek Pump Canal.



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GWRD

# C. Storage

1. Does the distribution system include in-system storage (e.g. storage tank, bulge in system / reservoir)

NC

# D. Gravity Flow Pipe

(THE DEPARTMENT TYPICALLY USES THE HAZEN-WILLIAM'S FORMULA FOR A GRAVITY FLOW PIPE SYSTEM)

1. Does the system involve a gravity flow pipe?

YES

If "NO", items 2 through 4 relating to this section may be deleted.

2. Complete the table:

PIPE	PIPE	"C"	AMOUNT OF	LENGTH OF PIPE	SLOPE	COMPUTED RATE OF
SIZE	Түре	FACTOR	FALL			WATER FLOW (IN CFS)
30 inch	Plastic	145	64.6	550	0.1292	231.1 cfs

#### 3. Provide calculations:

			Pipe Ca	pacity Ca	alcualtor			
			for p	ipes flowing	full, using	the Hazen-	Williams Formula	
	03VI-		The state of the s					
			Data Entry					
	Billia Bil		and the same same same same same same same sam			the state of the s		
	Interior I	Diameter =	30	inches, or	2.5	feet		
lough	ness Coeffi	icient (C) =	145					
		Fall =	64.6	feet	per	500	feet of distance	
		Grade =	0.1292	, ог	12.9%			
			Results ca	lculated				
Auditoral Agents	Α	rea of cros	s-section =	4.908739	square fee	t		
		Wetted Perimete		7.853982	feet			
		Hydrauli	c Radius =	0.625				
			Velocity =	47.07275	feet per se	cond		
1		Pipe (	Capacity =	231.068	cubic fee	t per secoi	nd	

4. If an actual measurement was taken, provide the following:

DATE OF	Who Made the	MEASUREMENT	MEASURED QUANTITY OF
MEASUREMENT	Measurement	Метнор	WATER (IN CFS)
n/a			

Attach measurement notes.

# E. Gravity Flow Canal or Ditch

(THE DEPARTMENT TYPICALLY USES MANNING'S FORMULA FOR CANALS AND DITCHES)

1. Is a gravity flow canal or ditch used to convey the water as part of the distribution system? YES If "NO", items 2 through 4 relating to this section may be deleted.



2. Complete the table:

	CANAL OR	Тор	Воттом	DEPTH	"N"	AMOUNT	LENGTH	SLOPE	COMPUTED
	DITCH	WIDTH	WIDTH		FACTOR	OF FALL	OF		RATE
	Түре	OF	OF				CANAL		(IN CFS)
	(MATERIAL)	CANAL	CANAL				/ DITCH		
		OR	OR						
		DITCH	DITCH						
Magguring	Fauth	1206	( \$4	1 64	0.025	0.47.64	240 64	0.001351	16.5 cfs
Measuring point 6-1 at lateral 197	Earth; straight and uniform	12.9 ft	6 ft	1 ft	0.025	0.47 ft	348 ft	0.001351	10.5 CIS
Measuring point 6-2	Earth; straight	9.3 ft	5.8 ft	1 ft	0.025	0.72 ft	996 ft	0.000723	10.1 cfs
at ramp flume	and uniform				186	cannon et a		onio in emi	

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#### 3. Provide calculations:

	ueina	Manning's F	alcualtor							
	using	Maining 8 I	omula							
	Data Entr	y (fill in un	derlined bl	lanks)						
Top Width	= 12.9	feet				+				
Bottom Width	= 6	feet								
Depth	= 1	feet								
Fall		feet	per	348	feet of distance					
Grade	= 0.001351		0.1%							
n Factor	= 0.025									
FT										
	Results c	alculated								
Area of cro	ss-section =	9.45	square feet							
	Perimeter =									
	ulic Radius =									
	Velocity =		feet per sec	cond						
Calculated Dital		AC E				1				
Calculated Ditch			ust upsti			ne. Char	nel dim	ensions	based on lic	lar
apacity at measu ta.	aring poin	nt 6-2 – j	ust upsti	ream of		ne. Char	nel dim	ensions	based on lic	dar
apacity at measu ta.	iring poir	nt 6-2 – j	ust upsti	ream of		ne. Char	nnel dim	ensions	based on lic	dar
apacity at measu ta.	iring poir	nt 6-2 – j	ust upsti	ream of		ne. Char	mel dim	ensions	based on lic	dar
apacity at measu ta.	iring poir	nt 6-2 – j pacity C	ust upstr alcualtor	ream of		ne. Char	nel dim	ensions	based on lic	dar
apacity at measu	Ditch Capusing M	nt 6-2 – j pacity C lanning's F (fill in und	ust upstr alcualtor	ream of		ne. Char	mel dim	ensions	based on lic	dar
apacity at measu ta.	Ditch Capusing M Data Entry  9.3 f	nt 6-2 – j pacity C lanning's F (fill in und	ust upstr alcualtor	ream of		ne. Char	nel dim	ensions	based on lie	dar
Top Width =	Ditch Capusing M Data Entry  9.3 f	nt 6-2 – j pacity C anning's F (fill in und eet	ust upstr alcualtor	ream of		ne. Char	nel dim	ensions	based on lic	dar
Top Width =  Bottom Width =  Depth =	Ditch Capusing M Data Entry  9.3 from 5.8 from 1 from 1	nt 6-2 – j pacity C lanning's F (fill in unc) eet eet	ust upstr alcualtor ormula lerlined b	ream of	the rmap flum	ne. Char	inel dim	ensions	based on lic	dar
Top Width =  Bottom Width =  Depth =  Fall =	Ditch Capusing M Data Entry  9.3 f 5.8 f 1 f	pacity C lanning's F (fill in unce	ust upstraction ormula	ream of		ne. Char	nel dim	ensions	based on lie	dar
Top Width = Bottom Width = Depth = Fall = Grade =	Ditch Capusing M Data Entry  9.3 fr 5.8 fr 0.72 fr 0.000723 ,	pacity C lanning's F (fill in unce	ust upstr alcualtor ormula lerlined b	ream of	the rmap flum	ne. Char	nel dim	ensions	based on lie	dar
Top Width =  Bottom Width =  Depth =  Fall =	Ditch Capusing M Data Entry  9.3 f 5.8 f 1 f	pacity C lanning's F (fill in unce	ust upstraction ormula	ream of	the rmap flum	ne. Char	nel dim	ensions	based on lic	dar
Top Width = Bottom Width = Depth = Fall = Grade =	Ditch Capusing M Data Entry  9.3 fr 5.8 fr 0.72 fr 0.000723 ,	pacity C lanning's F (fill in unce	ust upstraction ormula	ream of	the rmap flum	ne. Char	nel dim	ensions	based on lic	dar

1.340 feet per second

10.1 cubic feet per second

Wetted Perimeter = 9.831129 feet Hydraulic Radius = 0.767969

Velocity =

Calculated Ditch Capacity =

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### 6. Bully Creek Exchange/Willow Creek Pump Ditch

4. If an actual measurement was taken, provide the following:

DATE OF	WHO MADE THE	MEASUREMENT	MEASURED QUANTITY OF
MEASUREMENT	MEASUREMENT	Метнор	WATER (IN CFS)
5/31/2018 – at measuring point 6-1 at the 197 lateral	Randy Kinney and Nancy Rorick	Measured water height over the weir with portable staff gauge.	8.69 cfs
9/19/2018 – at measuring point 6-1 at the 197 lateral	Randy Kinney and Nancy Rorick	Measured water height over the weir with portable staff gauge.	3.21 cfs
9/18/2018 at measuring point 6-2	Randy Kinney and Nancy Rorick	Measured gauge height on ramp flume	4.43

Live flow measured at the weir on 5/31/2018 at measuring point 6-1 (the 197 lateral)

 $Q=3.33(L-0.2H)H^{1.5}$ 

L = 3.5 ft

H = 0.85 ft

 $Q = 3.33 (3.5-(0.2 \times 0.85))0.85^{1.5}$ 

Q = 8.69 cfs

Live flow measured at the weir on 9/19/2018 at measuring point 6-1 (the 197 lateral)

H = 0.43 ft

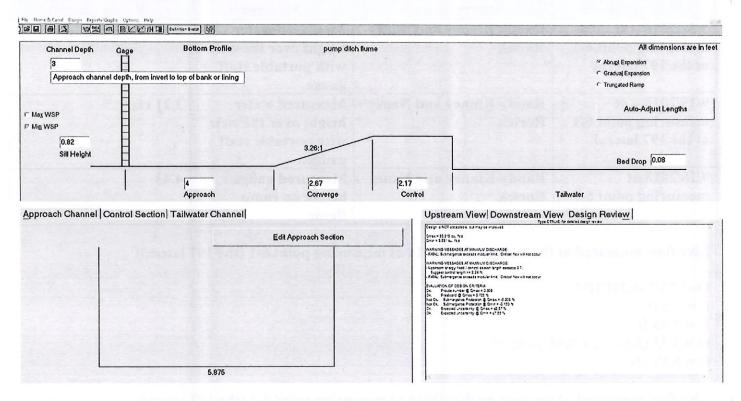
 $Q = 3.33 (3.5-(0.2 \times 0.43))0.43^{1.5}$ 

Q = 3.21 cfs



### 6. Bully Creek Exchange/Willow Creek Pump Ditch

The flow at measuring point 6-2 was calculated using the BOR program WinFlume 32 based on the dimensions in the diagram below.



On 9/19/2018 the water height measured at the gauge was 0.39 feet and the high-water mark was 0.54 feet. Based on the rating table generated by WinFlume, the live flow was 4.43 cfs and the flow at the high-water mark was 7.35 cfs.



## 6. Bully Creek Exchange/Willow Creek Pump Ditch

pump dito	h flume					
		e. Printed	: 10/5/2018	3 2:53:05 PM	Л	
Head at		Froude	Required	H1/L	Submerge	THE HALL
Gage, h1	Discharge	Number	Head Loss		Ratio	Warnings
feet	cfs		ft			
0.1	0.53562	0.01822	0.03599	0.04616	0	5
 0.38	4.25583	0.09716	0.09765	0.17783	1.49891	*21
0.39	4.43068	0.0999	0.09923	0.18262	1.56524	*21
0.4	4.60763	0.10261	0.10075	0.18741	1.6284	*21
0.41	4.78762	0.10532	0.10226	0.19221	1.68917	*21
0.42	4.97013	0.10802	0.10375	0.19702	1.74745	*21
0.43	5.15516	0.1107	0.1052	0.20183	1.80342	*21
0.44	5.34266	0.11336	0.10663	0.20664	1.85724	*21
0.45	5.53265	0.11601	0.10803	0.21147	1.90906	*21
0.46	5.72508	0.11864	0.1094	0.2163	1.959	*21
0.47	5.91994	0.12125	0.11075	0.22113	2.00719	*21
0.48	6.11722	0.12385	0.11207	0.22598	2.05374	*21
0.49	6.31727	0.12644	0.11338	0.23082	2.09891	*21
0.5	6.51933	0.129	0.11465	0.23568	2.14247	*21
0.51	6.72375	0.13155	0.1159	0.24054	2.18467	*21
0.52		0.13408	0.11713	0.2454	2,2256	*21
0.53	7.13966	0.13659	0.11833	0.25028	2.26532	*21
 0.54	7.3511	0.13909	0.11951	0.25515	2.3039	*21
0.55	7.56486	0.14157	0.12068	0.26004	2.34141	*21

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### 7. Nevada Canal

# SECTION 4 – 7. Nevada SYSTEM DESCRIPTION

Are there multiple PODs?

YES

If "YES" you will need to copy and complete Sections 4B through 4E for each POD.

POD Name or Number this section describes (only needed if there is more than one):

. Nevada
----------

### A. Place of Use

1. Is the right for municipal use?

NO

If "YES" the table below may be deleted.

TWP	RNG	MER	SEC	QQ	GLOT	DLC	Use	IF IRRIGATION, # PRIMARY ACRES	IF IRRIGATION, # SUPPLEMENTAL ACRES
See at	tached t	abulatio	n						
Total	Acres II	rigated							

Reminder: The map associated with this claim must identify Donation Land Claims (DLC), Government Lots (GLot), Quarter Quarters (QQ), and if for irrigation, the number of acres irrigated within each projected DLC, GLot, and QQ.

# **B. Diversion and Delivery System Information**

Provide the following information concerning the diversion and delivery system. Information provided must describe the equipment used to transport <u>and</u> apply the water from the point of diversion to the place of use.

1. Is a pump used?

NO

Reminder: For pump calculations use the reference information at the end of this document.

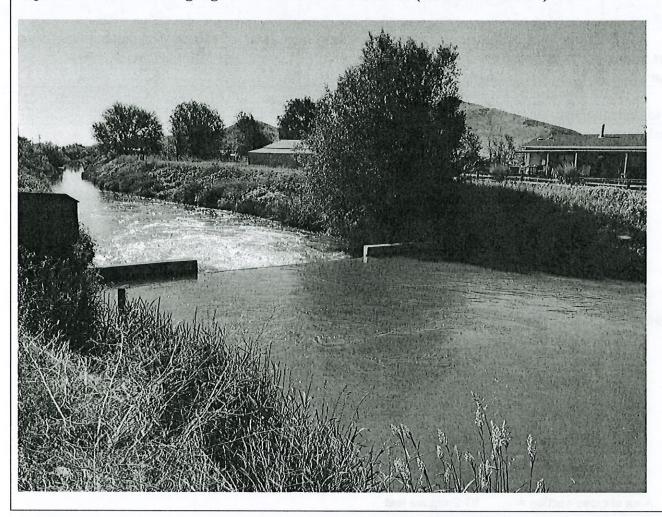
7. Is the distribution system piped?

NO



12. Additional notes or comments related to the system:

Water is diverted out of the Malheur River to the 10.8-mile-long Nevada Canal. The photo below shows the flow measurement weir and gauge (measuring point 7 on final proof map). The department has historic gauge data for the Nevada Canal (number 13233200).



# C. Storage

1. Does the distribution system include in-system storage (e.g. storage tank, bulge in system / reservoir)

NO

# D. Gravity Flow Pipe

(THE DEPARTMENT TYPICALLY USES THE HAZEN-WILLIAM'S FORMULA FOR A GRAVITY FLOW PIPE SYSTEM)

1. Does the system involve a gravity flow pipe?

NO

# E. Gravity Flow Canal or Ditch

(THE DEPARTMENT TYPICALLY USES MANNING'S FORMULA FOR CANALS AND DITCHES)

1. Is a gravity flow canal or ditch used to convey the water as part of the distribution system? YES

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# 7. Nevada Canal

**2.** Complete the table:

Canal or Ditch Type (material)	TOP WIDTH OF CANAL OR DITCH	BOTTOM WIDTH OF CANAL OR DITCH	DEPTH	"N" FACTOR	AMOUNT OF FALL	LENGTH OF CANAL/ DITCH	SLOPE	COMPUTED RATE (IN CFS)
Earth; straight and uniform	30 ft	16.6 ft	4 ft	0.025	0.74 ft	1602 ft	0.000462	241.8 cfs

3. Provide calculations:

	Ditch Ca	apacity C	alcualtor					
		Manning's F						
	Data Entry	(fill in un	derlined bla	anks)				
Top Width =	30	feet						
Bottom Width =	16.6	feet						
Depth =	4	feet						
Fall =	0.74	feet	per	1602	feet of dista	nce		
Grade =	0.000462	, or	0.0%				And the second s	
n Factor =	0.025							
	Results ca	11						
	Results ca	ilculated						
Area of cross	s-section =	93.2	square feet					
Wetted F	erimeter =	32.20641						
Hydrauli	c Radius =	2.893834						
	Velocity =	2.594	feet per sec	ond	2-92 25	.um med		
alculated Ditch (	Capacity =	241.8	cubic feet	рег secor	ıd			

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### 7. Nevada Canal

4. If an actual measurement was taken, provide the following:

DATE OF	WHO MADE THE	MEASUREMENT	MEASURED QUANTITY OF
MEASUREMENT	MEASUREMENT	Метнор	WATER (IN CFS)
5/22/2018	Randy Kinney and Nancy	OWRD stream gauge	102.8 CFS
	Rorick	and rating table	
7/30/1985	<b>OWRD</b> guage 132333200		237 cfs

There is a gauge on the Nevada Ditch. The flow rate is calculated based on a rating table prepared by the Oregon Water Resources Department. On May 22, 2018 the gauge read 2.28 ft which on the rating table below is 102.8 CFS.

03/27/97 09:27

OREGON WATER RESOURCES DEPARTMENT

#13233200 Nevada Canal

Rating Table 10 from 10/01/96 00:00

Scale Offset =

< 1400

1996 WY

developed mar 1997 from temperary rating #10 Note: Table is expanded rectilinearly from 1.00 to 1.10 feet DISCUARGE IN OURTS

				DISCH	ARGE IN	CUBIC	FEET P	er sec	OND				
ght	.00	.01	,02	.03	.04	.05	.06	.07	.20	.09	diff	2nd diff	
1.0	0*	.550	1,10	1.65	2.20								
4.1	6.50	5.94	6.41	6.91	7.44	2,75	3.30	3.85	4.40	4.95	6.50	*** 3	
1.2	11.50	12.0	12.6	13.1	13.7	8.02	8.63	9.28	9.97	10.7	6.00	.500	
1.3	17,7*	18.3	18.9	19.6	20.2	14.3	15.0	15.6	14 -	23.7	6 20	200	
1.4	24.5*	25.2	25.9	26.6	27.3	28.1	21.6	22.3	23.0		6.80	.600	
1.5	32.0	32.7	33.4	34,2	34.9	35.7			30.4	31.2	7.50	.700	
1.6	39,7*	40.4	41.2	41.9	42.7	43.5	36.5 44.3	37.3 45.1	38.1	38.9	7.70		
1.7	47.5*	48.3	49.2	50.1	50.9	51.8	52.7		45.9	46.7	7.80	.100	
1.8	56.4*	57.3	58.1	59.0	59.9	60.7	61.6	53.5	54.5	85.5	8.90	1.10	
1.9	65.3*	66.2	67.2	68.1	69.0			62.5	63.5	64.4	8.90	0	
				****	03.0	70.0	71.0	71,9	72.9	73.9	9.60	.700	
2.0	74.9*	75.8	76.8	77.7	78.7	79.7					. 5:		6
2.1	84.6*	85.6	86.5	87.5	88.5	89.5	80.6	81.6	82.6	83.6	9.70	.100	8
2.2	94.5*	95.5	96.5	97.6	98.6	99.7	90.5	91.5	92.5	93.5	9.90	.200	138
2.3	105.0*	106.1	107.1	108.2	109.3	110.4	100.7	101.8	102.8	103.9	10.5	.600	
2.4	116.0*	117.1	118.2	119,2	120.3	121.4	122.5	112.6	113.7	114.9	11.0	.500	1
2.5	127.0*	128.2	129.4			e'u 132.9	134.1	123.6	124.8	125.9	11.0	0	
2.6	139.0*	140.2	141.4	142.5	143.7	144.9	146.1	135.3	236.6	137.8	12.0	1.00	26
2.7	151.0*	152,2	153.4	154.5	155.7	156.9	158.1	159.3	148.6	149.6	12.0	0	
2.8	163.0*	164.3	165,6	166.8	168,1	169.4	170.7	172.0	160.6	161,8	12.0	0	
2.9	176.0*	177.4	178.8	180.1	181.5	182.9	184.3	185.7	173.4	174.7	13.0	1.00	183
					4,,,,		101.3	103.7	187.2	188.6	14.0	1.00	
3.0	190.0*	191.4	192.8	194.1	195.5	196.9	198.3	199.7	201.2	202.6			16
3,1	204.0*	205.4	206.8	208.1	209.5	210.9	212.3	213.7	215.2	216.6	14.0	0	
3.2	218.0*	219.4	220.8	222.2	223.5	224.9	226.3	227.8	229.2	230.6	14.0	0	
3.3	232.0*	233.4	234.8	236.2	237.6	238,9	240.4	241.8	243.2	244.6	24.0	0	-
3.4	246.00	247.4	248.8	250.2	251.6	253.0	284.4	258.8	257.2	258.6	14.10	0	
3.6	260.0	261.4	262.9	264.3	265.7	267.2	268.6	270.1	271.5		14.0	. 026	
3.6	274.4	275.9	277.3	278.8	280.3	281.8	283.2	284.7	286.2	273.0	14.4	.371	
3.7	289.2	290.7	292.2	293.7	295.2	296.7	298.2	299.7	301.3	287.7 ,	14.8	.370	
3.8	364.3	305.9	307.4	308.9	310.5	312.0	313.6	315.1		302.8	15.1	.369	
3.9	319.8	321.4	323.0	324.6	326.1	327.7	329.3	330.9	316.7	318.3	15.5	.368	
							*****	330.3	332.5	334.1	15.9	.367	
4.0	335.7*												

skeletal rating point

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### 8. Willow Creek Feeder Canal

# SECTION 4 – 8. Willow Creek Feeder Canal SYSTEM DESCRIPTION

Are there multiple PODs?

YES

If "YES" you will need to copy and complete Sections 4B through 4E for each POD.

POD Name or Number this section describes (only needed if there is more than one):

## 8. Willow Creek Feeder Canal

### A. Place of Use

1. Is the right for municipal use?

YES NO

If "YES" the table below may be deleted.

TWP	RNG	Mer	SEC	QQ	GLOT	DLC	Use	IF IRRIGATION, # PRIMARY ACRES	IF IRRIGATION, # SUPPLEMENTAL ACRES
See att	tached t	abulatio	n			= = 1		3 62-17-4-19	
Total	 Acres I1	rigated		**************************************					

Reminder: The map associated with this claim must identify Donation Land Claims (DLC), Government Lots (GLot), Quarter Quarters (QQ), and if for irrigation, the number of acres irrigated within each projected DLC, GLot, and QQ.

# **B. Diversion and Delivery System Information**

Provide the following information concerning the diversion and delivery system. Information provided must describe the equipment used to transport <u>and</u> apply the water from the point of diversion to the place of use.

1. Is a pump used?

NO

7. Is the distribution system piped?

NO





### 12. Additional notes or comments related to the system:

The Willow Creek valley northwest of Vale is irrigated with water from the Vale Main Canal. At the upper end of the Vale District the canal flows into Willow Creek. Vale water also reaches Willow Creek from drains, field runoff, and return flow from ditches. This return flow from Vale is rediverted at the Willow Creek Point of Diversion. The picture shows the ramp flume installed by WID to measure flow (MP8 on final proof map).



# C. Storage

1. Does the distribution system include in-system storage (e.g. storage tank, bulge in system / reservoir)

NO

# D. Gravity Flow Pipe

(THE DEPARTMENT TYPICALLY USES THE HAZEN-WILLIAM'S FORMULA FOR A GRAVITY FLOW PIPE SYSTEM)

1. Does the system involve a gravity flow pipe?

NO

Attach measurement notes.

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### 8. Willow Creek Feeder Canal

E. Gravity Flow Canal or Ditch (The Department typically uses Manning's formula for canals and ditches)

1. Is a gravity flow canal or ditch used to convey the water as part of the distribution system? YES

2. Complete the table:

Тор	Воттом	DEPTH	"N"	AMOUNT	LENGTH	SLOPE	COMPUTED
WIDTH OF	WIDTH OF		FACTOR	OF FALL	OF		RATE
CANAL OR	CANAL OR	202597			CANAL/		(IN CFS)
DITCH	DITCH				DITCH		
12.8	5.5	2.5	0.025	2	2297	0.000871	54.8 cfs
	WIDTH OF CANAL OR DITCH	WIDTH OF CANAL OR DITCH UIDTH OF CANAL OR DITCH	WIDTH OF CANAL OR DITCH DITCH	WIDTH OF CANAL OR DITCH DITCH FACTOR	WIDTH OF CANAL OR DITCH FACTOR OF FALL	WIDTH OF CANAL OR DITCH  WIDTH OF CANAL OR CANAL OR DITCH  FACTOR OF FALL OF CANAL / DITCH	WIDTH OF CANAL OR DITCH  WIDTH OF CANAL OR CANAL OR DITCH  CANAL OR DITCH  CANAL OR DITCH

2 Provide coloulations

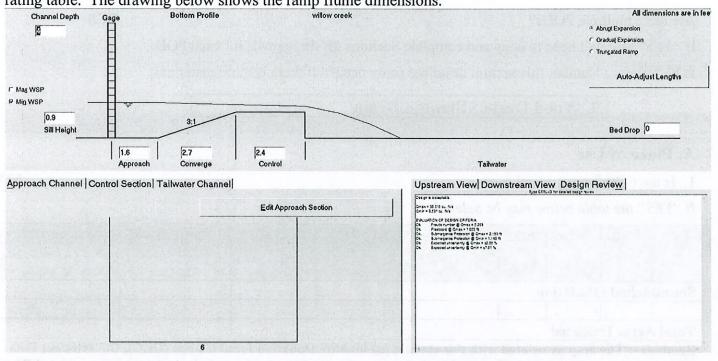
e channel dim	ensions w	ere deter	mined fron	ı lidar	data.		RECEIVED	
	Ditch Ca	apacity C	alcualtor			JAN 0 9 2019		
	using (	Manning's F	ormula				JAN 0 9 2015	
	Data Entry	/ (fill in un	derlined blar	ıks)			OWRD	
Top Width =	12.8	feet						
Bottom Width =	5.5	feet						
Depth =	2.5	feet						
Fall =	2	feet	per	2297	feet of distance			
Grade =	0.000871	, or	0.1%					
n Factor =	0.025					1		
	4						RECEIVED	
2 - 1	Results ca	lculated		1 71 0	Militie II, Li		JAN 0 9 2019	
Area of cros	c coction =	22 876	square feet				71.251 1.119 R	
- T	Perimeter =						OWRD	
	Hydraulic Radius =							
riyalda	Velocity =		feet per secor	ıd				
	10							
Calculated Ditch	Capacity =	54.8	cubic feet pe	r seco	nd			

4. If an actual measurement was taken, provide the following:

5/30/2018	Randy Kinney and Nancy Rorick	Ramp flume	26.2 CFS
DATE OF MEASUREMENT	WHO MADE THE MEASUREMENT	MEASUREMENT METHOD	MEASURED QUANTITY OF WATER (IN CFS)

### 8. Willow Creek Feeder Canal

The flow was measured at the ramp flume constructed by WID prior to the 2018 irrigation season. The district used WinFlume (a computer program developed by the BOR) to design the flume and to provide a rating table. The drawing below shows the ramp flume dimensions.



On May 30, 2018 the water level as measured on the gauge was 1.2 feet. The rating table generated by WinFlume shows that the flow was 26.2 CFS.

JAN 0 9 201	Submergence Ratio	H1/L Ratio	Required Head Loss	Froude Number	Discharge ofs	Head at Gage, h1 feet
	0.000	0.169	0.101	0.093	4.7	0.400
OWRD	0.000	0.213	0.115	0.117	6.6	0.500
	0.000	0.256	0.127	0.140	8.8	0.600
	0.000	0.301	0.136	0.162	11.2	0.700
	0.000	0.346	0.145	0.183	13.8	0.800
	0.000	0.391	0.152	0.202	16.6	0.900
	0.000	0.437	0.159	0.220	19.6	1.000
	0.000	0.483	0.165	0.237	22.8	1.100
	0.000	0.529	0.170	0.253	26.2	1.200
	0.000	0.576	0.175	0.268	29.8	1.300
	0.000	0.623	0.179	0.283	33.6	1.400

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# SECTION 4 – 9. Wood Drain/Blanton Drain SYSTEM DESCRIPTION

OWRD

Are there multiple PODs?

YES

If "YES" you will need to copy and complete Sections 4B through 4E for each POD.

POD Name or Number this section describes (only needed if there is more than one):

To and the second	The same of the sa				
O	Wood	Drain /	Blanton	Drain	
1.	WUUU	Diam/	Dianton	Diam	

### A. Place of Use

1. Is the right for municipal use?

NO

If "YES" the table below may be deleted.

TWP	RNG	MER	SEC	QQ	GLOT	DLC	Use	IF IRRIGATION, # PRIMARY ACRES	IF IRRIGATION, # SUPPLEMENTAL ACRES
See at	tached t	abulatio	n						
Total	 Acres I1	rigated							

Reminder: The map associated with this claim must identify Donation Land Claims (DLC), Government Lots (GLot), Quarter Quarters (QQ), and if for irrigation, the number of acres irrigated within each projected DLC, GLot, and QQ.

# **B. Diversion and Delivery System Information**

Provide the following information concerning the diversion and delivery system. Information provided must describe the equipment used to transport <u>and</u> apply the water from the point of diversion to the place of use.

1. Is a pump used?

NO

Reminder: For pump calculations use the reference information at the end of this document.

7. Is the distribution system piped?

NO

### 12. Additional notes or comments related to the system:

Water from the Old Owyhee Ditch discharges directly into the Wood Drain. When the water is high in the Old Owyhee Ditch it backs up the Nevada Canal and is used by WID for irrigation. Water from the Wood Drain flows into the Blanton Drain and then into the Blanton Canal. Water from the Blanton Canal is used to irrigate lands north and northwest of Ontario.

Water flowing over the weir at the Wood Drain (measuring point 9 on the final proof map).



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OWRD

Downstream side of the weir, showing water from the Old Owyhee Ditch flowing into Wood Drain.



### 9. Wood Drain / Blanton Drain

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## C. Storage

1. Does the distribution system include in-system storage (e.g. storage tank, bulge in system / reservoir)

NO

D. Gravity Flow Pipe

(THE DEPARTMENT TYPICALLY USES THE HAZEN-WILLIAM'S FORMULA FOR A GRAVITY FLOW PIPE SYSTEM)

1. Does the system involve a gravity flow pipe?

NO

Attach measurement notes.

## E. Gravity Flow Canal or Ditch

(THE DEPARTMENT TYPICALLY USES MANNING'S FORMULA FOR CANALS AND DITCHES)

1. Is a gravity flow canal or ditch used to convey the water as part of the distribution system? YES If "NO", items 2 through 4 relating to this section may be deleted.

2. Complete the table:

CANAL OR	Тор	Воттом	DEPTH	"N"	AMOUNT	LENGTH	SLOPE	COMPUTED
DITCH TYPE	WIDTH OF	WIDTH OF		FACTOR	OF FALL	OF		RATE
(MATERIAL)	CANAL OR	CANAL OR				CANAL/		(IN CFS)
	DITCH	Diтсн				DITCH		
Earth;	13.3	7.6	1	0.025	1.5 feet	570 feet	0.002632	26.7 cfs
straight and uniform								

### 3. Provide calculations:

ased or	n ditch di	mension o	btained f	rom Lidaı	· Data			OWRD
		Ditch Ca	apacity C	alcualtor	•		1-	
	using Manning's Formula						som Lagri	
	A make			14.466	u district	tica i anti	u et a la la	Contraction and business of
11 11/14	J-82325-32	Data Entry	y (fill in un	derlined b	lanks)	BI Hadin		par rozana/toe nutto regio
					NOS RES D			
	op Width =				4000 100004			
Botto	m Width =		feet					
	Depth =	1	feet					
	Fall =	1.5	feet	per	570	feet of di	stance	
	Grade =	0.002632	, or	0.3%				
	n Factor =	0.025						
							97,97,70	Linux Cartina
	te office is	logia le						
- Syri		Results ca	alculated				THE LES	dord Manigoria
					•			
А	rea of cross	s-section =	10.45	square feet				
	Wetted F	Perimeter =	13.6407	feet				Mark Control
	Hydrauli	c Radius =	0.76609					
		Velocity =	2.553	feet per sec	cond	A 1902 Tul		Linearcus American (2005).
								OWNERS IN THE STREET
Calcula	ted Ditch (	Capacity =	26.7	cubic feet	per secor	ıd	(4.783030	. It share an extension final
Jaioala	isa biton (	Japaony	2011	54510 1000	por 50001			

4. If an actual measurement was taken, provide the following:

DATE OF	WHO MADE THE	MEASUREMENT	MEASURED QUANTITY OF		
MEASUREMENT	MEASUREMENT	Метнор	WATER (IN CFS)		
9/20/2018	Randy Kinney and Nancy	Rectangular weir	36.61 cfs		
OV.	Rorick	to in risk of oth Programs.	and the voice make the mineral		

 $Q=3.33(L-0.2H)H^{1.5}$ 

L = 5.3 feet

H = 1.7 feet

 $Q = 3.33(5.3-(0.2 \text{ x } 1.7))1.7^{-1.5}$ 

Q = 36.61 CFS

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# SECTION 5 CONDITIONS



All conditions contained in the permit, permit amendment, or any extension final order shall be addressed. Reports that do not address all performance related conditions will be returned.

### 1. Time Limits:

Permits and any extension final orders contain any or all of the following dates: the date when the actual construction work was to begin, the date when the construction was to be completed, and the date when the complete application of water to the proposed use was to be completed. These dates may be referred to as ABC dates. Describe how the water user has complied with each of the development timelines established in

the permit or permit extension of time:

	DATE FROM	DATE	DESCRIPTION OF ACTIONS TAKEN BY
	PERMIT	ACCOMPLISHED*	Water User to Comply with the Time limits
ISSUANCE DATE	April 25, 1950		
BEGIN CONSTRUCTION (A)	April 25, 1950		
COMPLETE CONSTRUCTION (B)	October 1, 1951	4/25/1950	Historic aerial photographs show that the feeder canal was installed by 1943.
COMPLETE APPLICATION OF WATER (C)	October 1, 1952	Irrigation season 1950	The 1943 and 1954 aerial photographs show the canal installed and lands under irrigation.

<sup>\*</sup> MUST BE WITHIN PERIOD BETWEEN PERMIT OR ANY EXTENSION FINAL ORDER ISSUANCE AND THE DATE TO COMPLETELY APPLY WATER

NO
NO
NO
NO

NO

### d. Other conditions?

If "YES" to any of the above, identify the condition and describe the water user's actions to comply with the condition(s):

### **SECTION 6**

### ATTACHMENTS

Provide a list of any additional documents you are attaching to this report:

ATTACHMENT NAME	DESCRIPTION
	BOR contract
Map 1	Overview of source reservoirs for the return flow
Map 2	Vale Oregon Irrigation District
Map 3	Owyhee Irrigation District
Map 4	VOID and Owyhee PODs and Canals that deliver return flow to WID.
Map 5	Delivery system for return flow to WID.
Map 6	Delivery system for return flow to WID (base aerial photography USDA 2016).
Appendix A	Flow calculations at measuring points.
Historic aerial photographs	1943 and 1954 aerial photographs obtained from the University of
1	Oregon map library.
Tabulation	Tabulation of irrigated acres.
Final Proof Maps	WID west and WID east.

### **SECTION 7**

### CLAIM OF BENEFICIAL USE MAP

The Claim of Beneficial Use Map must be submitted with this claim. Claims submitted without the Claim of Beneficial Use map will be returned. The map shall be submitted on poly film at a scale of 1" = 1320 feet, 1" = 400 feet, or the original full-size scale of the county assessor map for the location.

Provide a general description of the survey method used to prepare the map. Examples of possible methods include, but are not limited to, a traverse survey, GPS, or the use of aerial photos. If the basis of the survey is an aerial photo, provide the source, date, series and the aerial photo identification number.

The mapping was completed using ArcGIS 10.6. The tax lot boundaries, section lines and quarter quarter lines are based on a data set provided by the Malheur County GIS Department. The base aerial photography was the 2016 USDA aerial photograph for Malheur County. Aerial photographs from other years and Google Earth imagery were used to verify field boundaries. The CWRE and District Manager met with all district patrons to verify the lands they irrigate.

## **Map Checklist**

Please be sure that the map you submit includes ALL the items listed below. (Reminder: Incomplete maps and/or claims may be returned.)

X Map on polyester film (waived per conversation with Mary Grainey 12/5/2018) X Appropriate scale (1" = 400 feet, 1" = 1320 feet, or the original full-size scale of the county assessor map) X Township, Range, Section, Donation Land Claims, and Government Lots X If irrigation, number of acres irrigated within each projected Donation Land Claims, Government Lots, Quarter-Quarters M Locations of fish screens and/or fish by-pass devices in relationship to point of diversion  $\boxtimes$ Locations of meters and/or measuring devices in relationship to point of diversion or appropriation  $\boxtimes$ Conveyance structures illustrated (pumps, reservoirs, pipelines, ditches, etc.)  $\boxtimes$ Point(s) of diversion or appropriation (illustrated and coordinates)  $\boxtimes$ Tax lot boundaries and numbers  $\boxtimes$ Source illustrated if surface water  $\boxtimes$ Disclaimer ("This map is not intended to provide legal dimensions or locations of property ownership lines")  $\boxtimes$ Application and permit number or transfer number X North arrow X Legend M CWRE stamp and signature

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## Appendix A

### Flow Calculations and Measurements

at Return Flow Points

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Bully Creek Gauge	

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### Namorf / Vines Gauges

OWRD

Stream flow on the Malheur River is measured by Idaho Power at the Namorf (upstream) and Vines (downstream). The Namorf gauge is located just downstream of the Vale Main Canal diversion and the Vines gauge is located just upstream of WID's diversions to the Vines, Farmers and JH Canals. The Bureau of Reclamation contract gives credits to VOID for return flow from the Vale Main Canal that enters the Malheur River between the Namorf and Vines gauges. The return flow credits to VOID are calculated by subtracting the flow at Namorf from the flow at Vines.

The charts below show gauging station flow data at Namorf and Vines for the 2017-2018 water year. The first chart (figure 1) shows flow measured at the two gauges and the second chart (figure 2) shows the difference between the flow at Namorf and Vines. The maximum return flow (calculated as the difference in daily mean flow at the two gauges) was 167.1 CFS on 7/23/2018. According to district manager Randy Kinney, this is likely an error. Other maximum return flow values were 95 CFS on 7/22/108 and 73.4 CFS on 7/24/2018.

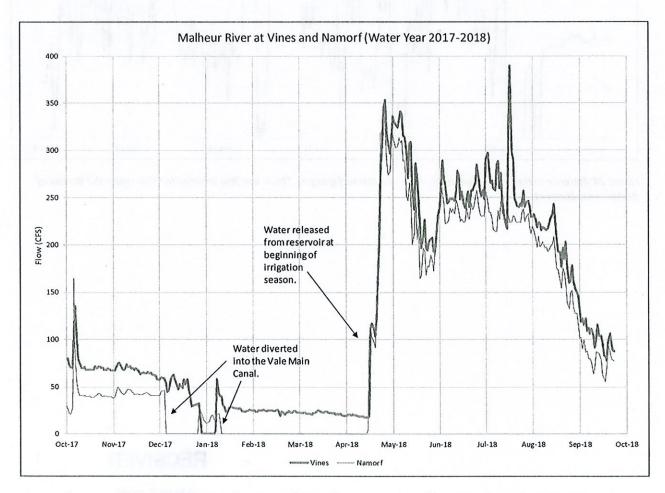


Figure 1 Flow measured by Idaho Power at the Vines and Namorf gauges on the Malheur River during the 2017-2018 water year.

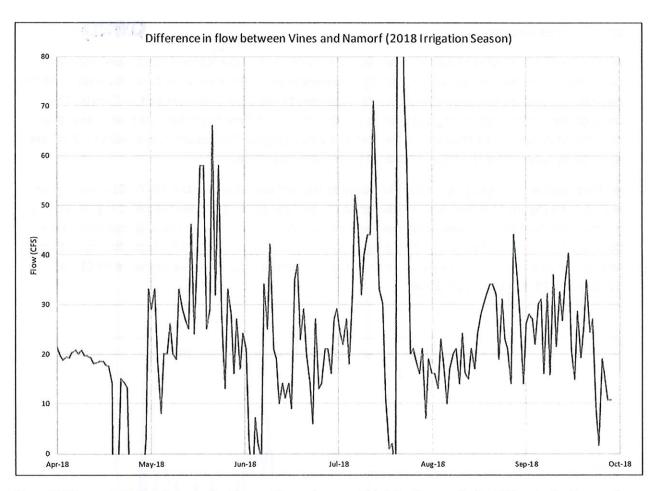


Figure 2 Difference in the flow between the Vines and Namorf gauges. This is the flow credited to VOID under the Bureau of Reclamation contract.

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OWRD



**Bully Creek Gauge** 

# OWRD

A portion of the water that flows into the Vale Main Canal is stored in Bully Creek Reservoir. This water is released from the reservoir for use on lands in the VOID. Idaho Power maintains a gauge on Bully Creek just upstream of where the Farmer's Canal discharges into Bully Creek. The Farmer's Canal marks the boundary between the VOID and WID Districts. The flow measured at the Bully Creek Greek Gauge is credited to VOID as return flow under the Bureau of Reclamation contract. Figure 3 shows flow at the Bully Creek Gauge for the 2017-2018 water year.

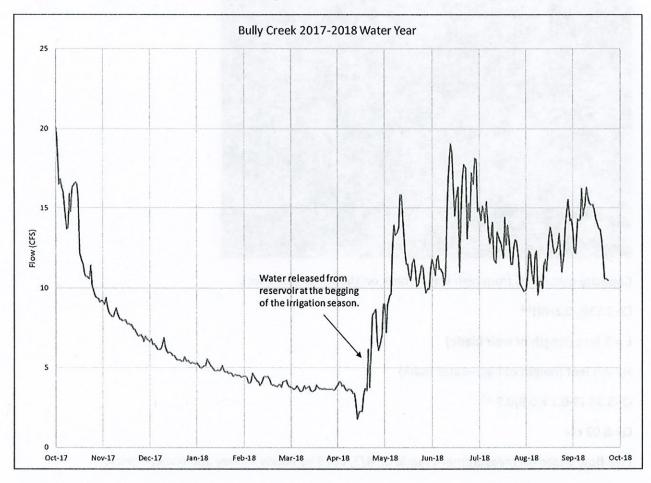


Figure 3 Flow measured at the Idaho Power gauge on Bully Creek. The gauge is just upstream of where the Farmers Canal discharges into Bully Creek. This flow is credited as return flow to VOID under the Bureau of Reclamation Contract.

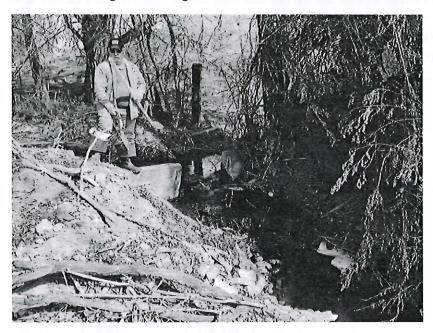
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### 3.Farmers Canal

### a. Kings Drain

# OWRD

Kings Drain is a small natural drainage that receives field runoff from VOID. We measured flow at the weir and the height of the high-water mark above the weir blade.



Capacity calculated from high water mark on the rectangular weir.

Q=3.33(L-0.2H)H1.5

L = 3 feet (length of weir blade)

H= 0.9 feet (height of high-water mark)

Q=3.33 (3-0.2 x 0.9)0.9 1.5

Q= 8.02 cfs

Live flow based on measurement made on 4/3/2018 by Randy Kinney and Nancy Rorick.

 $Q=3.33(L-0.2H)H^{1.5}$ 

H= 0.22 feet (height of water above weir blade)

Q=3.33 (3-0.2 x 0.22)0.22 1.5

Q= 1.02 cfs

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### 3. Farmers Canal

### b. Eagle Pitcher

Return flow from VOID drains into a natural drainage that discharges in to the Farmers Ditch.



Capacity calculated from high water mark on trapezoidal weir.

 $Q = 3.367 L H^{1.5}$ 

L = 2 feet (length of weir blade)

H= 0.75 feet (height of high-water mark)

 $Q = 3.367 \times 2 \times 0.75^{1.5}$ 

Q = 4.37 cfs

Live flow measured on 4/3/2018

H = 0.2 feet (height of water above weir blade)

 $Q = 3.367 \times 2 \times 0.2^{1.5}$ 

Q = 0.6 cfs

Live flow measured on 5/31/2018

H = 0.53 feet (height of water above weir blade)

 $Q = 3.367 \times 2 \times 0.53^{1.5}$ 

Q = 2.6 cfs

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### 4. GF Canal

### a. Shelby's



Return flow from VOID drains into a natural drainage that discharge to the GF canal.



Live flow measured on 4/3/2018 at the trapezoidal weir

 $Q = 3.367 L H^{1.5}$ 

L = 2 feet (length of weir blade)

H= 0.3 feet (height of water above weir blade)

 $Q = 3.367 \times 2 \times 0.3^{1.5}$ 

Q = 0.6 cfs

Live flow and capacity measured on 5/31/2018 (at capacity)

H= 0.5 feet (height of water above weir blade)

 $Q = 3.367 \times 2 \times 0.5^{1.5}$ 

Q = 2.38 cfs

### 4. GF Canal

### b. Bench Road

Return flow from VOID drains into a natural drainage that discharge to the GF canal.



Capacity calculated from high water mark on trapezoidal weir.

 $Q = 3.367 L H^{1.5}$ 

L = 2 feet (length of weir blade)

H= 1.1 feet (height of high-water mark)

 $Q = 3.367 \times 2 \times 1.1^{1.5}$ 

Q = 7.77 cfs

Live flow measured on 4/3/2018

H = 0.3 feet (height of water above weir blade)

 $Q = 3.367 \times 2 \times 0.3^{1.5}$ 

Q = 1.1 cfs

Live flow measured on 5/31/2018

H = 0.49 feet (height of water above weir blade)

 $Q = 3.367 \times 2 \times 0.49^{1.5}$ 

Q = 2.31 cfs

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### 4. GF Canal

# c. Henry's Gulch

Owyhee District return flow discharges to the GF Canal. **Capacity** calculated based on measured ditch dimensions. Flow was too low during field visit to accurately measure.

				alcualtor	
		using l	Manning's f	ormula	
		Data Entry	/ (fill in un	derlined blanks	)
	Top Width =	2	feet		
the said the	Bottom Width =		feet		
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Depth =	1.4	feet		
The state of the s	Fall =		feet	per	214 feet of distance
	Grade =	0.014019	, or	1.4%	
	n Factor =	0.025			
Charles to the second		Results ca	lculated		
		Trooming of	- Caratou		
	Area of cros	s-section =	2.38	square feet	
	Wetted F	Perimeter =			
是一种,但是一种一种一种一种一种一种一种一种一种一种一种一种一种一种一种一种一种一种一种	Hydrauli	c Radius =	0.558218		
		Velocity =		feet per second	
	Calculated Ditch (	anacity =	11.4	cubic feet per	second

6. Bully Creek Exchange / Willow Creek Pump Canal

a. Hale Road

VOID return flow discharges to the Willow Creek Pump Canal.

**Capacity** calculated from high water mark on trapezoidal weir.

 $Q = 3.367 L H^{1.5}$ 

L = 3 feet (length of weir blade)

H = 0.8 feet (height of highwater mark)

 $Q = 3.367 \times 3 \times 0.8^{1.5}$ 

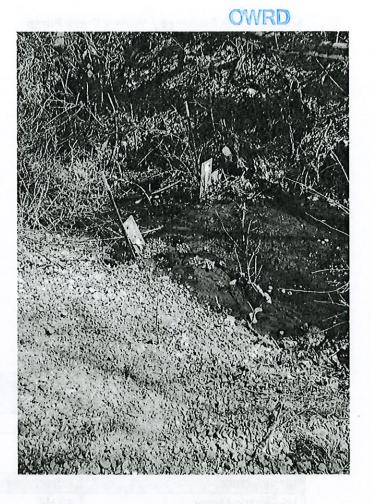
Q = 7.23 cfs

Live flow measured on 5/31/2018

 $Q = 3.367 \times 3 \times 0.17^{1.5}$ 

H = 0.8 feet (height of water above weir blade)

Q = 0.71 cfs



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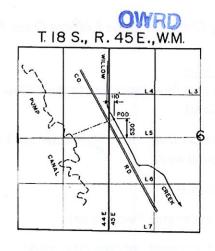
# 6. Bully Creek Exchange / Willow Creek Pump Canal

### b. Willow Creek Pump Station

VOID return flow in Willow Creek is pumped into the Willow Creek Pump Canal.

Map (right) shows the location of the pump in final proof map for certificate 65891.





# FINAL PROOF SURVEY

Application No. 57274 Permit No. 43331

### **Pump Information**

Manufacturer	Model	Serial Number	Type (centrifugal, turbine or submersible)	Intake size	Discharge size
Goulds	14	unknown	turbine	14 inch	12 inch

### **Motor Information**

Manufacturer	Horsepower
US Electric Motor	40 HP

### **Theoretical Pump Capacity**

Horsepower	Operating PSI	Lift from Source to	Lift from Pump to Place of Use	Total Pump Output (in cfs)
40 HP	2	7 feet	47 feet	4.77 cfs

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Pump Cap				
using Depart	ment desig	gned form	ula:	
(hp)(efficien	ncy) / (lift	+ psi hea	d) = capacity in cfs	
Efficiency:				
Centrifugal	= 6.61			
Turbine = 7.	04			
Data Entry (	fill in und	erlined b	olanks)	7,5
HP =	40			
Efficiency =	7.04			
Lift =	54		**	
PSI =	2			
Results Cal	culated			(Leef)
(hp)(efficie	ncy) =	281.6		
Head based	on psi =	5.1		
Total dynam	nic head :	59.1		
(head + lift)				
Pump Capa	_14	4 77	feet per second	

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### 6. Bully Creek Exchange / Willow Creek Pump Canal

### c. Laterals 278 and 455

# OWRD

VOID return flow discharges into the Willow Creek Pump Canal. The two laterals merge downstream of the measuring points and discharge into the canal.

Lateral 278 (MP c-1)

**Capacity** calculated based on high water mark in culvert. The weir was damaged and could not be used to measure flow. Equation is from

https://www.cedengineering.com/userfiles/Partially%20Full%20Pipe%20Flow%20Calculations.pdf

$$Q = (1.49/n)A(R_h^{2/3})S^{1/2}$$

### Where:

Q is the flow in cfs

A is the cross-sectional area of flow in ft<sup>2</sup>

S is the slope of the channel in ft/ft (dimensionless)

= 0.017

n is the roughness coefficient = 0.022 (for

corrugated metal)

 $R_h$  is the hydraulic radius = A/P

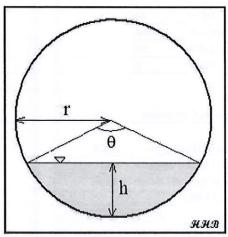
P is the wetted perimeter of the cross-sectional

area of flow in ft

r is the radius of the pipe = 1.25 ft (for 30-inch

diameter culvert)

h is the height of water measured in the pipe



Partially Full Pipe Flow Parameters (Less Than Half Full)

$$\Theta = 2\arccos((r-h)/r))$$

$$A = (r^2(\theta-\sin\theta))/2$$

$$P = r\theta$$

 $R_h = A/P$ 

For high water mark h = 1.25

$$\Theta = 2\operatorname{arccos}((1.25-1.25)/1.25)) = 3.14$$

 $A = (1.25^2(3.14-\sin 3.14))/2 = 2.454 \text{ ft}^2$ 

P = 1.25 ft x 3.14 = 3.93 ft

 $R_h = 2.454 \text{ ft}^2/3.93 \text{ ft} = 0.1886 \text{ ft}$ 

$$Q = (1.49/0.022)(2.454 \text{ ft}^2)(0.1886 \text{ ft}^{2/3})0.017^{1/2} = 15.86 \text{ cfs}$$

For live flow h = 0.3 ft

$$\Theta = 2\arccos((1.25-0.3)/1.25)) = 1.415A = (1.25^2(1.415-\sin 1.415))/2 = 0.3337 \text{ ft}^2$$

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P = 1.25 ft x 1.415 = 1.77 ft

 $R_h = 0.3337 \text{ ft}^2/1.77 \text{ ft} = 0.1886 \text{ ft}$ 

Q = (1.49/0.022)  $(0.3337 \text{ ft}^2)$   $(0.1886 \text{ ft}^{2/3})0.017^{1/2} = 0.97 \text{ cfs}$ 

Lateral 455 (MP 6c-2)



Capacity calculated from highwater mark on rectangular weir.

 $Q=3.33(L-0.2H)H^{1.5}$ , for L = 5 feet and H = 1.3 feet

 $Q = 3.33(5-0.2 \times 1.3) 1.3^{1.5}$ 

Q = 23.4 cfs

Live flow measured on 5/31/2018

 $Q = 3.33(5-0.2 \times 0.44) 0.44^{1.5}$  for H = 0.44 feet

Q = 4.77 cfs

Capacity of laterals 278 and 455 combined = 15.86 cfs +23.4 cfs = 39.26 cfs

Live flow of laterals 278 and 455 combined measured on 5/31/2018 = 0.97 cfs + 4.77 cfs = 5.74 cfs

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### 6. Bully Creek Exchange / Willow Creek Pump Canal

### d. End Owyhee Ditch

Water flow measured at weir on 5/30/2018. Owyhee District return water flows from the ditch over the weir and into a six-inch diameter PVC pipe. From the pipe it discharges into the Willow Creek Pump Canal.

**Live flow** over the weir was measured on 5/30/2018. Using the equation for a rectangular weir.

Q=3.33(L-0.2H)H1.5

L = 3 feet (length of weir blade)

H = 0.6 feet (height of water above weir blade)

 $Q = 3.33(3-0.2 \times 0.6) 0.6^{1.5}$ 

Q = 0.15 cfs

### OWRD



### Capacity is limited to the 6-inch diameter pipe.

Pipe Size	Pipe Type	"C" factor	Amount of Fall	Length of Pipe	Slope	Computed Rate of Water Flow (in cfs)
6"	PVC	150	25	188	0.133	3.52 cfs

	Pipe Capac	-		I	
for pipes flowin	g full, using the	Hazen-Wil	liams Formul	a	
	Data Entry (fi	ll in under	lined blanks	)	
Interior Diameter =	6	inches, or	0.5	feet	
Roughness Coefficient (C) =	150				
Fall =	25	feet	per	188	feet of distance
Grade =	0.13297872	, or	13.3%		
	Results calcu	ulated			
		0 - 1 -			
	ross-section =		square feet		
Wette	d Perimeter =	1.570796	feet		
Hydr	aulic Radius =	0.125			
	Velocity =	17.9433	feet per sec	ond	
Pir	e Capacity =	3.523	cubic feet p	er secor	nd

ÓWRD

## 6. Bully Creek Exchange / Willow Creek Pump Canal

### e. Belnap farm

Owyhee District return water flows to the Bully Creek Exchange / Willow Creek Pump Canal.

Live flow measured on 5/30/2018 at the rectangular weir. Flow was at high water mark, so this measurement was also the capacity.

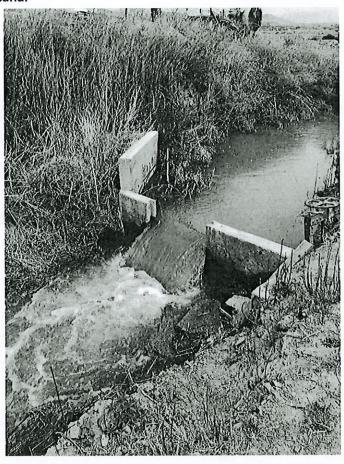
Q=3.33(L-0.2H)H1.5

L = 3 feet (length of weir blade)

H = 0.8 feet (height of water above weir blade)

 $Q = 3.33(3-0.2 \times 0.8) \ 0.8^{1.5}$ 

Q = 6.77 cfs



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# 7. Nevada Canal

# OWRD

## a. Morgan Lane

Owyhee District return flow discharges to the Gravity canal (lateral off the Nevada Canal).

Capacity calculated using the Manning flow equation. Channel dimensions measured in the field.

Canal or Ditch Type (material)	Top Width of Canal or Ditch	Bottom Width of Canal or Ditch	Depth	"N" Factor	Amount of Fall	Length of Canal / Ditch	Slope	Computed Rate (in cfs)
Earth: straight and uniform	4.2 ft	2 ft	0.4 ft	0.025	5.34	125.18	0.043	6.6 cfs

			Calcualtor		
	using	Manning's I	Formula		
	Data Entr	y (fill in un	derlined bl	anks)	
Top Width =	4.2	feet			
Bottom Width =	2	feet			
Depth =	0.4	feet			
Fall =	5.34	feet	per	125.18	feet of distance
Grade =	0.042659	, or	4.3%		1
n Factor =	0.025	THE COLUMN TWO IS NOT			
	Results ca	alculated			
Area of cross	s-section =	1.24	square feet		
Wetted F	erimeter =	4.34094	feet		
Hydrauli	c Radius =	0.285652			
	Velocity =	5.325	feet per sec	ond	
Calculated Ditch (	Capacity =	6.6	cubic feet	per secor	nd



### 7. Nevada Canal

#### b. Onion Avenue

Field runoff from the Owyhee District flows into the drainage at Onion Avenue.

We measured a cross-sectional profile of the channel with a hand level, stadia rod, and tape. The water depth was measured across the profile at one-foot intervals. These one-foot intervals were multiplied by the depth to get an area and summed to get the total cross-sectional area.

The flow velocity was measured by timing how long it took a small ball to float a measured distance. The flow velocity was the average of four timed floats.

Cross sectional area = 4.55 ft<sup>2</sup>

Flow velocity = 1.45 ft/sec

Flow =  $6.59 \text{ ft}^3/\text{sec}$ 



The capacity is based on the channel dimensions.

		Ditch Ca	apacity C	alcualtor		
		using	Manning's F	ormula		
		Data Entry	y (fill in un	derlined bla	inks)	
	Top Width =	14.4	feet			
Bot	tom Width =	7.1	feet			
	Depth =	1	feet			
	Fall =	0.827	feet	per	139	feet of distance
	Grade =	0.00595	, or	0.6%		
	n Factor =	0.025			,	
		Results ca	alculated			
	Area of cross	s-section =	10.75	square feet		
	Wetted F	Perimeter =	14.66902	feet		
	Hydrauli	c Radius =	0.732837			
		Velocity =	3.727	feet per seco	ond	
alcu	lated Ditch (	Capacity =	40.1	cubic feet p	er secor	nd

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### 7. Nevada Canal

### c. Shoestring Ditch

The Shoestring Ditch discharges water from the Owyhee District into the Nevada Canal. The photo below was taken from the measuring point looking south (upstream) at the Shoestring Ditch.



Live flow was measured on 5/30/2018. At the time of the site visit water was flowing over the weir and through the 18-inch head gate (on the left) into another ditch. The calculated flow is the sum of the water going over the weir boards and the water flowing into the pipe.



## Capacity of the Shoestring Ditch

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CANAL OR	ТОР	Воттом	DEPTH	"N"	AMOUNT	LENGTH	SLOPE	COMPUTED
DITCH TYPE (MATERIAL)	WIDTH OF CANAL OR DITCH	WIDTH OF CANAL OR DITCH		FACTOR	OF FALL	OF CANAL/ DITCH		RATE (IN CFS)
Earth; straight and uniform	13.9 feet	7.5 feet	1.5	0.025	2.9	1181	0.0025	50.4 cfs

Channel dimensions based on Lidar data

		Ditch Ca	apacity C	alcualtor			
		using (	Manning's F	ormula			
		Data Entry	/ (fill in un	derlined b	lanks)		
Top	Width =	13.9	feet				
Bottom <sup>1</sup>	Width =	7.5	feet				
	Depth =	1.5	feet				
	Fall =	2.9	feet	per	1181	feet of dis	tance
	Grade =	0.002456	, or	0.2%			
n F	actor =	0.025					
		Results ca	alculated				Andrew Commission of the Commi
Area	of cros	s-section =	16.05	square feet	l .		
\	Vetted F	Perimeter =	14.56824	feet			
EQ F	Hydrauli	c Radius =	1.101712	DOC 5) Pe	BUA IN		1 38
0- 12		Velocity =	3.142	feet per se	cond		

The calculation of live flow over the rectangular weir on 5/30/2018.

Q=3.33(L-0.2H)H1.5

L = 5.45 feet (length of weir blade)

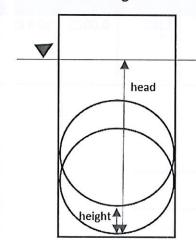
H = 0.45 feet (height of water above weir blade)

 $Q = 3.33(5.45-0.2 \times 0.45) 0.45^{1.5}$ 

Q = 5.39 cfs

Flow through 18-inch head gate based on the height of opening where the head is 37 inches and the height of the opening is 5 inches. The table for the Waterman's Headgate shows that Q = 6.09 cfs.

## Head gate



Water level on upstream side

Diameter	18	in							
Perimeter	56-9/16	in							
Area (in²)	254-31/64	in²							
Area (ft²)	1.77	ft²							
Coefficient									
of Discharge	0.7								
					0	1	35	36	37
Height (in)	q	Area of Overlap (in²)	Opening Area (in²)	Opening Area (ft²)	(0.000)	(0.083)	(2.917)	(3.000)	(3.083)
0	3.1416	254-1/2	-1/64	0.00	0.000	0.000	-0.001	-0.001	-0.001
1	3.0304	236-1/2	17-63/64	0.12	0.000	0.203	1.198	1.215	1.232
2	2.9189	218-9/16	35-59/64	0.25	0.000	0.405	2.393	2.427	2.461
3	2.8067	200-3/4	53-47/64	0.37	0.000	0.605	3.580	3.631	3.681
4	2.6934	183-3/32	71-25/64	0.50	0.000	0.804	4.756	4.824	4.890
5	2.5786	165-21/32	88-53/64	0.62	0.000	1.000	5.918	6.002	6.085
6	2.4619	148-17/32	105-61/64	0.74	0.000	1.193	7.059	7.159	7.258
7	2.3427	131-3/4	122-47/64	0.85	0.000	1.382	8.177	8.293	8.407
Я	2 2205	115_3/8	139-7/6/	N 97	0 000	1 567	9 268	0 300	9 529

Live flow = 6.09 cfs + 5.39 cfs = 11.48 cfs

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## 7. Nevada Canal

## d. Corn Drain

Return flow from the Owyhee District discharges into the Nevada Canal. **Capacity** calculated based on the channel dimensions.

CANAL OR	Тор	Воттом	DEPTH	"N"	AMOUNT	LENGTH	SLOPE	COMPUTED
DITCH TYPE (MATERIAL)	WIDTH OF CANAL OR DITCH	WIDTH OF CANAL OR DITCH		FACTOR	OF FALL	OF CANAL/ DITCH		RATE (IN CFS)
Earth; straight and uniform	2.5 ft	1 ft	1.5 ft	0.025	0.4	380	0.001	1.6 cfs

	Ditch Ca	apacity C	alcualtor		
	using	Manning's F	ormula		
	Data Entr	y (fill in un	derlined blan	ks)	
Top Width =	2.5	feet			
Bottom Width =	1	feet			
Depth =	0.8	feet			-
Fall =	0.4	feet	per	380	feet of distance
Grade =	0.001053	, or	0.1%		
n Factor =	0.025				
	Results ca	alculated			
Area of cros	s-section =	1.4	square feet		
Wetted I	Perimeter =	3.193171	feet		-
Hydraul	ic Radius =	0.438436			
	Velocity =	1.113	feet per secor	nd	
Calculated Ditch	Capacity =	1.6	cubic feet pe	er seco	nd



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## 8. Willow Creek Feeder Canal a. 430 Lateral

VOID water returns to Willow Creek and then flows into the Willow Creek Feeder Canal.

Capacity calculated based on high water mark over weir.

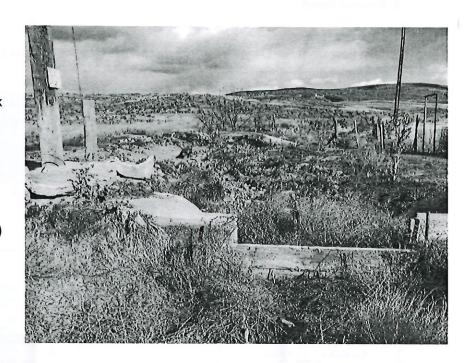
Q=3.33(L-0.2H)H1.5

L = 6.8 feet (length of the weir blade)

H = 0.6 feet (height of high-water mark)

 $Q = 3.33(6.8-0.2 \times 0.6) 0.6^{1.5}$ 

Q = 10.34 cfs



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### 8. Willow Creek Feeder Canal

### b. Dry Gulch

VOID water returns to Willow Creek and then flows into the Willow Creek Feeder Canal. Unable to discern high water mark. Live flow is:

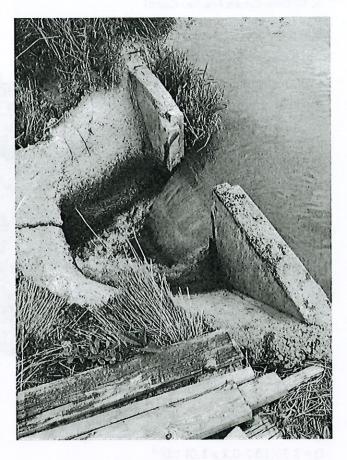
Q=3.33(L-0.2H)H1.5

L = 2.5 feet (length of weir blade)

H= 0.6 feet (height of water above the weir blade)

 $Q = 3.33(2.5-0.2 \times 0.6) 0.6^{1.5}$ 

Q = 3.68 cfs



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### 8. Willow Creek Feeder Canal

### c. Willow Creek Gauge

VOID return flow in Willow Creek enters the WID.

Live flow on 4/2/2018

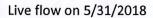
Q=3.33(L-0.2H)H1.5

L = 10.2 feet (length of weir blade)

H = 1.65 feet (height of water above weir blade)

 $Q = 3.33(10.2-0.2 \times 1.65) 1.65^{1.5}$ 

Q = 69.66 cfs

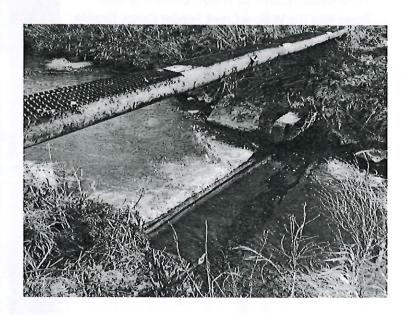


Q=3.33(L-0.2H)H1.5

H = 1.0 feet (height of water above weir blade)

 $Q = 3.33(10.2-0.2 \times 1.0) 1.0^{1.5}$ 

Q = 33.30 cfs





/ Willow Creek Pump Canal

5/31/2018

Capacity based on high water mark in culvert for Lateral 278 JAN 0'9 2019
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	Date	Length of weir blade (ft)	Height above weir blade (ft)	Discharge (cfs)
3a. Kings Drain - VOID weir)	return flow to	Farmers Canal	(Rectangular	10
Capacity based on high water mark	4/3/2018	3	0.9	8.02
Live flow	4/3/2018	3	0.22	1.02
3b.Eagle Pitcher - VOII	return flow t	o Farmers Cana	al (Trapezoidal weir	•)
Capacity based on high water mark	4/3/2018	2	0.75	4.37
Live flow	4/3/2018	2	0.2	0.60
Live flow	5/31/2018	2	0.53	2.60
4a. Shelbys - VOID ret	urn flow to GF	Canal (Trapezo	oidal weir)	
Live flow	4/3/2018	2	0.3	1.11
Live flow at capcity	5/31/2018	2	0.5	2.38
4b. Bench Road - VOID	return flow t	o GF Canal (Tra	pezoidal weir)	
Capacity based on high water mark	4/3/2018	2	2 1.1	7.77
Live flow	4/3/2018	2	0.3	1.11
Live flow	5/31/2018	. 2	0.49	2.31
4c. Henry's Gulch - Ow	yhee District	return flow to (	GF Canal	la de
Capacity based on channel dimensions	9/20/2018			11.4
6a. Hale Road - VOID i Canal (Trapezoidal we		Bully Creek Exc	hange/Willow Cree	k Pump
Capacity based on high water mark	4/2/2018	construction 3	0.8	7.23
Live flow	5/31/2018	3	0.17	0.71
6b. Willow Creek Pum / Willow Creek Pump	•	n fow in Willov	v Creek to Bully Cre	ek Exchange
Capacity based on				

15.86

The particular of the particul				
	Date	Length of weir blade (ft)	Height above weir blade (ft)	Discharge (cfs)
Live flow lateral 278	5/31/2018			0.97
Capacity based on high water mark on rectangular weir for Lateral 455	4/2/2018	5	1.3	23.40
Live flow lateral 455	5/31/2018	5	0.44	4.77
6d. End Owyhee Ditch Willow Creek Pump Ca			to Bully Creek Exc	hange/
Capacity based on 6- inch outflow pipe	5/30/2018		1	3.52
Live flow	5/30/2018	3	0.06	0.15
6d. Belnap farm - Owy Pump Canal at Ray Bel			eek Exchange/Will	ow Creek
Live flow at capacity	5/30/2018	3	0.8	6.77
7a. Morgan Lane - Ow the Nevada Canal	hee District r	eturn flow to the	e Gravity Canal a la	ateral off
Capacity calculated		N MORESHALL	n=Cl : Work	MANUSE CON Y

equation.

7b. Onion Avenue - Owyhee District return flow to Lee Spill a lateral off the Nevada Canal

using Manning flow

Capacity calculated using Manning flow equation.		licha 10 ch	r francisco Printes Signal Sig	40.1
Live flow (measured velocity and cross section area.	109 259 3 99	A Systematics	- Ografia wol-	6.59

7c. Shoestring Ditch - Owyhee District Return flow to the Nevada Canal

Capacity calculated using Manning flow equation.	LLS xeer3 yill	Now Green 1	Z m wei muher 13	50.4
Live flow over rectangular weir	5/30/2018	5.45	0.45	5.39
Live flow through 18 inch headgate	5/30/2018	S JUNEAU WORK		6.09
Total live flow	5/30/2018			11.48

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6.6

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	Date	Length of weir blade (ft)	Height above weir blade (ft)	Discharge (cfs)
7d. Corn Drain - Owyh	ee District r	eturn flow to the	Nevada Canal	
Capacity calculated using Manning flow equation.				1.6
8a. 430 Lateral -VOID (rectangular weir)	return flow	in Willow Creek	to Willow Creek Fee	eder Canal

8b. Dry Gulch -VOID return flow in Willow Creek to Willow Creek Feeder Canal (rectangular weir)

4/2/2018

Capacity calculated

from high water mark.

Live flow	5/31/2018	2.5	0.6	3.68

6.8

0.6

10.34

8c. Willow Creek -VOID water in Willow Creek to Willow Creek Feeder Canal (rectangular weir)

Live flow	4/2/2018	10.2	1.65	69.66
Live flow	5/31/2018	10.2	1	33.30

	•	,

OWRD If Irrigation # If Irrigation # Supplemental Twp Rng Mer Sec QQ **Gov Lot** DLC Use **Primary Acres** Acres T17S **SWSW** 2.9 **R44E** 24 Irrigation T17S **R44E** 24 **SWSW** 0.2 Irrigation T17S **R44E** 24 **SWSE** Irrigation 14.4 T17S **R44E** 24 **SESW** Irrigation 5.3 **R44E T17S** 24 **SESW** Irrigation 9.5 T17S **R44E** 25 NWNE Irrigation 31.1 T17S **R44E** 25 **NWNE** 6.5 Irrigation T17S **R44E** 25 SWNE Irrigation 23.8 T17S **R44E** 25 SWNE Irrigation 5.5 T17S **R44E** 25 **SWNE** Irrigation 4.1 , T17S R44E 25 **SWNE** Irrigation 0.9 T17S **R44E** 25 NENW Irrigation 7.2 T17S **R44E** 25 **NENW** 12.2 Irrigation T17S **R44E** 25 **NENW** Irrigation 16 **T17S R44E** 25 **NWNW** Irrigation 2.7 T17S R44E 25 SENW Irrigation 17.5 T17S **R44E** 25 **SENW** 2.9 Irrigation **T17S** R44E 25 **SENW** Irrigation 6.3 **T17S R44E** 25 SENW 2.6 Irrigation T17S **R44E** 25 **SENW** 1.7 Irrigation T17S **R44E** 25 **NESW** 33.1 Irrigation T17S R44E 25 **NWSW** 0.1 Irrigation T17S **R44E** 25 **SWSW** Irrigation 5.7 T17S **R44E** 25 **SWSW** Irrigation 5.1 R44E **T17S** 25 NESE 30.2 Irrigation T17S **R44E** 25 NESE 4.6 Irrigation T17S R44E 25 **NWSE** Irrigation 6.4 **T17S R44E** 25 **NWSE** 16.9 Irrigation T17S **R44E** 25 **NWSE** 9.2 Irrigation T17S **R44E** 25 **SWSE** 1.6 Irrigation T17S **R44E** 25 **SWSE** 1.3 Irrigation T17S **R44E** 25 SESE Irrigation 14.3 **T17S R44E** 25 SESE Irrigation 11.2 T17S **R44E** 25 4.8 SESE Irrigation T17S **R44E** 25 **SESW** Irrigation 37.5 **T17S R44E** 36 NENE 15.4 Irrigation T17S R44E 36 NENE Irrigation 7.8 **T17S** R44E 36 **NWNE** 13 Irrigation **T17S R44E** 36 **SWNE** 20.4 Irrigation **T17S** R44E 36 SENE Irrigation 0.4 T17S R44E 36 NENW 25.4 Irrigation T17S **R44E NENW** 36 Irrigation 1.2 **T17S** R44E 36 **NENW** Irrigation 3.3 **T17S R44E** 36 NWNW Irrigation 6.1 36 **T17S R44E SENW** 10.4 Irrigation **T17S R44E** 36 SENW . Irrigation 5.6 T17S **R44E** 36 **NESW** Irrigation 8.8 **T17S R44E** 36 **NWSE** Irrigation 10 T17S R45E 30 **NWSW** 3 Irrigation 0.6 T17S R45E 30 **NWSW** 3 6.4 Irrigation T17S **NWSW** R45E 30 3 Irrigation 0.6

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Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T17S	R45E		30	SWSW	4		Irrigation		5.6
T17S	R45E		30	SWSW	4		Irrigation		17.7
T17S	R45E		.30	SWSW	4		Irrigation		3.1
T17S	R45E		31	NWNW	1		Irrigation		30.2
T17S	R45E		31	NWNW	1	14231	Irrigation		0.8
T17S	R45E		31	NWNW	1		Irrigation		3.1
T17S	R45E		31	SWNW	2		Irrigation		22.9
T18S	R43E		34	SWSW		3.1397	Irrigation		5.4
T18S	R43E		34	SWSW			Irrigation		4.2
T18S	R43E		34	SWSW		3847	Irrigation		0.1
T18S	R43E		34	SWSE			Irrigation		7.7
T18S	R43E		34	SESE		100737	Irrigation		11.9
T18S	R43E		34	SESE		Mysh	Irrigation		5.3
T18S	R43E		34	SESE		The state of	Irrigation		1.4
T18S	R43E		34	SESE		1778161	Irrigation		1.4
T18S	R43E		34	SESW		1,113	Irrigation		7
T18S	R43E		34	SESW		W/B2	Irrigation		0.2
T18S	R43E		34	SESW		-	Irrigation		8
T18S	R43E		34	SESW		43/43	Irrigation		2.4
T18S	R43E		35	SWSW		10000	Irrigation		29.1
T18S	R43E		35	SWSE		0,775	Irrigation	<del>†                                    </del>	0.1
T18S	R43E		35	SESW					0.9
			1	NENE			Irrigation		5.2
T18S	R44E						Irrigation		1.5
T18S	R44E		1	SWNE			Irrigation		
T18S	R44E		1	SENE			Irrigation		27.7
T18S	R44E		1	NESE			Irrigation		16.6
T18S	R44E		1	NESE			Irrigation		4.4
T18S	R44E		1	NESE			Irrigation		3.2
T18S	R44E		1	SESE			Irrigation		5.9
T18S	R44E		25	NENE			Irrigation		2.1
T18S	R44E		25	SWNE			Irrigation		1
T18S	R44E		25	SENE		123	Irrigation		29.2
T18S	R44E		25	NESW		1 344	Irrigation		2.3
T18S	R44E		25	SWSW			Irrigation		0.5
T18S	R44E		25	NESE		L William	Irrigation		1.2
T18S	R44E		25	NESE		3/177	Irrigation		13.6
T18S	R44E		25	NESE		1 1/11/11	Irrigation		19.7
T18S	R44E		25	NESE		<b>ENWY</b>	Irrigation		0.5
T18S	R44E		25	NESE		1 1000	Irrigation		0.6
T18S	R44E		25	NWSE		1 2032	Irrigation		2.1
T18S	R44E		25	NWSE		I WEEK	Irrigation	1 3	21.8
T18S	R44E		25	NWSE		WHO	Irrigation	1 3	2.7
T18S	R44E		25	NWSE		15(0.3)	Irrigation		1.4
T18S	R44E		25	SWSE		WILM	Irrigation	1 7	34.9
T18S	R44E		25	SESE		1///30	Irrigation		6.9
T18S	R44E		25	SESE		WM3.	Irrigation		13.2
T18S	R44E		25	SESE		19231	Irrigation		10
T18S	R44E		25	SESE		12167	Irrigation		0.6
T18S	R44E		25	SESW		1/200	Irrigation		7.2
T18S	R44E		25	SESW	7	1007007	Irrigation		21.4
T18S	R44E		25	SESW			Irrigation		0.4

						OWRD		If Irrigation #	If Irrigation # Supplementa
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T18S	R44E		35	NENE		W3.7	Irrigation		1.1
T18S	R44E		35	SENE		1000	Irrigation		2
T18S	R44E		35	SENE		Arrestor	Irrigation		1.2
T18S	R44E		35	SENE			Irrigation		0.4
T18S	R44E		35	SENE		100	Irrigation	1 3	0.3
T18S	R44E		35	SENE	,	TOP :	Irrigation		1.7
T18S	R44E		35	SENE		1287	Irrigation	1 3	0.4
T18S	R44E		35	NESE		1 3 9 2	Irrigation		32.1
T18S	R44E		35	NESE		1 33 4	Irrigation	3	0.9
T18S	R44E		35	NESE		1 2000	Irrigation		3
T18S	R44E		35	NWSE		3330	Irrigation		7
T18S	R44E		35	NWSE		1-	Irrigation		0.1
T18S	R44E		35	SWSE		1 30 37	Irrigation		3.7
T18S	R44E		35	SWSE	1	335	Irrigation		0.4
T18S	R44E		35	SWSE		2532	Irrigation		20
T18S	R44E		35	SWSE	-	1 1/242	Irrigation	1 1	4.8
T18S	R44E		35	SESE		111000	Irrigation		16.8
T18S	R44E		35	SESE			Irrigation		14.6
T18S	R44E		35	SESE	7		Irrigation		1.8
T18S	R44E		35	SESW		1 2011-2	Irrigation		4.8
T18S	R44E		36	NENE		193	Irrigation		0.6
T18S	R44E		36	NENE	-	100000	Irrigation		5.2
T18S	R44E		36	NENE		T Williams	Irrigation		14.4
T18S	R44E		36	NENE			Irrigation		7.6
T18S	R44E		36	NWNE	7 8	7 194075	Irrigation	+ + + + +	4.8
T18S	R44E		36	NWNE	7		Irrigation		10.6
T18S	R44E		36	NWNE	-	11000	Irrigation	1 1	11.2
T18S	R44E		36	NWNE		20030	Irrigation		0.2
T18S	R44E		36	SWNE		179136	Irrigation		12.8
T18S	R44E		36	SWNE		1 179 544	Irrigation		24.9
T18S	R44E	-	36	SENE	-	1 10000			2.6
					-		Irrigation		6.3
T18S	R44E		36	SENE	1	WE-VE-	Irrigation		
T18S	R44E		36	SENE	1 9	WCHE	Irrigation	1 3	16.6
T18S	R44E		36	SENE	3 9	1 100 100 10	Irrigation	N 19	7.7
T18S	R44E		36	SENE	1	1 (2)(3)(1)	Irrigation		3.1
T18S	R44E		36	NENW			Irrigation		23.9
T18S	R44E		36	NENW		T MARKE	Irrigation	1 10	6.9
T18S	R44E		36	NENW	-	N.C.W.C	Irrigation		0.1
T18S	R44E		36	NWNW			Irrigation		26.5
T18S	R44E		36	NWNW		1 10 11	Irrigation		2.9
T18S	R44E		36	SWNW		3686	Irrigation		31.2
T18S	R44E		36	SWNW			Irrigation		1.1
T18S	R44E		36	SWNW		16.424	Irrigation		1
T18S	R44E		36	SENW		THE A	Irrigation	1	4.9
T18S	R44E		36	SENW		West.	Irrigation		2.3
T18S	R44E		36	SENW		Meas	Irrigation		21.1
T18S	R44E		36	NESW		388.94	Irrigation	1 1	18.3
T18S	R44E		36	NESW		140/214	Irrigation		18.7
T18S	R44E		36	NESW			Irrigation		0.4
T18S	R44E		36	NWSW		1919	Irrigation		13.8
T18S	R44E		36	NWSW		3000	Irrigation		4.9

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Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T18S	R44E		36	NWSW		1000	Irrigation		0.8
T18S	R44E		36	NWSW			Irrigation		12.7
T18S	R44E		36	SWSW		3832	Irrigation		14.4
T18S	R44E		36	SWSW		3/1/2	Irrigation		17.5
T18S	R44E		36	SWSW			Irrigation		3
T18S	R44E		36	NESE		1993	Irrigation		17.6
T18S	R44E		36	NESE		100	Irrigation		14.1
T18S	R44E		36	NWSE		5239	Irrigation		18.9
T18S	R44E		36	NWSE		32.14	Irrigation	1 3	16.3
T18S	R44E		36	NWSE		3234	Irrigation		1.5
T18S	R44E		36	SWSE	7		Irrigation		16.6
T18S	R44E		36	SWSE		12 Will	Irrigation		17
T18S	R44E		36	SESE		35.415	Irrigation	3	24.1
T18S	R44E		36	SESE		36.172	Irrigation	31	1.4
T18S	R44E		36	SESW		32442	Irrigation		16.8
T18S	R44E		36	SESW		32112	Irrigation		16.6
T18S	R44E		36	SESW		1232	Irrigation	31	1.3
T18S	R45E		6	NWNE	2	3838	Irrigation		34.5
T18S	R45E		6	NWNE	2	3132	Irrigation		0.4
T18S	R45E		6	SWNE		THE STREET	Irrigation		32.4
T18S	R45E		6	NENW	3	311314	Irrigation	1	38.5
T18S	R45E		6	NWNW	4	3,702	Irrigation		17
T18S	R45E		6	NWNW	4	1 1119	Irrigation		16.8
T18S	R45E		6	SWNW	5		Irrigation		27.6
T18S	R45E		6	SWNW	5		Irrigation		3.4
T18S	R45E		6	SWNW	5		Irrigation		0.6
T18S	R45E		6	SENW	<del>                                     </del>	1,000	Irrigation	<del></del>	33.8
T18S	R45E		6	SENW	<del>                                     </del>	London	Irrigation	-	3.8
T18S	R45E		6	NESW			Irrigation		18.1
T18S	R45E		6	NESW			Irrigation		14.9
T18S	R45E		6	NESW			_		2.7
T18S	R45E		6	NWSW	6		Irrigation		5
							Irrigation		
T18S	R45E		6	NWSW	6		Irrigation		8.8
T18S	R45E		6	NWSW	6		Irrigation		12.2
T18S	R45E		6	NWSW	6	_	Irrigation		2.8
T18S	R45E		6	SWSW	7		Irrigation		28
T18S	R45E		6	SWSW	7		Irrigation		4.5
T18S	R45E		6	SWSW	7		Irrigation		0.8
T18S	R45E		6	NWSE			Irrigation		37.6
T18S	R45E		6	NWSE		L VIIII	Irrigation		0.6
T18S	R45E		6	SWSE			Irrigation		9.2
T18S	R45E		6	SWSE			Irrigation		20.4
T18S	R45E		6	SWSE		LYMP	Irrigation		5.2
T18S	R45E		6	SESW		170	Irrigation		1.1
T18S	R45E		6	SESW		1/16/72	Irrigation		14.3
T18S	R45E		6	SESW		, 13	Irrigation	1 31	12
T18S	R45E		7	NWNE		i - Walik	Irrigation		21.8
T18S	R45E		7	NWNE			Irrigation		7.1
T18S	R45E		7	SWNE		1_020	Irrigation		3.6
T18S	R45E		7	SWNE			Irrigation		22.8
T18S	R45E		7	SWNE			Irrigation	-	0.1

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Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	If Irrigation # Primary Acres	If Irrigation # Supplemental Acres
T18S	R45E		7	SWNE			Irrigation		0.2
T18S	R45E		7	SENE			Irrigation		0.9
T18S	R45E		7	SENE			Irrigation		7.6
T18S	R45E		7	NENW	+ -	7 3 4	Irrigation		1.9
T18S	R45E		7	NENW			Irrigation		13.7
T18S	R45E		7	NENW	7	1 3	Irrigation		3.4
T18S	R45E		7	NWNW	1	1	Irrigation		4.8
T18S	R45E		7	NWNW	1	-	Irrigation		17.1
T18S	R45E		7	NWNW	1	100	Irrigation		8.2
T18S	R45E		7	NWNW	1	4395	Irrigation		1.3
T18S	R45E		7	SWNW	2		Irrigation		2.5
T18S	R45E		7	SWNW	2		Irrigation		0.5
T18S	R45E		7	SENW	-	-	Irrigation		14.9
T18S	R45E		7	SENW		1 11 00	Irrigation		18.9
T18S	R45E		7	SENW			Irrigation	<del></del>	0.8
T18S	R45E		7	SENW			Irrigation		0.1
			7	NESW					3.2
T18S	R45E		7				Irrigation		8.8
T185	R45E			NESW	-	1	Irrigation		9
T18S	R45E		7	NESE		_	Irrigation		11.7
T185	R45E		7	NESE	-	4 9 6 6	Irrigation		4.1
T18S	R45E		7	NESE			Irrigation		
T18S	R45E		7	NESE	-		Irrigation		7.4
T18S	R45E		7	NWSE			Irrigation		3.3
T18S	R45E		7	NWSE			Irrigation		1 100
T18S	R45E		7	NWSE			Irrigation		16.8
T18S	R45E		7	NWSE			Irrigation		4.2
T18S	R45E		7	SESE		4 300	Irrigation		9.3
T18S	R45E		7	SESE		1 11	Irrigation		11.2
T18S	R45E		8	SWNW			Irrigation		12.4
T18S	R45E		8	SENW			Irrigation		6.8
T18S	R45E		8	NESW		1 42	Irrigation		37.2
T18S	R45E		8	NWSW			Irrigation	1 3	36
T18S	R45E		8	NWSE		J. YEA	Irrigation		6.6
T18S	R45E		8	SWSE		West	Irrigation		32.1
T18S	R45E		8	SESW		West	Irrigation		10.2
T18S	R45E		12	SWSE		1 198	Irrigation		6.9
T18S	R45E		12	SWSE		WEW	Irrigation		0.4
T18S	R45E		12	SESE		1 12-1	Irrigation		15.3
T18S	R45E		12	SESW	-	N.S.A.	Irrigation		0.3
T18S	R45E		13	NENE		1 1977	Irrigation		15.1
T18S	R45E		13	NENE		1 181	Irrigation	1 3	0.7
T18S	R45E		13	NENE		L Halv	Irrigation		10.3
T18S	R45E		13	NWNE		32,30	Irrigation		34.8
T18S	R45E		13	NWNE		133	Irrigation		4.2
T18S	R45E		13	SWNE		A BETA	Irrigation	4 3	29.8
T18S	R45E		13	SENE		3.4	Irrigation		34.4
T18S	R45E		13	NENW			Irrigation		17.1
T18S	R45E		13	SWNW		3 3870	Irrigation	1 3	3.3
T18S	R45E		13	NESW		30776	Irrigation		1.2
T18S	R45E		13	NESW		100	Irrigation		0.9
T18S	R45E		13	NWSW	According to	32/6	Irrigation		22

				OWRD				If Irrigation #	If Irrigation # Supplemental
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T18S	R45E		13	NWSW		300	Irrigation		11.4
T18S	R45E		13	SWSW		1/136	Irrigation		8.5
T18S	R45E		13	SWSW		11436	Irrigation		9.4
T18S	R45E		13	NESE		Win	Irrigation		0.5
T18S	R45E		13	NESE		1000	Irrigation		1.6
T18S	R45E		13	NWSE		1913	Irrigation		5.5
T18S	R45E		13	NWSE	1 1 -	WIIW	Irrigation		3.5
T18S	R45E		13	SWSE		90.00	Irrigation	1 3	1.3
T18S	R45E		13	SWSE	1	100 47	Irrigation	1 3	0.7
T18S	R45E		13	SWSE		WHAL	Irrigation		1.9
T18S	R45E		13	SWSE		William	Irrigation		5.3
T18S	R45E		13	SWSE		I Way to	Irrigation		20.4
T18S	R45E		13	SWSE			Irrigation		0.1
T18S	R45E		13	SWSE			Irrigation		1
T18S	R45E		13	SESE		V- 1	Irrigation		11.6
T18S	R45E		13	SESE			Irrigation		4.3
T18S	R45E		13	SESE			Irrigation		13.8
T18S	R45E		13	SESE			Irrigation		0.2
T18S	R45E		13	SESE		32.19	Irrigation		1.8
T18S	R45E		13	SESW		3-71	Irrigation		8.4
T18S	R45E		13	SESW			Irrigation		11.5
T18S	R45E		13	SESW	· ·	1 3	Irrigation	· · · · · · · · · · · · · · · · · · ·	20.1
T18S	R45E		13	SESW	<u> </u>		Irrigation		2.9
T18S	R45E		14	SWNE			Irrigation		17.4
T18S	R45E		14	SWNE		111111	Irrigation		0.8
T18S	R45E		14	SENE		32.47	Irrigation		14.9
T18S	R45E		14	SENE		1 223	Irrigation	1 1 3	5.2
T18S	R45E		14	SENE			Irrigation	1 1 3	8.7
T18S	R45E		14	SWNW		1 107 10	Irrigation		28.6
T18S	R45E		14	SENW		NE S	Irrigation		19.3
T18S	R45E		14	NESW		WEST	Irrigation		11.3
T18S	R45E		14	NESW			Irrigation	1 3	4.2
T18S	R45E		14	NESW	,	37.47	Irrigation	T	19.9
T18S	R45E		14	NESW			Irrigation		0.4
T18S	R45E		14	NESW			Irrigation		0.6
T18S	R45E		14	NWSW			Irrigation		10.2
T18S	R45E		14	NWSW		T 32W	Irrigation		13.8
T18S	R45E		14	NWSW		323	Irrigation	T	12.2
T18S	R45E		14	SWSW		10/27	Irrigation		18.3
T18S	R45E		14	SWSW		31/37/	Irrigation		17.4
T18S	R45E		14	NESE		I ikus	Irrigation	3	18.3
T18S	R45E		14	NESE		341146	Irrigation		6.5
T18S	R45E		14	NESE		13999	Irrigation		7.3
T18S	R45E		14	NESE			Irrigation		1.1
T18S	R45E		14	NWSE		T. Butter	Irrigation		15.9
T18S	R45E		14	NWSE		30.32	Irrigation		11.1
T18S	R45E		14	NWSE			Irrigation		4.1
T18S	R45E		14	NWSE		LWWW	Irrigation		0.4
T18S	R45E		14	NWSE		Was a	Irrigation		0.8
T18S	R45E		14	NWSE		WSSE	Irrigation		1
T18S	R45E		14	NWSE			Irrigation	T T	0.3

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		Ol	VRD		OWRD			If Irrigation #	If Irrigation # Supplementa
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T18S	R45E		14	SWSE			Irrigation		16.1
T18S	R45E		14	SWSE			Irrigation		12.5
T18S	R45E		14	SWSE		T MAKE	Irrigation		1.4
T18S	R45E		14	SWSE	1	1-1-1-1	Irrigation	1 1 1	1.2
T185	R45E		14	SWSE		1737	Irrigation		4.6
T18S	R45E		14	SESE		42	Irrigation		10.7
T18S	R45E		14	SESE		1 3 3 3 6	Irrigation		9.2
T18S	R45E		14	SESE		1	Irrigation		16.6
T18S	R45E		14	SESW		1 3234	Irrigation		15.5
T18S	R45E		14	SESW		1794	Irrigation		19.4
T18S	R45E		14	SESW		TRUM	Irrigation		0.7
T185	R45E		15	SWNE	1		Irrigation		11.3
T18S	R45E		15	SENE	· · ·	T 3/3/1	Irrigation	T 1 3	29.3
T18S	R45E		15	SWNW		3200	Irrigation		0.5
T18S	R45E		15	SWNW		420.	Irrigation		3.1
T18S	R45E	-	15	SWNW		1	Irrigation	1	0.5
T18S	R45E		15	SENW	1	7	Irrigation		14
T18S	R45E		15	SENW			Irrigation		0.2
T18S	R45E		15	NESW	1	1 1	Irrigation		2
T18S	R45E		15	NESW		123.00	Irrigation	7 1 9	25.1
T18S	R45E		15	NESW		7 36.0	Irrigation		7
T18S	R45E		15	NWSW	1	314	Irrigation		32.2
T18S	R45E		15	NWSW	+		Irrigation		2.1
T18S	R45E		15	NWSW		1 300	Irrigation		0.5
T18S	R45E		15	SWSW		36.5	Irrigation		1.1
T18S	R45E		15	SWSW		71.5	Irrigation		9.8
T18S	R45E		15	SWSW		1 1551	Irrigation		13.4
T18S	R45E		15	SWSW		12.00	Irrigation		9
T18S	R45E		15	SWSW		1 4464	Irrigation		1.1
T18S	R45E		15	NESE		1 18.0	Irrigation		17.8
T18S	R45E		15	NESE		1	Irrigation		17.6
T18S	R45E		15	NESE	+	120	Irrigation		0.5
T18S	R45E		15	NESE			Irrigation	1 7 7	0.6
T18S	R45E		15	NESE		7 000	Irrigation	+	0.2
T18S	R45E		15	NWSE	1		Irrigation		7.1
T18S	R45E		15	NWSE			Irrigation		10.1
T18S	R45E		15	NWSE			Irrigation		3.8
T18S	R45E		15	NWSE		3 336	Irrigation		7.9
T18S	R45E		15	NWSE		1 4 5	Irrigation	1	2.5
T18S	R45E		15	NWSE			Irrigation		2
T18S	R45E		15	NWSE		T John	Irrigation		0.7
T18S	R45E		15	SWSE			Irrigation		2.1
T18S	R45E		15	SWSE		1	Irrigation		8.4
			15	SWSE		1 19 5	Irrigation		15.7
T18S	R45E		15	SWSE		1 60 61	Irrigation		10
T18S	R45E		15	SWSE				-	0.2
T18S	R45E			_		+	Irrigation		1.5
T18S	R45E	-	15	SESE		-	Irrigation		7.3
T18S	R45E		15	SESE		+	Irrigation		9.5
T18S	R45E		15	SESE	-		Irrigation		
T18S	R45E R45E		15 15	SESE			Irrigation Irrigation		13.8 19.3

					OW	RD		If Irrigation #	If Irrigation # Supplementa
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T18S	R45E		15	SESW			Irrigation	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	18
T18S	R45E		15	SESW			Irrigation		0.1
T18S	R45E		16	SWNW			Irrigation		13
T18S	R45E		16	NESW		3200	Irrigation		15.4
T18S	R45E		16	NWSW		7 900	Irrigation		10.8
T18S	R45E		16	NWSW			Irrigation		0.3
T18S	R45E		16	NESE			Irrigation		1.7
T18S	R45E		16	NESE			Irrigation	<del></del>	28
T18S	R45E		16	NESE		1 10072	Irrigation		0.5
T18S	R45E		16	NWSE		1000	Irrigation	1	3.7
T18S	R45E		16	NWSE	-	1	Irrigation		0.4
T18S	R45E		16	NWSE			Irrigation		6.8
T18S	R45E		16	SWSE			Irrigation		1.6
T18S	R45E		16	SWSE			Irrigation		2.2
T18S	R45E		16	SWSE			Irrigation		19.5
T18S	R45E		16	SWSE			Irrigation		7.6
T18S	R45E		16	SESE					
T18S	R45E		16				Irrigation		17.6
				SESE			Irrigation		6.9
T18S	R45E		16	SESE			Irrigation		2.1
T18S	R45E		16	SESW			Irrigation		1.1
T18S	R45E		17	NENE			Irrigation		14.4
T18S	R45E		17	NENE	-		Irrigation		8.3
T18S	R45E		. 17	NENE		10/2/07	Irrigation		0.6
T18S	R45E		17	NENE			Irrigation		1.7
T18S	R45E		17	SENE		11611	Irrigation		11.9
T18S	R45E		17	SENE		1 44-34-3	Irrigation		6.7
T18S	R45E		17	NWSW			Irrigation		3.2
T18S	R45E		17	NWSW			Irrigation		3.4
T18S	R45E		17	NWSW			Irrigation		1.6
T18S	R45E		17	NWSW			Irrigation		2.9
T18S	R45E		17	NWSW			Irrigation		6
T18S	R45E		17	SWSW			Irrigation		1.3
T18S	R45E		17	SWSW			Irrigation		1.2
T18S	R45E		17	SWSW		1,369.	Irrigation	1	1.2
T18S	R45E		17	SWSW		1 1 1 1	Irrigation		1.2
T18S	R45E		17	SWSW		1377	Irrigation		0.3
T18S	R45E		17	SWSW			Irrigation		0.9
T18S	R45E		17	SWSW			Irrigation		9.4
T18S	R45E		17	SWSW		1747	Irrigation		5.1
T18S	R45E		17	SWSW		1.3300	Irrigation	1	0.4
T18S	R45E		17	SWSW		1 320	Irrigation		0.9
T18S	R45E		17	SWSW			Irrigation		0.9
T18S	R45E		17	SWSW			Irrigation		0.9
T18S	R45E		17	SWSW			Irrigation		0.9
T18S	R45E		17	SWSW			Irrigation		0.8
T18S	R45E		17	swsw			Irrigation	1	0.8
T18S	R45E		17	SWSW		1777	Irrigation		1
T18S	R45E		17	SWSW			Irrigation		1
T18S	R45E		17	SWSW			Irrigation		0.9
T18S	R45E		17	swsw		3235	Irrigation		0.1
T18S	R45E		17	SESW		4.020	Irrigation		3.7

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				OW	CWRD			If Irrigation #	If Irrigation # Supplementa
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T18S	R45E		17	SESW		-14-07	Irrigation		1.9
T18S	R45E		18	NENE		1 11111	Irrigation	34	5.7
T18S	R45E		18	NENE			Irrigation		20
T18S	R45E		18	NENE			Irrigation		2.1
T18S	R45E		18	NWNE		Shirt s	Irrigation	j 54	0.6
T18S	R45E		18	SENE		i Manag	Irrigation		1.2
T18S	R45E		18	NESE			Irrigation	1 1/2	11.7
T18S	R45E		18	NESE	1	1000	Irrigation		5.9
T18S	R45E		18	SESE		L WY	Irrigation		2.2
T18S	R45E		18	SESE		· Visite I	Irrigation		0.9
T18S	R45E		18	SESE		1. V. 635	Irrigation		0.3
T18S	R45E		18	SESE			Irrigation	4	0.2
T18S	R45E		19	NENE			Irrigation	4	2.1
T18S	R45E		19	NENE			Irrigation		0.5
T18S	R45E		19	SENE		AND IT	Irrigation		2.4
T18S	R45E		19	SENE			Irrigation	1 1	2
T18S	R45E		19	SENE			Irrigation		2.3
T18S	R45E		19	SENE			Irrigation		2.5
T18S	R45E		19	SENE		T WAR	Irrigation		0.1
T18S	R45E		19	SENE		1 7 7 19 7	Irrigation		0.1
T18S	R45E		19	SENE		T Mean	Irrigation	1 3	4.9
T18S	R45E		19	SENE			Irrigation		1.1
T18S	R45E		19	SENE		A 100	Irrigation		0.2
T18S	R45E		19	SENE			Irrigation		1.1
T18S	R45E		19	SENE		A PARTY	Irrigation		0.1
T18S	R45E		19	SENW	1		Irrigation		0.6
T18S	R45E		19	NESW			Irrigation		2.8
T18S	R45E		19	SWSW	4		Irrigation		9.4
T18S	R45E		19	SWSW	4		Irrigation		8.2
T18S	R45E		19	SWSW	4	V 71 71 A	Irrigation		1.5
T18S	R45E		19	NESE		1 Nate	Irrigation		4.8
T18S	R45E		19	NESE			Irrigation	4	1.2
T18S	R45E		19	NESE		38.00	Irrigation	1 2	3.9
T18S	R45E		19	NWSE			Irrigation		2.3
T18S	R45E		19	NWSE		- V	Irrigation		2.1
T18S	R45E		19	NWSE		1 1000	Irrigation		3.1
T18S	R45E		19	NWSE	-	73 4 63	Irrigation		0.5
T18S	R45E		19	NWSE		175	Irrigation		
T18S	R45E		19	NWSE		d deal	Irrigation		0.4
T18S	R45E		19	SWSE		1 100	Irrigation		
T18S	R45E		19	SWSE			Irrigation		0.2
T185	R45E		19	SWSE	+		Irrigation		0.1
T18S	R45E		19	SESW			Irrigation		10.4
T185	R45E		19	SESW		-	Irrigation		0.1
T18S	R45E		19	SESW		+-	Irrigation		2.1
T18S	R45E		19	SESW	-	133	Irrigation	4	
T18S	R45E		19	SESW		4 - 5	Irrigation		0.2
T18S	R45E		19	SESW		1000	Irrigation		
T18S	R45E		20	NENE		T WAY	Irrigation		18.8
T18S	R45E		20	NENE		1	Irrigation		9.7

Twn	Dna	Mos	Soo	00	1:3	O	WRD	If Irrigation #	If Irrigation # Supplementa
Twp T18S	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
	R45E		20	NWNE		97	Irrigation		1.8
T18S	R45E		20	NWNE		386.1	Irrigation		1.5
T18S	R45E		20	NWNE			Irrigation		11.4
T18S	R45E		20	NWNE		18-1	Irrigation		6.5
T18S	R45E		20	SWNE			Irrigation		0.3
T18S	R45E		20	SWNE			Irrigation		32.5
T18S	R45E		20	SENE		136	Irrigation		9.5
T18S	R45E		20	NENW		32	Irrigation		4.5
T18S	R45E		20	NENW			Irrigation		11.2
T185	R45E		20	NENW			Irrigation		0.7
T18S	R45E		20	NENW			Irrigation		1.4
T18S	R45E		20	NENW			Irrigation		1.5
T18S	R45E		20	NENW			Irrigation		0.3
T18S	R45E		20	NENW			Irrigation		0.4
T18S	R45E		20	NENW		- 3	Irrigation		0.4
T18S	R45E		20	NWNW		36	Irrigation		0.2
T18S	R45E		20	NWNW		110	Irrigation	1 2	0.6
T18S	R45E		20	NWNW		36.	Irrigation	1 3	5.4
T18S	R45E		20	NWNW			Irrigation		3.5
T18S	R45E		20	NWNW			Irrigation	34	3.1
T18S	R45E		20	NWNW		37	Irrigation		2.9
T18S	R45E		20	NWNW			Irrigation	1 1	0.4
T18S	R45E		20	NWNW		38.	Irrigation		0.3
T18S	R45E		20	NWNW			Irrigation		5.2
T18S	R45E		20	NWNW			Irrigation		2.1
T18S	R45E		20	NWNW		341	Irrigation	1 2	0.7
T18S	R45E		20	SWNW			Irrigation		4.3
T185	R45E		20	SWNW			Irrigation		1
T18S	R45E		20	SWNW			Irrigation	J	4
T18S	R45E		20	SWNW		- 46	Irrigation		0.7
T18S	R45E		20	SWNW		3 1	Irrigation	36	0.2
T18S	R45E		20	SWNW		3201	Irrigation	<u> </u>	0.2
T18S	R45E		20	SENW			Irrigation		10.9
T18S	R45E		20	NWSW		189-1	Irrigation	36	0.8
T18S	R45E		20	NWSW			Irrigation		0.8
T18S	R45E		21	NESW			Irrigation	4	0.7
T18S	R45E		21	NESW			Irrigation	<u> </u>	1
T18S	R45E		21	NESW			Irrigation		0.3
T18S	R45E		21	NESW		120	Irrigation		0.4
T18S	R45E		21	NESW			Irrigation		0.5
T18S	R45E		21	NESW			Irrigation		0.3
T18S	R45E		21	NWSW			Irrigation		1
T18S	R45E		21	NESE			Irrigation		5.6
T18S	R45E		21	SESE			Irrigation		3.8
T18S	R45E		21	SESE		- 12	Irrigation		7.4
T18S	R45E		21	SESE		11/2	Irrigation	1	5.2
T18S	R45E		21	SESE		111	Irrigation		1.6
T18S	R45E		21	SESE		12	Irrigation	1 3	0.6
T18S	R45E		22	NENW		1/2/4	Irrigation	1 18	10.6
T18S	R45E		22	NENW			Irrigation		0.6

					O	NRD		If Irrigation #	If Irrigation # Supplementa
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T18S	R45E		22	NENW		1	Irrigation	7	0.5
T18S	R45E		22	NWNW		1	Irrigation		14
T18S	R45E		22	NWNW		1020	Irrigation		11.1
T18S	R45E		22	NWNW			Irrigation		0.8
T18S	R45E		22	SWNW		1 7 5	Irrigation		23.5
T18S	R45E		22	SWNW		1112220	Irrigation		12
T18S	R45E		22	SENW		100	Irrigation		11.9
T18S	R45E		22	SENW		T works	Irrigation	-	24.1
T18S	R45E		22	NESW			Irrigation		1.7
T18S	R45E		22	NESW	-	7 9 90 10	Irrigation		1.1
T18S	R45E		22	NESW		1 20.00	Irrigation		4.7
T18S	R45E		22	NESW		3236	Irrigation		5
T18S	R45E		22	NWSW		1	Irrigation		0.6
T18S	R45E		22	NWSW		-	Irrigation		10
T18S	R45E		22	NWSW		1	Irrigation		4.4
T18S	R45E		22	NWSW		-			3.4
T18S	R45E		22	NWSW		-	Irrigation		2.7
T18S	R45E		22	SWSW			Irrigation		2.7
			22		-	1	Irrigation		10.2
T18S	R45E			SWSW			Irrigation		5.6
T18S	R45E		22	SWSW		4 200	Irrigation	<del>                                     </del>	3.8
T18S	R45E		22	SWSW		25000	Irrigation		
T185	R45E		22	SWSW		1 29	Irrigation		7.4
T18S	R45E		22	SWSW		-	Irrigation		0.5
T18S	R45E		22	SWSW		3000	Irrigation		0.4
T18S	R45E		22	NESE		1 100	Irrigation		22.6
T185	R45E		22	NESE			Irrigation		1
T18S	R45E		22	NESE			Irrigation	1 1	6.1
T185	R45E		22	NWSE			Irrigation		14.5
T18S	R45E		22	NWSE		- 120	Irrigation		5.9
T18S	R45E		22	NWSE			Irrigation		1.8
T18S	R45E		22	NWSE			Irrigation		4
T18S	R45E		22	SWSE		4 35.77	Irrigation		7.3
T18S	R45E		22	SWSE			Irrigation		7.8
T18S	R45E		22	SWSE			Irrigation		5.7
T18S	R45E		22	SWSE		1 1000	Irrigation		9.2
T18S	R45E		22	SESE		3894	Irrigation	1 3	4.7
T18S	R45E		22	SESE		- 100	Irrigation		11.9
T18S	R45E		22	SESE		-	Irrigation	<del>-</del>	4
T18S	R45E		22	SESE			Irrigation	1 1	0.3
T18S	R45E		22	SESE		4 3036	Irrigation	1 3	2.3
T18S	R45E		22	SESW			Irrigation	1 3	5.8
T18S	R45E		22	SESW			Irrigation	1 38	2.7
T18S	R45E		22	SESW		9715 V	Irrigation		2.7
T18S	R45E		22	SESW			Irrigation	1 - 1 - 3	7.5
T18S	R45E		22	SESW		1	Irrigation	1.3	13.1
T18S	R45E		23	SWNE		4-176	Irrigation		1.5
T18S	R45E		23	SENE		200	Irrigation		2.1
T18S	R45E		23	SENE		144	Irrigation		6.7
T18S	R45E		23	NWNW			Irrigation	1.	26.7
T18S	R45E		23	SWNW		19311	Irrigation		9.1
T18S	R45E		23	NESW			Irrigation		1.5

					OW	RD		If Irrigation #	If Irrigation # Supplemental
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T18S	R45E		23	NESW			Irrigation		14.9
T18S	R45E		23	NESW			Irrigation		2.7
T18S	R45E		23	NWSW			Irrigation		19.2
T18S	R45E		23	NWSW		i wy	Irrigation		0.1
T18S	R45E		23	NWSW		I byweith	Irrigation		10.2
T18S	R45E		23	SWSW		1 3 5 5 7	Irrigation		4.1
T18S	R45E		23	SWSW		1 //////	Irrigation		3.3
T18S	R45E		23	SWSW		The state of	Irrigation		2.8
T18S	R45E		23	SWSW		WEI	Irrigation		2.9
T18S	R45E		23	SWSW		1 10,20	Irrigation		0.7
T185	R45E		23	NESE		1. 19/201	Irrigation		12.5
T18S	R45E		23	NESE		0,000	Irrigation		12.6
T18S	R45E		23	NESE		141	Irrigation		5.4
T18S	R45E		23	NESE		W.CM.	Irrigation		2.1
T18S	R45E		23	NWSE		1 17218	Irrigation		18
T18S	R45E		23	NWSE		Theres	Irrigation		3
T18S	R45E		23	NWSE			Irrigation		4.8
T18S	R45E		23	NWSE			Irrigation		6.5
T18S	R45E		23	SWSE			Irrigation		16.2
T18S	R45E		23	SWSE			Irrigation		3.8
T18S	R45E		23	SWSE			Irrigation	•	5.4
T18S	R45E		23	SWSE			Irrigation		6.9
T18S	R45E		23	SESE		-			0.5
							Irrigation		15.3
T18S	R45E		23	SESE			Irrigation		16.3
T18S	R45E			SESE			Irrigation		
T18S	R45E		23	SESW			Irrigation		19.6
T185	R45E		23	SESW			Irrigation		5.2
T18S	R45E		23	SESW		_	Irrigation		5.3
T18S	R45E		23	SESW			Irrigation		2.3
T18S	R45E		24	NENE			Irrigation		0.8
T18S	R45E		24	NENE			Irrigation		20.7
T18S	R45E		24	NENE		3 70	Irrigation		2.7
T18S	R45E		24	NWNE			Irrigation		34.3
T18S	R45E		24	SWNE			Irrigation		12.6
T18S	R45E		24	SWNE			Irrigation		13.6
T18S	R45E		24	SWNE			Irrigation		7
T18S	R45E		24	SWNE			Irrigation		0.9
T18S	R45E		24	SWNE	16.		Irrigation		0.9
T18S	R45E		24	SENE			Irrigation		11.2
T18S	R45E		24	SENE			Irrigation		9.1
T18S	R45E		24	SENE		1005	Irrigation		14.8
T18S	R45E		24	NENW		I wilde	Irrigation		33.4
T18S	R45E		24	NENW			Irrigation		0.7
T18S	R45E		24	SWNW		1927	Irrigation		13.7
T18S	R45E		24	SWNW		1	Irrigation		13.6
T18S	R45E		24	SWNW		100	Irrigation		3.6
T18S	R45E		24	SENW		Jana	Irrigation		33.6
T18S	R45E		24	SENW			Irrigation		1.2
T18S	R45E		24	NESW			Irrigation		5.6
T18S	R45E		24	NESW			Irrigation		18.4
T18S	R45E		24	NESW		100	Irrigation		3.2

# JAN 0'9 2019

						WRD		If Irrigation #	If Irrigation # Supplemental
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T18S	R45E		24	NESW		39.30	Irrigation		1.5
T18S	R45E		24	NESW			Irrigation		1.2
T18S	R45E		24	NWSW		1000	Irrigation		7.6
T18S	R45E		24	NWSW		175778	Irrigation		16.6
T18S	R45E		24	NWSW		1,869	Irrigation		3.7
T18S	R45E		24	SWSW		133	Irrigation	1 36	16.7
T18S	R45E		24	SWSW		LIGH	Irrigation		17
T18S	R45E		24	NESE		3820	Irrigation		11.5
T18S	R45E		24	NESE		303	Irrigation	R	25.4
T18S	R45E		24	NWSE		1500	Irrigation		12.7
T18S	R45E		24	NWSE		1 1977	Irrigation	1 4	17.2
T18S	R45E		24	NWSE		_ <u> </u>	Irrigation	1	3.1
T18S	R45E		24	SWSE		48247	Irrigation		24
T18S	R45E		24	SWSE		I WELL	Irrigation		12.7
T18S	R45E		24	SESE		SHEVEL	Irrigation	To the	1.8
T18S	R45E		24	SESE		- SVEYE	Irrigation		30.2
T18S	R45E		24	SESW		1 1 15 6	Irrigation		8.2
T18S	R45E		24	SESW		1275	Irrigation	4 3	10.1
T18S	R45E		24	SESW		4,302	Irrigation	39	5.1
T18S	R45E		24	SESW		L.M.	Irrigation		2.4
T18S	R45E		24	SESW		- West	Irrigation		6.1
T18S	R45E		25	NENE		1 70.70	Irrigation		35.2
T18S	R45E		25	NWNE		W.C.	Irrigation		4.2
T18S	R45E		25	NWNE		No bear	Irrigation	1	27.7
T18S	R45E		25	SWNE		117 12	Irrigation		3.4
T18S	R45E		25	SWNE		I Bleet	Irrigation	1 12	23.5
T18S	R45E		25	SENE		1.38%N	Irrigation	31	30.2
T18S	R45E		25	NENW		Light	Irrigation	1 31	38.4
T18S	R45E		25	NWNW		3/10/8	Irrigation	1 7	26.2
T18S	R45E		25	NWNW		3977	Irrigation		11.3
T18S	R45E		25	SWNW		19992	Irrigation		26.3
T18S	R45E		25	SWNW		3/17/6	Irrigation		0.6
T18S	R45E		25	SENW		1-3-19-2	Irrigation		28.4
T18S	R45E		26	NENE		T THE W	Irrigation		21.3
T18S	R45E		26	NENE		3,192	Irrigation		7
T18S	R45E		26	NENE		374.2	Irrigation	1.8	7.5
T18S	R45E		26	NWNE		38.52	Irrigation		37.2
T18S	R45E		26	SWNE		1 19 19 14	Irrigation		23.4
T18S	R45E		26	SENE		I Ami	Irrigation		20.6
T18S	R45E		26	SENE		- WEST	Irrigation		8.3
T18S	R45E		26	NENW		L WE'N	Irrigation		13.8
T18S	R45E		26	NENW		- Value	Irrigation		13.9
T18S	R45E		26	NENW		WYVIN	Irrigation	31	0.1
T18S	R45E		26	NENW		Villey	Irrigation	1 36	0.1
T18S	R45E		26	NWNW		White Tax	Irrigation		9
T18S	R45E		26	SENW		A Charge	Irrigation		2.1
T18S	R45E		27	NWNE	3	1 1947/2	Irrigation		6
T18S	R45E		27	NENW		1 7.7.61	Irrigation		24.9
T18S	R45E		27	NENW		T WENT	Irrigation		4.2
T18S	R45E		27	NWNW		J. Downson	Irrigation	1	2.1
T18S	R45E		27	NWNW			Irrigation		1.5

Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	If Irrigation # Primary Acres	If Irrigation # Supplemental Acres
T18S	R45E	Wici	27	NWNW	007 200	DEC	Irrigation	Tilliary Acres	3.6
T18S	R45E		27	NWNW			Irrigation	+	11.2
T18S	R45E		27	NWNW			Irrigation		9.3
T18S	R45E		27	NWNW			Irrigation	+	5.3
T18S	R45E		27	SENW			Irrigation	+	7.2
T18S	R45E		28	NENE		1 0,500	Irrigation		0.5
T18S	R45E		28	NENE		1,0200	Irrigation		1
T18S	R45E		28	NENE		1224	Irrigation		0.9
T18S	R45E		28	NENE		1 1511	Irrigation		0.3
T18S	R45E		28	NENE		1 1000	Irrigation	+	1.1
T18S	R45E		29	SENW		722.0	Irrigation	+	9.2
T185	R45E		29	NESW	_		Irrigation		27.7
T18S	R45E		29	NWSW			Irrigation		1.7
T18S	R45E		29	NWSW			Irrigation		9.6
T18S	R45E		29	NWSW		1 3535	Irrigation		15.1
T18S	R45E		29	SWSW			Irrigation		7.5
T18S	R45E		29	SWSW			Irrigation		2.5
T18S	R45E		29	SWSW		171	Irrigation		3.6
T18S	R45E		29	SWSW	-	11000	Irrigation		15.8
T18S	R45E		29	SESW					31.3
1,500,000		ļ	29	SESW			Irrigation	_	1
T18S	R45E		-			1 11 11 11	Irrigation		0.1
T18S	R45E		29	SESW			Irrigation		0.1
T18S	R45E		29	SESW		1 11111	Irrigation		0.1
T18S	R45E		30	NWNE			Irrigation		
T18S	R45E		30	NWNE			Irrigation		0.1
T18S	R45E		30	NWNE			Irrigation		
T18S	R45E		30	NWNE			Irrigation		1.7 0.2
T185	R45E		30	NWNE		1000	Irrigation		
T18S	R45E		30	NWNE			Irrigation		6
T18S	R45E		30	SWNE			Irrigation		6.8
T18S	R45E		30	SWNE			Irrigation		
T18S	R45E		30	SWNE			Irrigation		2.1 9
T18S	R45E		30	SWNE		- 0.00	Irrigation		50
T18S	R45E		30	SWNE			Irrigation		1.7 0.2
T18S	R45E		30	SWNE			Irrigation		0.1
T18S	R45E		30	SWNE		20030	Irrigation		
T18S	R45E		30	SWNE			Irrigation		2.9 1.5
T18S	R45E		30	NENW			Irrigation		
T18S	R45E		30	NENW			Irrigation		2.8
T18S	R45E		30	NENW		1 1874	Irrigation		5.7
T18S	R45E		30	NENW	1		Irrigation	4	18.2
T18S	R45E		30 30	NWNW	1		Irrigation		3.1 11.8
T18S	R45E			NWNW			Irrigation		9.6
T18S	R45E		30 30	NWNW	1		Irrigation		0.7
T18S	R45E		30	WNW	2		Irrigation		1.5
T18S	R45E		30	SWNW	2		Irrigation	-	21.7
T18S	R45E			SWNW			Irrigation		9.8
T18S	R45E		30	SWNW	2		Irrigation	+	0.6
T18S	R45E		30	SWNW	2		Irrigation		
T18S	R45E		30	SWNW	2		Irrigation		0.3
T18S	R45E	1	30	SENW	1		Irrigation		2.7

							WRD	If Irrigation #	If Irrigation # Supplementa
Tour	D	Man	Coo	00	Caulat	DIC	Han	If Irrigation #	
Twp T18S	Rng	Mer	Sec 30	QQ SENW	Gov Lot	DLC	Use	Primary Acres	Acres 30.6
T18S	R45E		30		-	1 1 1 1	Irrigation	-	10.4
T18S	R45E			NESW			Irrigation		
	R45E		30	NESW		1 Stille	Irrigation		7.3
T18S	R45E		30	NESW		1	Irrigation	<del> </del>	6
T18S	R45E		30	NESW	-	1	Irrigation		4
T18S	R45E		30	NESW			Irrigation		0.2
T18S	R45E		30	NESW			Irrigation	1	3.1
T18S	R45E		30	NESW		L Child	Irrigation		4.3
T18S	R45E		30	NWSW	3		Irrigation	1	4.1
T18S	R45E		30	NWSW	3		Irrigation		6.1
T18S	R45E		30	NWSW	3		Irrigation		6.7
T18S	R45E		30	NWSW	3	-	Irrigation		10.5
T18S	R45E		30	NWSW	3		Irrigation		3.1
T18S	R45E		30	NWSW	3	1 300	Irrigation	4	0.6
T18S	R45E		30	SWSW	4	1.74.7542	Irrigation	1	8.7
T18S	R45E		30	SWSW	4	1250	Irrigation	1 13	10.2
T18S	R45E		30	SWSW	4		Irrigation		6.4
T18S	R45E		30	NESE			Irrigation		1.3
T18S	R45E		30	NESE		1000	Irrigation		8.7
T18S	R45E		30	NESE			Irrigation		0.3
T18S	R45E		30	NWSE			Irrigation		5.3
T18S	R45E		30	NWSE		1.178	Irrigation		4.2
T18S	R45E		30	SWSE	1	400	Irrigation	1 32	2.6
T18S	R45E		30	SWSE		1. 10/6.1	Irrigation		0.7
T18S	R45E		30	SESE		I Was	Irrigation		2.8
T18S	R45E		30	SESE		1.000	Irrigation	1 30	3.3
T18S	R45E		30	SESE		N CM	Irrigation	78	14.8
T18S	R45E		30	SESW		12.00	Irrigation		7.1
T18S	R45E		30	SESW		372.511	Irrigation		6.2
T18S	R45E		30	SESW		THE STATE OF	Irrigation		3
T18S	R45E		31	NENW		1.776.77	Irrigation		6.8
T18S	R45E		31	NWNW	1		Irrigation		14.3
T18S	R45E		31	NWNW	1	100	Irrigation		14.3
T18S	R45E		31	NWNW	1	1.21	Irrigation		1.1
T18S	R45E		31	NWNW	1		Irrigation		1.5
T18S	R45E		31	SWNW	2	Tybu.	Irrigation		8.9
T18S	R45E		31	SWNW	2	72.40	Irrigation	1	0.3
T18S	R45E		31	NWSW	3	763	Irrigation		5.2
T18S	R45E		31	SWSE		3238	Irrigation		12.1
T18S	R45E		31	SESE		36.00	Irrigation		18.6
T18S	R45E		31	SESE		L start	Irrigation		5.6
T18S	R45E		31	SESE		1 300	Irrigation	1 10	5.1
T18S	R45E		31	SESE		1 2001	Irrigation		2.1
T18S	R45E		32	NENW		1 3 1/4	Irrigation		12.6
T18S	R45E		32	NENW		1 25 4	Irrigation		24.3
T18S	R45E		32	NWNW		1 3,702	Irrigation	] 1 3	6.4
T18S	R45E		32	NWNW		1895	Irrigation		17
T18S	R45E		32	SWNW		3262	Irrigation		11.3
T18S	R45E		32	SWNW		AL P	Irrigation	1 1 3	4.5
T18S	R45E		32	SWNW		354	Irrigation		14.3
T18S	R45E		32	SENW		14.32	Irrigation		3.1

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								OWRD If Irrigation #	If Irrigation # Supplemental
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T18S	R45E		32	SENW			Irrigation		13.4
T18S	R45E		32	SENW			Irrigation		3.5
T18S	R45E		32	SENW			Irrigation		1.7
T18S	R45E		32	SENW		1731	Irrigation		2
T18S	R45E		32	SENW		17:37	Irrigation		2.3
T18S	R45E		32	SENW		117	Irrigation	34	2
T18S	R45E		32	NESW			Irrigation		7.8
T18S	R45E		32	NWSW		11897	Irrigation		36.2
T18S	R45E		32	SWSW	Ε		Irrigation		12.4
T18S	R46E		1	SWSE			Irrigation		7.9
T18S	R46E		1	SWSE			Irrigation		5.8
T18S	R46E		1	SESE			Irrigation		11.4
T18S	R46E		1	SESE			Irrigation		4.7
T18S	R46E		1	SESE			Irrigation		8.8
T18S	R46E		7	SWSW	4	The same	Irrigation		19.7
T18S	R46E		7	NESE		Man	Irrigation	7 7 3	19.3
T18S	R46E		7	SESE		- V.2.6.	Irrigation		33.3
T18S	R46E		7	SESW			Irrigation		17.6
T18S	R46E		8	SWNE			Irrigation		0.8
T18S	R46E		8	SWNE		_	Irrigation		0.6
T18S	R46E		8	SENE			Irrigation		5.9
T18S	R46E		8	SWNW					4.5
T18S	R46E		8	SWNW		-	Irrigation		7.6
T18S	R46E			SENW			Irrigation		17.4
			8	NESW		_	Irrigation		14.8
T18S	R46E						Irrigation		9.9
T18S	R46E		8	NESW			Irrigation		
T18S	R46E		8	NESW			Irrigation		8.3
T18S	R46E		8	NESW			Irrigation		4.2
T18S	R46E		8	NESW			Irrigation		0.4
T18S	R46E		8	NWSW			Irrigation		14.7
T18S	R46E		8	NWSW			Irrigation		14.1
T18S	R46E		8	NWSW			Irrigation		4.3
T18S	Ŗ46E		8	NWSW			Irrigation		4.4
T18S	R46E		8	SWSW			Irrigation		14.6
T18S	R46E		8	SWSW			Irrigation		5.9
T18S	R46E		8	SWSW			Irrigation		10.3
T18S	R46E		8	NESE			Irrigation		27.8
T18S	R46E		8	NESE			Irrigation		6
T18S	R46E		8	NESE			Irrigation		0.4
T18S	R46E		8	NESE			Irrigation		1.6
T18S	R46E		8	NWSE		197	Irrigation	3.1	5.6
T18S	R46E		8	NWSE		12-12	Irrigation		27.8
T18S	R46E		8	NWSE			Irrigation		3.9
T18S	R46E		8	NWSE		L WHA	Irrigation		0.3
T18S	R46E		8	SWSE			Irrigation		8.8
T18S	R46E		8	SWSE			Irrigation		22.8
T18S	R46E		8	SWSE			Irrigation		2.9
T18S	R46E		8	SESE			Irrigation		17.2
T18S	R46E		8	SESE			Irrigation		10.5
T18S	R46E		8	SESE		To May	Irrigation		5.6
T18S	R46E		8	SESW			Irrigation		10.5

							O	VRD	If Irrigation #
								If Irrigation #	Supplemental
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T18S	R46E		8	SESW		1800	Irrigation		0.7
T18S	R46E		8	SESW			Irrigation	1 30	12.6
T18S	R46E		8	SESW		3-44	Irrigation	1 18	2.5
T18S	R46E		8	SESW		1 3 7 1	Irrigation	1 13	2
T18S	R46E		8	SESW			Irrigation	d 12	1.4
T18S	R46E		9	NESW		324	Irrigation		14.6
T18S	R46E		9	NESW		10 3/4/19	Irrigation	32	4.6
T18S	R46E		9	NWSW		1 STATE	Irrigation	1 10	27.2
T18S	R46E		9	NWSW		1 23 17	Irrigation	1 39	0.5
T18S	R46E		9	SWSW		3231	Irrigation	18	14.6
T18S	R46E		9	SWSW			Irrigation	100	17.8
T18S	R46E		10	SWNE		9231	Irrigation		6.7
T18S	R46E		10	SENE		W232	Irrigation	1 38	1.4
T18S	R46E		10	SENE		Vizit	Irrigation		14.5
T18S	R46E		10	SENE		84-332	Irrigation		4.7
T18S	R46E		10	SENE		Weigh	Irrigation	1 30	4.7
T18S	R46E		10	NESE		V Aug	Irrigation		0.6
T18S	R46E		10	NESE	1.	Water	Irrigation	1 1 18	14.1
T18S	R46E		10	NESE		I Wales	Irrigation		21.7
T18S	R46E		10	NWSE		1 42	Irrigation	1	3
T18S	R46E		10	NWSE	1 ** * *		Irrigation		13.2
T18S	R46E	1	10	SWSE	-	1 191	Irrigation		6
T18S	R46E		10	SWSE	7	1050	Irrigation		18.8
T18S	R46E		10	SESE	1	1 1000	Irrigation		20.8
T18S	R46E		10	SESE		12 min	Irrigation	1	16.2
T18S	R46E		10	SESW	7.7	T. Garage	Irrigation		1.1
T18S	R46E		11	NENE			Irrigation		18
T18S	R46E		11	NENE		1 12 17 17	Irrigation		14.9
T18S	R46E		11	NWNE		1	Irrigation		18.9
T18S	R46E		11	NWNE	1	A Principle	Irrigation		18.9
T18S	R46E		11	SWNE		1 1 1 1 1 1 1		31	
T18S	R46E		11	SWNE		1 10 40 3	Irrigation		13.8
T18S	R46E		11			1	Irrigation		4.2
T18S	R46E			SWNE			Irrigation		18
T18S	R46E		11	SENE			Irrigation		8
			11	SENE			Irrigation	1 3	27.1
T18S	R46E		11	NENW			Irrigation		15
	R46E		11	NENW			Irrigation		15.7
T18S	R46E		11	NENW		1 10 10 10 10	Irrigation		3.3
T185	R46E		11	NWNW		1 10 17	Irrigation	1 30	9.4
T185	R46E		11	NWNW		I KIN	Irrigation		6.6
T185	R46E		11	NWNW		N.C.	Irrigation	1 36	9.6
T18S	R46E		11	NWNW		P. CV.	Irrigation	1 9	6.3
T18S	R46E		11	SWNW			Irrigation	1 30	17.9
T185	R46E		11	SWNW		11000	Irrigation		17.3
T18S	R46E		11	SENW		32075	Irrigation	16	18.8
T18S	R46E		11	SENW		1 1817	Irrigation		18.6
T18S	R46E		11	NESW		1 322	Irrigation		17.3
T18S	R46E		11	NESW		1 32	Irrigation	1 30	18.3
T18S	R46E		11	NESW			Irrigation		1.2
T18S	R46E		11	NWSW		T W/32	Irrigation	1 70	16.5
T18S	R46E		11	NWSW		1 1 1 1 1 1	Irrigation		18.6

							WRD		If Irrigation #
								If Irrigation #	Supplemental
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T18S	R46E		11	swsw			Irrigation	· · · · · · · · · · · · · · · · · · ·	16.9
T18S	R46E		11	SWSW		1 1/232	Irrigation		15.6
T18S	R46E		11	NESE		10237	Irrigation		29.8
T18S	R46E		11	NESE		10.70	Irrigation		4.6
T18S	R46E		11	NESE			Irrigation		0.4
T18S	R46E		11	NESE		0.239	Irrigation		0.9
T18S	R46E		11	NWSE		WEST	Irrigation	1 1 1 1 1 1	14.8
T18S	R46E		11	NWSE		10715	Irrigation	1 3	23.3
T18S	R46E		11	SWSE		W5/W	Irrigation		20.7
T18S	R46E		11	SWSE			Irrigation		14.4
T18S	R46E		11	SESE		May 37	Irrigation		12
T18S	R46E		11	SESE		33/14/2	Irrigation		23.2
T18S	R46E		11	SESW			Irrigation		17.4
T18S	R46E		11	SESW		310	Irrigation		15.5
T18S	R46E		11	SESW		-	Irrigation	1	0.7
T18S	R46E		12	NESW		1 3/10	Irrigation		15.2
T18S	R46E		12	NWSW		1 323.0	Irrigation		25.2
T18S	R46E		12	NWSW			Irrigation		12.9
T18S	R46E		12	SWSW		1 423 V	Irrigation		19.8
T18S	R46E		12	SWSW			Irrigation		6
T18S	R46E		12	SWSW		1274.5	Irrigation		2.2
T18S	R46E		12	SESW		-	Irrigation		1
T18S	R46E		12	SESW		-	Irrigation		0.7
T18S	R46E		13	NENW			Irrigation		5.4
T18S	R46E		13	NWNW			Irrigation		2.8
T18S	R46E		13	NWNW		1 777	Irrigation		8.1
T18S	R46E		13	NWNW			Irrigation		19.4
T18S	R46E		13	SWNW	-		Irrigation		39
T18S	R46E		13	SENW		-	Irrigation		14.1
T18S	R46E		13	SENW			Irrigation		10.4
T18S	R46E		13	NESW		_	Irrigation	<del>                                     </del>	4.8
T185	R46E		13	NESW			Irrigation		11.3
T18S	R46E		13	NESW			Irrigation		7.1
T18S	R46E		13	NESW		1 343	Irrigation		3.1
T18S	R46E		13	NESW			Irrigation		7.1
T18S	R46E		13	NWSW		1 - 1 - 1 - 1	Irrigation		11.3
T18S	R46E		13	NWSW		1 1000	Irrigation		21.8
T18S	R46E		13	NWSW			Irrigation		5
T18S	R46E	<b>-</b>	13	SWSW		-1	Irrigation		8.9
T18S	R46E	<u> </u>	13	SWSW			Irrigation		11.6
T18S	R46E		13	SWSW		T United States	Irrigation		8.4
T18S	R46E		13	SWSW	-		Irrigation		6.6
T18S	R46E		13	NESE			Irrigation		0.2
T18S	R46E		13	NWSE			Irrigation		2.3
T18S	R46E		13	SWSE	,	T years	Irrigation		23.4
T18S	R46E		13	SWSE			Irrigation		5.4
T18S	R46E		13	SESE			Irrigation		3.9
T18S	R46E		13	SESE			Irrigation		11.4
T18S	R46E		13	SESE			Irrigation	T	0.1
T18S	R46E		13	SESW			Irrigation		13.5
1 103	R46E		13	SESW			Irrigation		5.6

						OWRE		If Irrigation #	If Irrigation # Supplementa
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T18S	R46E		13	SESW		- VacTil	Irrigation		0.6
T18S	R46E		14	NENE		7 7727	Irrigation		28.2
T18S	R46E		14	NWNE		1 30.0	Irrigation		16.1
T18S	R46E		14	NWNE	7	-133	Irrigation		21.3
T18S	R46E		14	SWNE		1 174	Irrigation		11.5
T18S	R46E		14	SWNE		1 40	Irrigation		2.9
T18S	R46E		14	SWNE		The Man	Irrigation		17.2
T18S	R46E		14	SWNE		1000	Irrigation	1 3	3.3
T18S	R46E		14	SENE		1 1/2/2	Irrigation		22.1
T18S	R46E		14	SENE			Irrigation	1 3	8.9
T18S	R46E		14	SENE		2.822	Irrigation	1 3	4.2
T18S	R46E		14	NENW		319.00	Irrigation		9.7
T18S	R46E		14	NENW		1 3 7	Irrigation		5.8
T18S	R46E		14	NENW		Wind A	Irrigation	1 1	1.1
T18S	R46E		14	NENW		1 150 151	Irrigation	1 3	19.2
T18S	R46E		14	NWNW		T HISTH	Irrigation		17
T18S	R46E		14	NWNW		1 1 1/2	Irrigation		12.1
T18S	R46E		14	NWNW		200000	Irrigation		7.1
T18S	R46E		14	NWNW		A 1/150	Irrigation		0.8
T18S	R46E		14	SWNW		T. WASE	Irrigation	1 1 1	6.6
T18S	R46E		14	SWNW		T Wite I	Irrigation		24.9
T18S	R46E		14	SENW		T Suggest	Irrigation		32
T18S	R46E		14	SENW		1 1834	Irrigation		0.6
T18S	R46E		14	SENW			Irrigation		0.6
T18S	R46E		14	SENW	3		Irrigation		0.6
T18S	R46E		14	NESW		T MALLY	Irrigation		26.2
T18S	R46E		14	NESW		1923/1	Irrigation	,	5.2
T18S	R46E		14	NESW		1972172	Irrigation		3.4
T18S	R46E		14	NESW		1 10 43	Irrigation		0.7
T18S	R46E		14	NESW		1 33.34	Irrigation		0.4
T18S	R46E		14	NWSW		1 10.4	Irrigation		10.8
T18S	R46E		14	NWSW		1 1000	Irrigation		3.8
T18S	R46E		14	NWSW	3	12:10	Irrigation		13.5
T18S	R46E		14	NWSW		327/2	Irrigation		10.1
T18S	R46E		14	NWSW		7 7/7/1	Irrigation		0.1
T18S	R46E		14	SWSW		1 12 1	Irrigation		6.7
T18S	R46E		14	SWSW		7 92.83	Irrigation		20.3
T18S	R46E		14	SWSW		1 3090	Irrigation	1 1 1	2.2
T18S	R46E		14	SWSW		1 32/1/2	Irrigation		4.9
T18S	R46E		14	NESE		3882	Irrigation		1.3
T18S	R46E		14	NESE		1 300	Irrigation		8.8
T18S	R46E		14	NESE			Irrigation		17.9
T18S	R46E		14	NESE			Irrigation		8.2
T18S	R46E		14	NESE		1 104	Irrigation		0.5
T18S	R46E		14	NWSE		1 700	Irrigation		3.1
T18S	R46E		14	NWSE			Irrigation		8.5
T18S	R46E		14	NWSE		1 110	Irrigation		27
T18S	R46E		14	SWSE		1 1985	Irrigation		34.9
T18S	R46E		14	SESE		1	Irrigation		6.1
T18S	R46E		14	SESE		315	Irrigation		27.4
T18S	R46E		14	SESW		3187	Irrigation		1.9

						OWRD		If Irrigation #	If Irrigation # Supplementa
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T18S	R46E		14	SESW			Irrigation		5
T18S	R46E		14	SESW		T MOA	Irrigation		27.5
T18S	R46E		15	NENE		38727	Irrigation		13.6
T18S	R46E		15	NENE		I seven	Irrigation		16.4
T18S	R46E		15	NWNE		10.00	Irrigation		8.1
T18S	R46E		15	NWNE		T 10 12	Irrigation		2.9
T18S	R46E		15	NWNE		11017	Irrigation		11.8
T18S	R46E		15	NWNE		137.12	Irrigation		7.9
T18S	R46E		15	SWNE		1 39 12	Irrigation	1 3	11.6
T18S	R46E		15	SWNE			Irrigation		20.5
T18S	R46E		15	SWNE		31/12	Irrigation		1.9
T18S	R46E		15	SWNE		90.40	Irrigation		0.4
T18S	R46E		15	SENE			Irrigation		35.7
T18S	R46E		15	NENW		1965 318	Irrigation		9.4
T18S	R46E		15	NENW		100,000	Irrigation	T	2.1
T18S	R46E		15	NENW			Irrigation		6.5
T18S	R46E		15	SWNW		1 33/10/3/03	Irrigation		6.7
T18S	R46E		15	SWNW			Irrigation		16.5
T18S	R46E		15	SENW			Irrigation		12.7
T18S	R46E		15	SENW			Irrigation		8.5
T18S	R46E		15	SENW			Irrigation		4.3
T18S	R46E		15	SENW			Irrigation	+	10.6
T18S	R46E		15	NESW			Irrigation		9.8
T18S	R46E		15	NESW			Irrigation		12
T18S	R46E		15	NESW			Irrigation		3.3
T18S	R46E		15	NWSW			Irrigation		28
T18S	R46E		15	NWSW			Irrigation	<del></del>	9.1
T18S	R46E		15	SWSW			Irrigation	<del></del>	18.9
T18S	R46E		15	SWSW			Irrigation		12.5
T18S	R46E		15	NESE			Irrigation		4.1
T18S	R46E		15	NESE			Irrigation	<del>                                     </del>	9.7
T18S			15	NESE			Irrigation		7.2
T18S	R46E		15	NESE					6.3
T18S	R46E R46E		15	NESE			Irrigation Irrigation		4.8
			15	NWSE			Irrigation		11.9
T18S	R46E				-				20.6
T18S	R46E		15 15	NWSE SWSE		1 30%	Irrigation Irrigation	+	3.5
T18S	R46E		15	SWSE	-	1 100	Irrigation		5
T18S	R46E		15	SWSE	-				10.6
T18S	R46E		15	SWSE		14 5 4 4 5	Irrigation		12.7
T18S	R46E R46E					16.00	Irrigation		16.6
T18S			15 15	SESE SESE	-	-	Irrigation		2.3
T18S	R46E		15	SESE		- 12	Irrigation		12.4
T18S	R46E		15	SESE	-		Irrigation		1.2
T18S	R46E		15		<b> </b>	1631	Irrigation		0.6
T18S	R46E			SESE			Irrigation		16.3
T18S	R46E		15	SESW	<b> </b>		Irrigation		
T18S	R46E		15	SESW			Irrigation	<del></del>	1.6
T18S	R46E		15	SESW			Irrigation		
T18S	R46E		16	SENE			Irrigation	ļ	18.2
T18S	R46E R46E		17 17	NENE	-		Irrigation Irrigation		3.9

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			L	OWRE	OWR			If Irrigation #	If Irrigation # Supplementa
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T18S	R46E		17	NENW			Irrigation		20.5
T18S	R46E		17	NWNW		100	Irrigation		12.6
T18S	R46E		17	NWNW			Irrigation	8	13.5
T18S	R46E		18	NENE			Irrigation		8.2
T18S	R46E		18	NENE		1 - 1 19	Irrigation		8
T18S	R46E		18	NWNE			Irrigation		35.5
T18S	R46E		18	NWNE		1 11 12	Irrigation		7.8
T18S	R46E		18	SWNE	7	17.5	Irrigation		4.5
T18S	R46E		18	SWNE		1 9 70	Irrigation	TI	23.5
T18S	R46E		18	SWNE		10,49	Irrigation		1.6
T18S	R46E		18	SWNE		TPIL	Irrigation		2
T18S	R46E		18	SENE			Irrigation		36.6
T18S	R46E		18	NENW		1 811	Irrigation		2
T185	R46E		18	NENW		V 100	Irrigation		26.1
T185	R46E		18	NENW	1	1 1112	Irrigation		9.3
T18S	R46E		18	NWNW	1	1111	Irrigation		0.6
T18S	R46E		18	NWNW	1	1 100	Irrigation		15.8
T18S	R46E		18	NWNW	1	10.12	Irrigation		18.4
T18S	R46E		18	NWNW	1		Irrigation		0.4
T18S	R46E		18	SWNW	2				3.7
T18S	R46E		18	SWNW	2	4 41111	Irrigation	-	22.2
T18S	R46E		18		2		Irrigation		6.4
				SWNW	2		Irrigation		
T18S	R46E		18	SENW	1	16.85	Irrigation		12.9
T18S	R46E		18	SENW	1		Irrigation		6.1
T185	R46E		18	SENW		1 11 11	Irrigation		10.8
T18S	R46E		18	NESW	1	10000	Irrigation		5.2
T185	R46E		18	NESW		38 94.53	Irrigation		4.7
T18S	R46E		18	NESW			Irrigation		12.2
T185	R46E		18	NESW	4		Irrigation		4.2
T18S	R46E		18	NESW		1 3495	Irrigation		3.1
T18S	R46E		18	NESW			Irrigation		0.1
T18S	R46E		18	NWSW	3		Irrigation		3.7
T18S	R46E		18	SWSW	4	1	Irrigation	1 4 4	1.9
T18S	R46E		18	SWSW	4	1 14-140	Irrigation		14
T18S	R46E		18	SWSW	4	1 Ask at	Irrigation		6.6
T18S	R46E		18	SWSW	4	Total A	Irrigation	1 4 8	6.6
T18S	R46E		18	NESE		1 200	Irrigation		7.6
T18S	R46E		18	NESE		I West	Irrigation		5.1
T18S	R46E		18	NESE	1 2	1 16	Irrigation		7.7
T18S	R46E		18	NESE		Melle	Irrigation		0.7
T18S	R46E		18	NESE		N. C. W.	Irrigation		0.2
T18S	R46E		18	NESE		17217	Irrigation		2.4
T18S	R46E		18	NWSE		1 3	Irrigation		18.6
T18S	R46E		18	NWSE		LICH	Irrigation		1.9
T18S	R46E		18	NWSE		L. A.	Irrigation		1.7
T18S	R46E		18	SWSE		10	Irrigation		20.2
T18S	R46E		18	SWSE			Irrigation		16.2
T18S	R46E		18	SESE			Irrigation		17.8
T18S	R46E		18	SESE		1_3679	Irrigation		18.5
T18S	R46E		18	SESE			Irrigation		0.9
T18S	R46E		18	SESW			Irrigation		4.3



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				1.	0	WRD		If Irrigation #	If Irrigation # Supplemental
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T18S	R46E		18	SESW			Irrigation		8.6
T18S	R46E		18	SESW			Irrigation		22.1
T18S	R46E		18	SESW			Irrigation		3
T18S	R46E		18	SESW			Irrigation		0.2
T18S	R46E		19	NENE			Irrigation	1	17.2
T18S	R46E		19	NENE			Irrigation	T	7.6
T18S	R46E		19	NENE		T anyon	Irrigation		7.6
T18S	R46E		19	NWNE		T alean	Irrigation		6.6
T18S	R46E		19	NWNE		1000	Irrigation		24.2
T18S	R46E		19	NWNE		7.00	Irrigation	1	1.3
T18S	R46E		19	NWNE			Irrigation		0.7
T18S	R46E		19	SWNE			Irrigation		18.1
T18S	R46E		19	SWNE		F Language	Irrigation		11.4
T18S	R46E		19	SWNE			Irrigation		6.7
T18S	R46E		19	SENE			Irrigation		10
T18S	R46E		19	SENE			Irrigation		7.9
T18S	R46E		19	SENE			Irrigation	+	6.7
T18S	R46E		19	SENE			Irrigation		6.4
T18S	R46E		19	SENE			Irrigation	+	1.8
	R46E		19	NENW					10
T18S			19	NENW			Irrigation	+	21.9
T18S	R46E				1		Irrigation		
T185	R46E		19	NWNW	1		Irrigation		18.7
T18S	R46E		19	NWNW	1		Irrigation		12.5
T18S	R46E		19	SWNW	2		Irrigation		9.9
T18S	R46E		19	SWNW	2	10000	Irrigation		6.5
T18S	R46E		19	SWNW	2		Irrigation		12.2
T18S	R46E		19	SWNW	2		Irrigation		7.3
T18S	R46E		19	SENW			Irrigation		17.6
T18S	R46E		19	SENW			Irrigation		5.7
T18S	R46E		19	SENW			Irrigation		12.2
T18S	R46E		19	NESW			Irrigation		6.1
T18S	R46E		19	NESW			Irrigation		25.2
T18S	R46E		19	NESW		L was	Irrigation		5.3
T18S	R46E		19	NWSW	3		Irrigation		14.5
T18S	R46E		19	NWSW	3	1.9000	Irrigation		2.4
T18S	R46E		19	NWSW	3		Irrigation		9
T18S	R46E		19	NWSW	3	3,139	Irrigation		9.7
T18S	R46E		19	NWSW	3		Irrigation		2
T18S	R46E		19	SWSW	4		Irrigation		21.3
T18S	R46E		19	SWSW	4		Irrigation		3.7
T18S	R46E		19	SWSW	4	1	Irrigation		4.8
T18S	R46E		19	swsw	4	7711	Irrigation		2
T18S	R46E		19	NESE			Irrigation		10.6
T18S	R46E		19	NESE		12,00	Irrigation		13.5
T18S	R46E		19	NESE			Irrigation		0.2
T18S	R46E		19	NESE		1000	Irrigation		4.4
T18S	R46E		19	NESE		10.000	Irrigation		6.1
T18S	R46E		19	NWSE			Irrigation		0.6
T18S	R46E		19	NWSE			Irrigation		5.7
T18S	R46E		19	NWSE		1 1011	Irrigation		21.4
T18S	R46E		19	NWSE		1	Irrigation		10.3

				(		OWRD		If Irrigation #	If Irrigation # Supplementa
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T18S	R46E		19	SWSE			Irrigation	•	2
T18S	R46E		19	SWSE		1 1132	Irrigation		1.5
T18S	R46E		19	SWSE		1 3000	Irrigation		7.4
T18S	R46E		19	SWSE		1 17 7	Irrigation		2.7
T18S	R46E		19	SWSE			Irrigation		8.2
T18S	R46E		19	SWSE		11.3	Irrigation		9.9
T18S	R46E		19	SESE		THE SECOND	Irrigation		0.1
T18S	R46E		19	SESE		7 87.00	Irrigation		9.2
T18S	R46E		19	SESE		" only o	Irrigation		21.5
T18S	R46E		19	SESE	-	100000000	Irrigation		1.8
T18S	R46E		19	SESW	1		Irrigation	+	14
T18S	R46E		19	SESW			Irrigation		18.7
T18S	R46E		20	NENE			Irrigation		34.7
T18S	R46E		20	NWNE			Irrigation		32.9
T18S	R46E		20	SWNE	+				2.2
	R46E		20		-	1919	Irrigation		7
T18S				SWNE			Irrigation		
T18S	R46E		20	SWNE			Irrigation		26.2
T185	R46E		20	SENE		100	Irrigation		9.2
T185	R46E		20	SENE	-	1 11 11	Irrigation		27.8
T18S	R46E		20	NENW		100000	Irrigation		30.1
T185	R46E		20	NENW		1 263768	Irrigation		1.2
T18S	R46E		20	NWNW		1 10000	Irrigation	1 2	31.2
T18S	R46E		20	SWNW		N. Williams	Irrigation		25.4
T18S	R46E		20	SWNW			Irrigation		12.6
T18S	R46E		20	SENW		L 39LV5	Irrigation		24.9
T18S	R46E		20	SENW		T. Walde	Irrigation		12.1
T18S	R46E		20	NESW		1 775 1840	Irrigation		8
T18S	R46E		20	NESW		1 10000	Irrigation		18.3
T18S	R46E		20	NESW		14/16.14	Irrigation		9.9
T18S	R46E		20	NWSW		4 1/4 1/2 (1)	Irrigation		24.6
T18S	R46E		20	NWSW		1- Weekly	Irrigation		13
T18S	R46E		20	SWSW		J'CSW	Irrigation		0.7
T18S	R46E		20	SWSW		LINEAL	Irrigation		20.7
T18S	R46E		20	SWSW		7000	Irrigation		8.2
T18S	R46E		20	SWSW		37545	Irrigation		5.6
T18S	R46E		20	SWSW	(0)	JANUA	Irrigation		0.3
T18S	R46E		20	SWSW		36878	Irrigation	1 3	0.1
T18S	R46E		20	NESE			Irrigation		27.7
T18S	R46E		20	NESE			Irrigation		6.5
T18S	R46E		20	NWSE			Irrigation		1.5
T18S	R46E		20	NWSE		3/4/2	Irrigation	1 3	16.8
T18S	R46E		20	NWSE		1.46.164	Irrigation		4.3
T18S	R46E		20	NWSE		TO THE PARTY	Irrigation		4.4
T18S	R46E		20	NWSE		1.027	Irrigation		8
T18S	R46E		20	SWSE		T WILLIE	Irrigation		22.8
T18S	R46E		20	SESW		780	Irrigation		4.1
T18S	R46E		20	SESW		SVAYA	Irrigation		9.6
T18S	R46E		20	SESW		1 1/12/14	Irrigation		14.6
T18S	R46E		20	SESW		1 1/3/5/20	Irrigation		3
T18S	R46E		20	SESW		T-Name:	Irrigation		0.8
T18S	R46E		20	SESW		T War	Irrigation	7	1

			GWRD						
					Own			If Irrigation #	If Irrigation # Supplemental
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T18S	R46E		21	NENE		325	Irrigation		22.3
T18S	R46E		21	NENE			Irrigation		9.7
T18S	R46E		21	NWNE			Irrigation		8.1
T18S	R46E		21	NWNE		3.07	Irrigation		24.8
T18S	R46E		21	SWNE		72.49	Irrigation		23.3
T18S	R46E		21	SENE		32.63	Irrigation		17.2
T18S	R46E		21	NENW		1 2/22	Irrigation		14.2
T18S	R46E		21	NENW			Irrigation		18.2
T18S	R46E		21	NWNW		3232	Irrigation		13.4
T18S	R46E		21	NWNW		323	Irrigation		17.4
T18S	R46E		21	NWNW		The Trans	Irrigation		3.1
T18S	R46E		21	SWNW			Irrigation		25.4
T18S	R46E		21	SWNW			Irrigation		10
T18S	R46E		21	SENW		1 3. 11	Irrigation		18
T18S	R46E		21	SENW			Irrigation		16.9
T18S	R46E		21	NESW			Irrigation		10.1
T18S	R46E		21	NWSW		1 6.105	Irrigation		7.2
T18S	R46E		21	NWSW			Irrigation		3
T18S	R46E		21	NWSW			Irrigation		9
T18S	R46E		21	NWSW			Irrigation		1.7
T18S	R46E		21	NWSW			Irrigation	•	12.7
T18S	R46E		21	SWSW			Irrigation		0.7
T18S	R46E		21	SWSW	X .		Irrigation	<del></del>	5.3
T18S	R46E		21	SWSW					1.6
T18S	R46E		22	NWNE			Irrigation Irrigation		0.7
T18S	R46E		22	NENW					18.9
T18S	R46E		22	NWNW			Irrigation Irrigation		34.2
T18S	R46E		22	SWNW		_			2.2
							Irrigation		1.2
T18S	R46E		29	NWNW		-	Irrigation		
T18S	R46E		29	NWNW			Irrigation		2.4
T18S	R46E		29	NWNW			Irrigation		0.2
T18S	R46E		30	NENE		1 1977	Irrigation		1
T18S	R46E		30	NENE			Irrigation		4.2
T18S	R46E		30	NENE			Irrigation		10.2
T18S	R46E		30	NENE			Irrigation		1
T18S	R46E		30	NWNE			Irrigation		7.3
T18S	R46E		30	NWNE			Irrigation		11
T18S	R46E		30	NWNE		J 523W	Irrigation		8.2
T18S	R46E		30	NWNE			Irrigation		1.8
T18S	R46E		30	NWNE			Irrigation		1.4
T18S	R46E		30	SWNE			Irrigation		0.3
T18S	R46E		30	NENW			Irrigation		11.4
T18S	R46E		30	NENW	1	1.3283	Irrigation		20.7
T18S	R46E		30	NWNW	1	3260	Irrigation		14.4
T18S	R46E		30	NWNW	1		Irrigation		14
T18S	R46E		30	NWNW	1	1925	Irrigation		1.6
T18S	R46E		30	NWNW	1	1 11 21	Irrigation		0.1
T18S	R46E		30	NWNW	1	1.423	Irrigation		2.6
T18S	R46E		30	NWNW			Irrigation		4.4
T18S	R46E		30	SWNW	2		Irrigation		8.1
T18S	R46E		30	SWNW	2	W/Z	Irrigation		11.2

								OWRD If Irrigation #	If Irrigation # Supplementa
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T18S	R46E		30 .	SENW			Irrigation		1.4
T18S	R46E		30	SENW			Irrigation		7.3
T18S	R47E		6	NENE	1		Irrigation		14.3
T18S	R47E		6	NENE	1		Irrigation		2.7
T18S	R47E		6	SWNE			Irrigation		7.6
T18S	R47E		6	SENE			Irrigation		15.4
T18S	R47E		6	NESW		I into a	Irrigation	a a	16.9
T18S	R47E		6	SWSW	7		Irrigation	1 198	5.8
T18S	R47E		6	SESW			Irrigation		11.9
T19S	R430E		20	NENW	3		Irrigation		1.7
T19S	R43E		1	SWNE		1 2000	Irrigation		23.2
T19S	R43E		1	SWNE	1	1220	Irrigation		0.7
T19S	R43E		1	SWNE			Irrigation		0.2
T19S	R43E		1	SWNE		232	Irrigation		0.9
T19S	R43E		1	SENE		111	Irrigation		5.1
T19S	R43E		1	NENW		1 3 3 2	Irrigation		0.5
T19S	R43E		1	SWNW		1	Irrigation		12.8
T19S	R43E		1	SWNW		1 1977	Irrigation		4.9
T19S	R43E		1	SENW		Tarin	Irrigation	7	2.4
T19S	R43E		1	SENW		T Sur	Irrigation		11.2
T19S	R43E		1	SENW		1000	Irrigation		3.3
T19S	R43E		1	SENW			Irrigation		4.7
T19S	R43E		1	NESW		A A A S	Irrigation		1.2
T19S	R43E		1	NESW			Irrigation		0.6
T19S	R43E		1	NWSW		1	Irrigation		5.1
T19S	R43E		1	NWSW		100	Irrigation		4.7
T19S	R43E		1	NWSW			Irrigation		0.9
T19S	R43E		1	swsw		10000	Irrigation		9.6
T19S	R43E		1	SWSW		1 10 10	Irrigation		0.7
T19S	R43E		1	SWSW	7	1	Irrigation		0.8
T19S	R43E		1	NESE	+		Irrigation		24.1
T19S	R43E		1	NWSE			Irrigation		0.2
T19S	R43E		1	NWSE			Irrigation		0.1
T19S	R43E		1	NWSE			Irrigation		24.7
T19S	R43E		1	SWSE			Irrigation		22.1
T19S	R43E		1	SESE	-	-	Irrigation		17.8
T19S	R43E		1	SESE	-		Irrigation		4.1
T19S	R43E		1	SESE			Irrigation	<del></del>	0.4
T19S	R43E		2	NENE	1		Irrigation		2.8
T19S	R43E		2	NWNE	2		Irrigation	1	15.3
T19S	R43E		2	SWNE	-	36	Irrigation		0.7
T19S	R43E		2	SWNE			Irrigation		1
T19S	R43E		2	SWNE			Irrigation	1-2	28.2
T195	R43E		2	SENE		10.00	Irrigation		2.9
T19S	R43E		2	SENE		1 77 77	Irrigation		7.8
T195	R43E		2	SENE		18/3/2	Irrigation		7.8
T195	R43E		2	NENW	3	1		-	2.2
	R43E		2	NWNW	4	100	Irrigation		0.9
T19S					4	1666	Irrigation		
T19S	R43E		2	SWNW			Irrigation	1	32.7
T19S T19S	R43E R43E		2	SENW NESW			Irrigation Irrigation	<del></del>	36.6 38

							OWR	If Irrigation #	If Irrigation # Supplementa
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T19S	R43E		2	NWSW		1 100000	Irrigation		34
T19S	R43E		2	SWSW			Irrigation		30.2
T19S	R43E		2	NESE			Irrigation		12.6
T19S	R43E		2	NESE		1913.0	Irrigation		5.6
T19S	R43E		2	NESE			Irrigation		11.3
T19S	R43E		2	NESE			Irrigation		3.7
T19S	R43E		2	NWSE		1 100	Irrigation		2.8
T19S	R43E		2	NWSE		145.44	Irrigation		17.2
T19S	R43E		2	NWSE		100	Irrigation		4.7
T19S	R43E		2	NWSE			Irrigation	30	1.1
T19S	R43E		2	NWSE			Irrigation		9.3
T19S	R43E		2	SWSE			Irrigation		7.2
T19S	R43E		2	SWSE		1 1897	Irrigation		5.9
T19S	R43E		2	SESE		1 1111/13	Irrigation		26.5
T19S	R43E		2	SESE			Irrigation		3.8
T19S	R43E		2	SESE		1 1991.21	Irrigation		3.3
T19S	R43E		2	SESW			Irrigation		32
T19S	R43E		3	SWNE		7.0	Irrigation		12.9
T19S	R43E		3	SWNE			Irrigation		0.1
T19S	R43E		3	SENE			Irrigation		14.6
T19S	R43E		3	SENE		1 1/1/1932	Irrigation		6.5
T19S	R43E		3	NENW	3	100	Irrigation		15.3
T19S	R43E		3	NENW	3		Irrigation		7.9
T19S	R43E		3	NENW	3	777	Irrigation		0.5
T19S	R43E		3	NWNW	4	140000	Irrigation		23.7
T19S	R43E		3	NWNW	4	T WENT	Irrigation		0.5
T19S	R43E		3	SWNW			Irrigation		17.3
T19S	R43E		3	SWNW			Irrigation		7.9
T19S	R43E		3	SENW		,	Irrigation		0.2
T19S	R43E		3	SENW		100	Irrigation		3.2
T19S	R43E		3	SENW		1 36370	Irrigation		7.2
T19S	R43E		3	NESW		12.11	Irrigation		0.8
T19S	R43E		3	NESW		135711	Irrigation		9.2
T19S	R43E		3	NESW		1.70	Irrigation		17.2
T19S	R43E		3	NESW		1 36 72	Irrigation		3.7
T19S	R43E		3	NESW		3232	Irrigation		2.1
T19S	R43E		3	NESW		32.17	Irrigation		0.7
T19S	R43E		3	NWSW		36.36	Irrigation		5.9
T19S	R43E		3	NWSW			Irrigation		5.7
T19S	R43E		3	NWSW			Irrigation		17.3
T19S	R43E		3	NWSW		,	Irrigation		5.3
T19S	R43E		3	SWSW		11110	Irrigation		17.4
T19S	R43E		3	SWSW		3/4/4/2	Irrigation		3.4
T19S	R43E		3	swsw		3432	Irrigation		0.8
T19S	R43E		3	NESE		3632	Irrigation		12.5
T19S	R43E		3	NESE		31433	Irrigation		7.3
T19S	R43E		3	NESE			Irrigation		1.3
T19S	R43E		3	NWSE		Willel	Irrigation	1 7 3	1.7
T19S	R43E		3	NWSE		WKIS	Irrigation		20.4
T19S	R43E		3	NWSE		Will	Irrigation		0.7
T19S	R43E		3	NWSE		1423	Irrigation		4.3

					OWE	RD		If Irrigation #	If Irrigation # Supplementa
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T19S	R43E		3	SWSE			Irrigation		17.5
T19S	R43E		3	SWSE		7 3. 7	Irrigation		1.3
T19S	R43E		3	SWSE			Irrigation		14
T19S	R43E		3	SESE		127.5	Irrigation		10.1
T19S	R43E		3	SESE		T Z	Irrigation		16.2
T19S	R43E		3	SESW			Irrigation		3
T19S	R43E		3	SESW		177	Irrigation		14.9
T19S	R43E		3	SESW		Falls	Irrigation	1 1	16
T19S	R43E		4	NENE	1	T ISV	Irrigation		2.3
T19S	R43E		4	NENE	1	T iz	Irrigation	1 1 1	1.9
T19S	R43E		4	NENE	1	To a feet	Irrigation		6.6
T19S	R43E		4	NENE	1	1 300	Irrigation		0.1
T19S	R43E		4	NWNE	2	1 0/2 5	Irrigation		1.6
T19S	R43E		4	NWNE	2	100	Irrigation		3.3
T19S	R43E		4	SENE		190	Irrigation		6.5
T19S	R43E		4	SENE		1 21 10	Irrigation		16.9
T19S	R43E		4	SENE	7 (	1 - 1 - 1 - 1 - 1 - 1 - 1	Irrigation		6.3
T19S	R43E		4	SENE		alve.	Irrigation		0.2
T19S	R43E		4	NESE		T SHEET	Irrigation		13.7
T19S	R43E		10	NENE		I has	Irrigation		29.9
T19S	R43E		10	NWNE		1 1000	Irrigation		38.6
T19S	R43E		10	SWNE		1 190 10	Irrigation		9.2
T19S	R43E		10	NENW		Fund	Irrigation		25.7
T19S	R43E		10	NENW	1 7	7 1/1030	Irrigation	2	13.2
T19S	R43E		10	NWNW		14/5014	Irrigation		16
T19S	R43E		10	SWNW	1		Irrigation		0.1
T19S	R43E		10	SENW		The same	Irrigation		9.1
T19S	R43E		10	SENW			Irrigation		4
T19S	R43E		11	NENE		T Marin	Irrigation		33.5
T19S	R43E		11	NENE		T Faller	Irrigation		0.3
T19S	R43E		11	NWNE		T manufacture	Irrigation		1.1
T19S	R43E		11	SENE			Irrigation	1 1	10.7
T19S	R43E		11	NWNW		1,19.20	Irrigation		1.1
T19S	R43E		12	NENE		Tana	Irrigation		35.6
T19S	R43E		12	NENE			Irrigation		0.6
T19S	R43E		12	NWNE			Irrigation		28.4
T19S	R43E		12	SWNE			Irrigation		19.7
T19S	R43E		12	SWNE		1 1992	Irrigation		6.7
T19S	R43E		12	SWNE		1 100	Irrigation		7.6
T19S	R43E		12	SENE		1327	Irrigation		7.8
T19S	R43E		12	SENE		100	Irrigation	1	17.1
T19S	R43E		12	SENE		y w w	Irrigation	7	7.8
T19S	R43E	-	12	NENW		177.00	Irrigation	1 1	5.6
T19S	R43E		12	NENW		12191	Irrigation		8.7
T19S	R43E		12	NWNW			Irrigation	+	6.4
T19S	R43E		12	NWNW		1 100	Irrigation	1 1 1	20
T19S	R43E		12	NWNW		+ - 02	Irrigation	1	4.4
T19S	R43E		12	SWNW	1 0	T. Nation	Irrigation		34.9
T19S	R43E		12	SENW		1 3 114	Irrigation		38.5
T19S	R43E		12	NESW		7 711	Irrigation		25.5
T19S	R43E		12	NESW		Taga et	Irrigation		25.5

					OW	NU		If Irrigation #	If Irrigation # Supplemental
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T19S	R43E		12	NWSW			Irrigation		6.1
T19S	R43E		12	NESE		1 35 115	Irrigation		19.4
T19S	R43E		12	NESE		1 24 33	Irrigation		14.8
T19S	R43E		12	NESE		1 3/36	Irrigation		0.3
T19S	R43E		12	NWSE			Irrigation		31.6
T19S	R43E		12	NWSE		The case	Irrigation		1.2
T19S	R43E		12	NWSE		In West	Irrigation		5.6
T19S	R43E		12	SWSE		West	Irrigation		2.4
T19S	R43E		12	SWSE			Irrigation		3.1
T19S	R43E		12	SWSE		L. Breit	Irrigation		9.7
T19S	R43E		12	SWSE		10.30	Irrigation	3	0.1
T19S	R43E		12	SESE			Irrigation		35.2
T19S	R43E		12	SESW		31/1/1	Irrigation		0.3
T19S	R44E		1	NENE	1	34.78	Irrigation		18.8
T19S	R44E		1	NENE	1	1932	Irrigation		17.4
T19S	R44E		1	NWNE	2	34.36	Irrigation		23.5
T19S	R44E		1	NWNE	2	3438	Irrigation		13.6
T19S	R44E		1	SWNE		1.19	Irrigation		16.8
T19S	R44E		1	SWNE		3238	Irrigation		13.3
T19S	R44E		1	SENE			Irrigation		1
T19S	R44E		1	NENW	3	111111	Irrigation		4.2
T19S	R44E		1	NENW	3		Irrigation		15.2
T19S	R44E		1	NENW	3		Irrigation		7.5
T19S	R44E		1	NENW	3	1 4 (8)	Irrigation		0.7
T19S	R44E		1	NWNW	4	W. W.	Irrigation		21
T19S	R44E		1	NWNW	4	15-16	Irrigation	3	13.5
T19S	R44E		1	SWNW		44.41	Irrigation		8.2
T19S	R44E		1	SWNW		1 1/4 1	Irrigation	7	3.6
T19S	R44E		1	SWNW			Irrigation		1.7
T19S	R44E		1	SWNW		3/138	Irrigation		5.6
T19S	R44E		1	SENW		3/1/49	Irrigation		36.9
T19S	R44E		1	NESW		3.432	Irrigation		14.8
T19S	R44E		1	NWSW		W.W	Irrigation		37.4
T19S	R44E		1	swsw		31/38	Irrigation	3	36
T19S	R44E		1	NESE		3 3 3 9	Irrigation		4.2
T19S	R44E		1	NWSE		7 7 7	Irrigation		3
T19S	R44E		1	SWSE		311.44	Irrigation		12.1
T19S	R44E		1	SWSE		310.00	Irrigation		4.5
T19S	R44E		1	SESE		364	Irrigation	T T	22.3
T19S	R44E		1	SESE		3/42	Irrigation		1.1
T19S	R44E		1	SESE		7 1 1	Irrigation		0.2
T19S	R44E		1	SESW		1 11 12	Irrigation	1 1 3	10.5
T19S	R44E		2	NENE	1	10.19	Irrigation		38
T19S	R44E		2	NWNE	2	Twat	Irrigation	T	14
T19S	R44E		2	NWNE	2		Irrigation		6.4
T19S	R44E		2	NWNE	2		Irrigation		2.6
T19S	R44E		2	NWNE	2	nana.	Irrigation		6.4
T195	R44E		2	NWNE	2		Irrigation		1
T19S	R44E		2	SWNE	-	7	Irrigation		38.8
T195	R44E		2	SENE			Irrigation		36.2
T195	R44E R44E		2	NENW	3		Irrigation		7.3

REVENVED

								OWRD	If Irrigation #
								If Irrigation #	Supplemental
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T19S	R44E		2	NENW	3	5/36/4/	Irrigation		21.8
T19S	R44E		2	NWNW	4	3.3	Irrigation		0.7
T19S	R44E		2	SWNW	-		Irrigation		4.6
T19S	R44E		2	SWNW		7 35.815	Irrigation		13.7
T19S	R44E		2	SENW		1574	Irrigation		11.7
T19S	R44E		2	SENW		1334	Irrigation		21.5
T19S	R44E		2	NESW	4		Irrigation		37.1
T19S	R44E		2	NWSW		1 400	Irrigation		9.5
T19S	R44E		2	NWSW		3160	Irrigation		14.6
T19S	R44E		2	NWSW		1902 30	Irrigation		5
T19S	R44E		2	NWSW		1963	Irrigation		1.2
T19S	R44E		2	SWSW		1.073	Irrigation	1 31	35.1
T19S	R44E		2	SWSW		3843	Irrigation	1 3	0.2
T19S	R44E		2	NESE	1	1 market	Irrigation	1 3	4.7
T19S	R44E		2	NESE		Lines	Irrigation		6.2
T19S	R44E		2	NESE		1 188	Irrigation		22.3
T19S	R44E		2	NWSE		1 3 2 3 7	Irrigation		38.2
T19S	R44E		2	SWSE			Irrigation		39
T19S	R44E		2	SESE		1 12 1	Irrigation		20.9
T19S	R44E		2	SESE			Irrigation		5.7
T19S	R44E		2	SESE			Irrigation		7.7
T19S	R44E		2	SESW		•	Irrigation		39.9
T19S	R44E		3	SWSW			Irrigation		3.9
T195	R44E		3	SWSW			Irrigation		0.4
T19S	R44E		3	NESE		7 100	Irrigation	-	6.6
T19S	R44E		3	NESE			Irrigation	-	6.4
T19S	R44E		3	NESE		1 1 1 1 1 1	Irrigation		1
T19S	R44E		3	SWSE		1000	Irrigation		8.7
			3	SWSE	-	1	Irrigation		5.6
T19S	R44E					1 28/25			0.9
T19S	R44E		3	SWSE			Irrigation		4.4
T195	R44E		3	SESE		-	Irrigation		
T19S	R44E		3	SESE		1 3000	Irrigation		8.2
T19S	R44E		3	SESE		- Yesting	Irrigation		2.4
T19S	R44E		3	SESE	1 6		Irrigation		0.2
T19S	R44E		3	SESW			Irrigation		6.4
T19S	R44E		4	NWNE	2		Irrigation		1.5
T19S	R44E		4	SWNE	1 4 5 7		Irrigation		23.1
T19S	R44E		4	NENW	3	200	Irrigation	1 3	12.9
T19S	R44E		4	NWNW	4	WAS	Irrigation		0.7
T19S	R44E		4	SWNW		94239	Irrigation	3 3	22.2
T19S	R44E		4	SWNW	1 0	1 MARK	Irrigation		13.9
T19S	R44E		4	SENW	3 - 4		Irrigation	1	24
T19S	R44E		4	SENW		1 47/65	Irrigation		15
T19S	R44E		4	NESW	1 3	THE WAY	Irrigation		39.2
T19S	R44E		4	NWSW	1.9	17.27	Irrigation		39.4
T19S	R44E		4	NWSW	4	1.54	Irrigation	4	0.4
T19S	R44E		4	swsw		4/24	Irrigation		14
T19S	R44E		4	swsw		The Carlo	Irrigation		18.6
T19S	R44E		4	NESE		YEN	Irrigation		1.3
T19S	R44E		4	NESE		1 400	Irrigation		0.2
T19S	R44E		4	NWSE		With	Irrigation	1 1 1	31.3

					OWR	D		If Irrigation #	If Irrigation # Supplemental
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T19S	R44E		4	NWSE			Irrigation	Timinal y richas	5.4
T19S	R44E		4	NWSE		1 165 4	Irrigation		0.4
T19S	R44E		4	SWSE			Irrigation		33.8
T19S	R44E		4	SWSE		1 1971 18	Irrigation		1.3
T19S	R44E		4	SWSE			Irrigation		0.3
T19S	R44E		4	SESE		W I	Irrigation		16.8
T19S	R44E		4	SESE		1 14 19	Irrigation		0.8
T19S	R44E		4	SESE			Irrigation		4.2
T19S	R44E		4	SESW		100 10	Irrigation		3.6
T19S	R44E		4	SESW	-	167 10	Irrigation		3.2
T19S	R44E		4	SESW		Bio UI	Irrigation		15.3
T19S	R44E		4	SESW		7. 1	Irrigation		10.1
T19S	R44E		5	SENE		1872-10	Irrigation		21.2
T19S	R44E		5	NWNW	4		Irrigation		0.1
T19S	R44E		5	SWNW	-		Irrigation		6.9
T19S	R44E		5	NESE		3 1	Irrigation		2.5
T19S	R44E		5	NESE		-	Irrigation	+	2.5
T19S	R44E		5	NESE	-	_	Irrigation		17.5
T19S	R44E		5	NESE			Irrigation	+	1.2
T19S	R44E		5	SWSE		-	Irrigation		1.6
T19S	R44E		5	SESE			Irrigation		4.1
T19S	R44E		5	SESE		_		_	25.5
T19S	R44E		5	SESE		_	Irrigation		25.5
T19S	R44E		6	NENE	1		Irrigation		0.1
T19S	R44E R44E	-	6	SWNE	1		Irrigation		
T19S	R44E		6	SWNE			Irrigation		13.2
T19S	R44E		6	SENE			Irrigation		0.1
			6				Irrigation		3.3
T19S T19S	R44E		6	SENE			Irrigation		10 7.2
T19S	R44E R44E		6	NWNW	1		Irrigation		
					4	_	Irrigation		22.9
T19S	R44E		6	NWNW	4		Irrigation		6.8
T19S	R44E		6	SWNW	5		Irrigation		3.8
T19S	R44E		6	SWNW	. 5		Irrigation		6.9
T195	R44E		6	SWNW	5		Irrigation		7.7
T19S	R44E		6	SWNW	5		Irrigation		7.8
T19S	R44E		6	SWNW	5		Irrigation		1
T19S	R44E		6	SWNW	5	- 2	Irrigation		0.8
T19S	R44E		6	SENW		-	Irrigation	- 3	0.4
T19S	R44E		6	SENW		1991	Irrigation		0.2
T19S	R44E		6	NESW			Irrigation		18.7
T19S	R44E		6	NWSW	6	-	Irrigation	1	4.1
T19S	R44E		6	NWSW	6		Irrigation		0.7
T19S	R44E		6	NWSW	6		Irrigation		4.5
T19S	R44E		6	NWSW	. 6	1 1 1	Irrigation		5.6
T19S	R44E		6	NWSW	6	W. V	Irrigation		1
T19S	R44E		6	NWSW	. 6		Irrigation	4	1
T195	R44E		6	SWSW	7		Irrigation		25.5
T19S	R44E		6	SWSW	7	N. V.	Irrigation	1	7.4
T19S	R44E		6	SWSW	7	32.11	Irrigation		5.5
T19S	R44E		6	SWSW			Irrigation		0.2
T19S	R44E		6	swsw			Irrigation		0.1

					4.3		OWRD	If Irrigation #	If Irrigation # Supplementa
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T19S	R44E		6	swsw	7	1 20	Irrigation		2.1
T19S	R44E		6	swsw	7		Irrigation		2.8
T19S	R44E		6	NESE		14.10	Irrigation		5
T19S	R44E		6	NESE		W	Irrigation		22.7
T19S	R44E		6	NESE		11/12	Irrigation		1.3
T19S	R44E		6	NWSE		a all	Irrigation		12.4
T19S	R44E		6	NWSE		749.7	Irrigation		8.3
T19S	R44E		6	NWSE		WKIN	Irrigation		7.8
T19S	R44E		6	NWSE		100	Irrigation		0.1
T19S	R44E		6	SWSE		L WILLIAM	Irrigation	1 3	4.5
T19S	R44E		6	SESE		LAND	Irrigation		0.9
T19S	R44E		6	SESE		1. 0. 8.00	Irrigation		2
T19S	R44E		6	SESW		10000	Irrigation		0.7
T19S	R44E		6	SESW		T-Na Est	Irrigation		0.9
T19S	R44E		6	SESW		1 Needle	Irrigation	7 7 9	1.9
T19S	R44E		7	NENE		1 10-11	Irrigation		8.3
T19S	R44E		7	NENE		100	Irrigation	F 5	21
T19S	R44E		7	NENE		18	Irrigation		6.3
T19S	R44E		7	NWNE		112.77	Irrigation	1 1 1	10.5
T19S	R44E		7	NWNE		Verenty I	Irrigation		5.6
T19S	R44E		7	NWNE		T WELL	Irrigation		2.2
T19S	R44E		7	NWNE		1 10 10 10	Irrigation		9.8
T19S	R44E		7	SWNE		T STORY	Irrigation		24.4
T19S	R44E		7	SWNE		1020	Irrigation		3.4
T19S	R44E		7	SWNE		1 - 1027-144	Irrigation		2.4
T19S	R44E		7	SWNE		W247	Irrigation		1.6
T19S	R44E		7	SENE		1 17 17	Irrigation	1 1	27.4
T19S	R44E		7	SENE		934.9	Irrigation		7
T19S	R44E		7	SENE		1 22 1	Irrigation		4
T19S	R44E		7	NWNW	1	1 32077	Irrigation		1
T19S	R44E		7	NESW		1 - 50.17	Irrigation		27.8
T19S	R44E		7	NESW		1 11	Irrigation		9.4
T19S	R44E		7	NWSW	3	1 19.00	Irrigation		52.3
T19S	R44E		7	SWSW	4		Irrigation		2.6
T19S	R44E		7	SWSW	4		Irrigation		36.4
T19S	R44E		7	SWSW	4	T. gets	Irrigation		9.1
T19S	R44E		7	NESE		3939	Irrigation		0.3
T19S	R44E		7	NESE			Irrigation		12.5
T19S	R44E		7	NESE		39.5	Irrigation		8.2
T19S	R44E		7	NESE		7.00	Irrigation		14.2
T19S	R44E		7	NWSE		1000	Irrigation		14.4
T19S	R44E		7	NWSE		781	Irrigation		14.4
T19S	R44E		7	NWSE		1 37 11	Irrigation		6.8
T19S	R44E		7	SWSE			Irrigation		5.7
T19S	R44E		7	SWSE		7 77 7	Irrigation	1	14.5
T19S	R44E		7	SWSE		1 21 1	Irrigation	1.	10.1
T19S	R44E		7	SWSE		MINE	Irrigation		3.3
T19S	R44E		7	SESE		PAGE	Irrigation		14.1
T19S	R44E		7	SESE		T W	Irrigation		15.9
T19S	R44E		7	SESE		179	Irrigation		7.9
T19S	R44E		7	SESW		7 1640	Irrigation	+	24.1

		milet s			OV	VRD		If Irrigation #	If Irrigation # Supplementa
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T19S	R44E		7	SESW			Irrigation		2
T19S	R44E		7	SESW		With	Irrigation	31	1.2
T19S	R44E	,	7	SESW		1 123	Irrigation		1.5
T19S	R44E		7	SESW			Irrigation		0.2
T19S	R44E		8	NENW		apau.	Irrigation		3.7
T19S	R44E		8	NENW		1717	Irrigation	T	32.9
T19S	R44E		8	NENW			Irrigation		0.3
T19S	R44E		8	NWNW			Irrigation		10
T19S	R44E		8	NWNW		1700	Irrigation		11.3
T19S	R44E		8	NWNW		1 2015	Irrigation		6.5
T19S	R44E		8	SWNW	3	3019	Irrigation		1.8
T19S	R44E		8	SWNW		_	Irrigation		28.7
T19S	R44E		8	SENW			Irrigation		26.7
T19S	R44E		8	NESW			Irrigation		0.4
T19S	R44E		8	NESW					10
						1 100	Irrigation		1.6
T19S	R44E		8	NESW			Irrigation		
T19S	R44E		8	NWSW	-		Irrigation		7.3
T19S	R44E		8	NWSW			Irrigation		5.7
T19S	R44E		8	NWSW			Irrigation		7.1
T19S	R44E		8	NWSW		I Jillen	Irrigation		0.9
T19S	R44E		. 8	NWSW			Irrigation		6.5
T19S	R44E		8	NWSW		1 1116	Irrigation		7.1
T19S	R44E		8	SWSW		1 145	Irrigation		7.1
T19S	R44E		8	SWSW			Irrigation		21.9
T19S	R44E		8	SWSW		Tetav	Irrigation		7.6
T19S	R44E		8	SWSW		300	Irrigation		1.9
T19S	R44E		8	NWSE		1 1 1 1 1 1	Irrigation		6.6
T19S	R44E		8	NWSE			Irrigation		7.8
T19S	R44E		8	NWSE		L BMES	Irrigation		0.3
T19S	R44E		8	NWSE			Irrigation		0.1
T19S	R44E		8	SWSE			Irrigation		17.3
T19S	R44E		8	SWSE		100231	Irrigation		1.3
T19S	R44E		8	SWSE		- 1 10 2 10	Irrigation		6.6
T19S	R44E		8	SESW		7,75	Irrigation		8.4
T19S	R44E		8	SESW			Irrigation		4.6
T19S	R44E		9	NENE		l veter	Irrigation		4.2
T19S	R44E		9	NENE		3634	Irrigation		22.7
T19S	R44E		9	NWNE		3-37	Irrigation		15.9
T19S	R44E		9	NWNE			Irrigation		15.5
T19S	R44E		9	SWNE			Irrigation		3.7
T19S	R44E		9	SWNE			Irrigation		3.6
T19S	R44E		9	SWNE			Irrigation		8.1
T19S	R44E		9	SWNE		Tanu	Irrigation		19.7
T19S	R44E		9	SENE			Irrigation		33.2
T19S	R44E		9	NENW		1790	Irrigation		17
T19S	R44E		9	NWNW		1 2 3	Irrigation		2.3
T19S	R44E		9	NWNW			Irrigation		11.1
T19S	R44E		9	NWNW			Irrigation		16.3
T19S	R44E		9	NWNW			Irrigation		4.6
T19S	R44E		9	SWNW		1	Irrigation		12
T19S	R44E		9	NESE			Irrigation		36.1

					1			OWRD If Irrigation #	If Irrigation # Supplemental
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T19S	R44E		9	NWSE		1 163	Irrigation		39.7
T19S	R44E		9	SWSE			Irrigation		38
T19S	R44E		9	SESE		5-285	Irrigation		38
T19S	R44E		10	NENE		I W. P	Irrigation		0.7
T19S	R44E		10	NENE		1 - 1 - 1	Irrigation		0.2
T19S	R44E		10	NENE		1 VIB	Irrigation		0.8
T19S	R44E		10	NENE		1	Irrigation		6.9
T19S	R44E		10	NENE	7	1 . 33	Irrigation		3.8
T19S	R44E		10	NENE		1 Vitu	Irrigation		0.3
T19S	R44E		10	NENE	1	WES	Irrigation	1 9	7.2
T19S	R44E		10	NWNE		9,716	Irrigation	1 9	0.2
T19S	R44E		10	NWNE		T Walls	Irrigation		8.6
T19S	R44E		10	NWNE		1 1 12	Irrigation		6.2
T19S	R44E		10	NWNE		1100	Irrigation		5.7
T19S	R44E		10	NWNE		3 BAR	Irrigation	1 1 1	6.9
T19S	R44E		10	SWNE		The	Irrigation		10.7
T19S	R44E		10	SWNE	7	1 97	Irrigation		24.6
T19S	R44E		10	SENE		TAL	Irrigation		11.5
T19S	R44E		10	SENE			Irrigation		2.6
T19S	R44E		10	NENW			Irrigation		4.5
T19S	R44E		10	NENW		1 3 4	Irrigation		14.9
T19S	R44E		10	NENW	+		Irrigation	- 1	6.5
T19S	R44E		10	NENW	-				4.6
T19S	R44E		10	NWNW		177.00	Irrigation		0.7
T195	R44E R44E		10	NWNW		The same	Irrigation		7
T19S	R44E R44E		10	NWNW			Irrigation Irrigation		3.7
T19S	R44E		10	NWNW		1 100	Irrigation	+	13.3
T195	R44E R44E		10	NWNW			Irrigation		4.2
T19S	R44E		10	SWNW		7			10.7
T195	R44E R44E				-		Irrigation		25.8
T195	R44E R44E		10	SWNW	+		Irrigation	-	22.5
					-		Irrigation		13.8
T19S	R44E		10	SENW			Irrigation		
T195	R44E		10	NESW		2017	Irrigation		11
T19S	R44E		10	NESW			Irrigation		25
T195	R44E		10	NWSW			Irrigation		17.8
T195	R44E		10	NWSW	-	4 200	Irrigation		13.6
T195	R44E		10	SWSW		4	Irrigation		23.6
T19S	R44E		10	SWSW			Irrigation		13.2
T19S	R44E		10	SWSW			Irrigation		0.3
T19S	R44E		10	NESE		1	Irrigation		18.9
T19S	R44E		10	NESE		1 91 CB	Irrigation		16.1
T19S	R44E		10	NWSE			Irrigation		17.5
T19S	R44E		10	NWSE			Irrigation		0.9
T19S	R44E		10	NWSE	-		Irrigation		12.7
T19S	R44E		10	NWSE	4	di K	Irrigation		1.7
T19S	R44E		10	SWSE			Irrigation		0.1
T19S	R44E		10	SWSE			Irrigation	1 3	22.9
T19S	R44E		10	SWSE			Irrigation		12.6
T19S	R44E		10	SWSE			Irrigation		0.1
T19S	R44E		10	SWSE			Irrigation		0.5
T19S	R44E		10	SESE			Irrigation		31.6

					OM	RD		If Irrigation #	If Irrigation # Supplemental
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T19S	R44E	IVICI	10	SESE	GOV LOT	DLC	Irrigation	Trilliary Acres	5.3
T19S	R44E		10	SESE		1 200	Irrigation		0.9
T19S	R44E		10	SESE			Irrigation		0.1
T19S	R44E		10	SESW			Irrigation		11
T19S	R44E		10	SESW			Irrigation		8.7
T19S	R44E		10	SESW			Irrigation		15.8
T19S	R44E		11	NWNE		1 1111	Irrigation		13.2
T19S	R44E		11	NENW			Irrigation		37.7
T19S	R44E		11	NWNW			Irrigation		37.6
T19S	R44E		11	SWNW			Irrigation		3.8
T19S	R44E		11	SWNW			Irrigation		31.1
T19S	R44E		11	SENW			Irrigation		0.5
T19S	R44E		11	SENW			Irrigation		24.9
T19S	R44E		11	SENW			Irrigation		3.6
T19S	R44E		12	NENE			Irrigation		10.9
T19S	R44E		12	NENE	· · ·	1 2 2 2 2 2	Irrigation		6.3
T19S	R44E		12	NWNE			Irrigation		5
T19S	R44E		12	NWNE			Irrigation		12.7
T19S	R44E		12	NWNE		_	Irrigation		2.1
T19S	R44E		12	SWNE			Irrigation		16.7
T19S	R44E		12	SWNE			Irrigation		5.1
T19S	R44E		12	SENE			Irrigation		30.1
T19S	R44E		12	SENE		_	Irrigation		2.5
T19S	R44E		12	SWNW			Irrigation		3.2
T19S	R44E		12	SWNW			Irrigation		10.9
T19S	R44E		12	SWNW		1 1 1 1 1 1	Irrigation		12
T19S	R44E		12	SENW			Irrigation		4.6
T19S	R44E		12	SENW			Irrigation		6.6
T19S	R44E		12	SENW			Irrigation		0.2
T19S	R44E		12	NESE			Irrigation		35.9
T19S	R44E		12	NESE			Irrigation		0.3
T19S	R44E		12	NESE			Irrigation		0.8
T19S	R44E		12	NWSE		-	Irrigation		11.1
T19S	R44E		12	NWSE			Irrigation		27.4
T19S	R44E		12	NWSE		1 100 //	Irrigation		0.1
T19S	R44E		12	SWSE		Toron	Irrigation		24.2
T19S	R44E		12	SWSE			Irrigation		14.3
T19S	R44E		12	SESE		LIJ7W	Irrigation		1
T19S	R44E		12	SESE		1 1071	Irrigation		28.2
T19S	R44E		12	SESE		1773	Irrigation		0.8
T19S	R44E		12	SESW			Irrigation		8.4
T19S	R44E		13	NENE		1 3000	Irrigation		4.6
T19S	R44E		13	NENE			Irrigation		0.8
T19S	R44E		13	NENE			Irrigation		0.2
T19S	R44E		13	NWNE		32.00	Irrigation		8
T19S	R44E		13	NWNE		1 1210	Irrigation		5.4
T19S	R44E		13	NWNE		221873	Irrigation		15.8
T19S	R44E		13	NWNE		3	Irrigation		7.5
T19S	R44E		13	SWNE			Irrigation		0.5
T19S	R44E	1	13	SWNE			Irrigation		6.8
T19S	R44E		13	SWNE			Irrigation		3

Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	OWRD If Irrigation # Primary Acres	If Irrigation # Supplemental Acres
T19S	R44E		13	SWNE	\		Irrigation		0.6
T19S	R44E		13	SWNE		3/8/1	Irrigation		0.1
T19S	R44E		13	NENW		1 1950	Irrigation		14.2
T19S	R44E		13	NWNW		175.0	Irrigation		3.6
T19S	R44E		13	SWNW			Irrigation		16.9
T19S	R44E		13	SWNW			Irrigation		1.2
T19S	R44E		13	SWNW	1		Irrigation		2.8
T19S	R44E		13	SENW		1 10 7	Irrigation		11.9
T19S	R44E		13	SENW	1	17,533	Irrigation		12.9
T19S	R44E		13	SENW		1 1/200	Irrigation		2.5
T19S	R44E		13	SENW		0.79	Irrigation		0.8
T19S	R44E		13	NESW			Irrigation		3.8
T19S	R44E		13	NWSW			Irrigation		1.6
T19S	R44E		13	NWSW		V. Car	Irrigation		18.3
T19S	R44E		13	NWSW		90.00	Irrigation	1	8.3
T19S	R44E		13	SWSW	-	U. 000	Irrigation		1.7
T19S	R44E		14	NENE		1/10/1	Irrigation		36.1
T19S	R44E		14	NENE		-	Irrigation	1	0.3
T19S	R44E	-	14	NENE	-	100	Irrigation	1 1	0.9
T19S	R44E		14	NWNE		1 12/10/17	Irrigation		3.7
T19S	R44E		14	NWNE			Irrigation	+ + +	27.6
T19S	R44E	`	14	NWNE		1	Irrigation		5.5
T195	R44E		14	SWNE			Irrigation		30.6
T195	R44E		14	SWNE			Irrigation	1 5	4.5
T195	R44E		14	SENE			Irrigation		12.6
T195	R44E R44E		14	SENE		1 235.7			1.5
T195	R44E R44E		14	SENE			Irrigation		0.6
T195	R44E		14	SENE		1864	Irrigation		18.6
T195			14	NENW			Irrigation		1.6
T195	R44E		14	NENW	1	-	Irrigation		1.3
T195	R44E		14	NENW			Irrigation	1	8.3
T195	R44E R44E		14	NENW		150	Irrigation Irrigation		14
T195				NWNW		1	Irrigation		0.1
T195	R44E		14						3.6
	R44E		14	WNWN		1	Irrigation		
T19S T19S	R44E		14 14	SWNW			Irrigation		20.4
T195	R44E R44E		14	SWNW			Irrigation		0.9
T195	R44E R44E			SENW		7 7 7	Irrigation		19.5
T195			14 14	SENW		1 3 5 6	Irrigation		0.9
T195	R44E		14		4	+	Irrigation		17.1
T195	R44E R44E		14	SENW NESW	-	1	Irrigation		13.1
T195	R44E		14	NESW		1 1000	Irrigation Irrigation		22.5
T19S	R44E		14	NWSW		1	Irrigation	+	7.9
T19S	R44E		14	NWSW		3 3 4 7	Irrigation		2.3
T195	R44E		14	NWSW		1	Irrigation		16.7
T19S	R44E		14	NWSW		1 1873	Irrigation		3.4
T19S	R44E		14	NWSW	-		Irrigation		2
T19S	R44E		14	NWSW		-	Irrigation		0.6
T19S	R44E		14	SWSW		-	Irrigation		1.4
T19S	R44E		14	SWSW			Irrigation		9.4

								OWRD If Irrigation #	If Irrigation # Supplemental
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T19S	R44E		14	NESE		him	Irrigation		7.9
T19S	R44E	=	14	NESE		950	Irrigation		11
T19S	R44E		14	NESE		39-131	Irrigation		13
T19S	R44E		14	NESE		Various	Irrigation		0.6
T19S	R44E		14	NWSE		MICA	Irrigation		17.4
T19S	R44E		14	NWSE		144117	Irrigation		17.4
T19S	R44E		14	SWSE		1000	Irrigation		36.7
T19S	R44E		14	SESE		T Anna	Irrigation		31
T19S	R44E		14	SESW		O'CL	Irrigation		8.6
T19S	R44E		14	SESW			Irrigation	1 - 1	14.9
T19S	R44E		15	NENW		1.70	Irrigation		12.1
T19S	R44E		15	NENW		1 10 11	Irrigation		28.1
T19S	R44E		15	NENW		9750	Irrigation		0.3
T19S	R44E		15	NWNW		HE AL	Irrigation		9.9
T19S	R44E		15	NWNW			Irrigation		16.2
T19S	R44E		15	SWNW			Irrigation		1.2
T19S	R44E		15	SWNW			Irrigation		14.2
T19S	R44E		15	SWNW			Irrigation		0.5
T19S	R44E		15	SWNW		1 100	Irrigation	1	0.4
T19S	R44E		15	SWNW			Irrigation		19
T19S	R44E		15	SENW			Irrigation		0.4
T19S	R44E		15	SENW	-		Irrigation		26.9
T19S	R44E		15	SENW			Irrigation		11.5
T19S	R44E		15	NESW		The same	Irrigation		13.8
T19S	R44E		15	NESW			Irrigation		0.1
T19S	R44E		15	NWSW			Irrigation		17.3
T19S	R44E		15	SWSW			Irrigation		2.1
T19S	R44E		15	SWSW			Irrigation		15.7
T19S	R44E		15	NESE		-	Irrigation		15.3
T19S	R44E		15	NESE		_	Irrigation		6.3
T19S	R44E		15	NESE		_	Irrigation		2
T19S	R44E		15	NWSE		_	Irrigation	+	7.1
T19S	R44E		15	NWSE			Irrigation		11.5
T19S	R44E		15	SWSE			Irrigation		3.2
T19S	R44E		15	SWSE			Irrigation		4.6
T19S	R44E		15	SWSE			Irrigation		11.3
T19S	R44E		15	SWSE			Irrigation	+	9.7
T19S	R44E		15	SWSE			Irrigation		0.1
T19S	R44E		15	SESE	· · · · · · · · · · · · · · · · · · ·	+ 1	Irrigation	7. 7	2.5
T195	R44E		15	SESE		-	Irrigation		14
T19S	R44E		15	SESE		1	Irrigation	9	19
T19S	R44E		15	SESW			Irrigation	<del></del>	4.3
T195	R44E		15	SESW			Irrigation		6.1
T19S	R44E		15	SESW			Irrigation	1	16.2
T195	R44E		16	SWNE		+	Irrigation	<del></del>	26
T195	R44E		16	SENE			Irrigation	+	7.4
T195	R44E		16	SENE			Irrigation	<del></del>	11.8
T195	R44E		16	SENE	-		Irrigation		10.2
T195	R44E R44E		16	SENW		-	Irrigation		8.1
T195	R44E R44E		16	NESW					0.2
1132	R44E R44E		16	NESW		_	Irrigation Irrigation	+	4.2

							C	MHU	If Irrigation #
								If Irrigation #	Supplementa
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T19S	R44E		16	NESE		15/19/16	Irrigation		2.6
T19S	R44E		16	NESE		19940	Irrigation		4
T19S	R44E		16	NESE		214.34	Irrigation		4.8
T19S	R44E	1	16	NWSE		392.	Irrigation		2.2
T19S	R44E		16	NWSE		L Such	Irrigation		32.1
T19S	R44E		17	NENE			Irrigation		8
T19S	R44E		17	NENE		FERRICAL STREET	Irrigation		7
T19S	R44E		17	NWNE			Irrigation		6.3
T19S	R44E		17	NWNE		4.00	Irrigation		6.6
T19S	R44E		17	NWNE		3058	Irrigation		6
T19S	R44E		17	NWNE		Mond	Irrigation		2.6
T19S	R44E		17	SWNE		Vertor	Irrigation		2.5
T19S	R44E		17	SWNE		I wave	Irrigation		8.7
T19S	R44E		17	SWNE		1 36 91	Irrigation	7	3.3
T19S	R44E		17	SWNE		W -2	Irrigation		1.5
T19S	R44E		17	SENE	1	1 10/232	Irrigation		4.9
T19S	R44E		17	SENE		3714	Irrigation		18.3
T19S	R44E		17	NENW		1	Irrigation		6.3
T19S	R44E		17	NENW		31900	Irrigation		18
T19S	R44E		17	NENW		- Helola	Irrigation	113	12.4
T19S	R44E		17	NWNW		3300	Irrigation		33.8
T19S	R44E		17	NWNW	1	777.00	Irrigation		0.8
T19S	R44E		17	SWNW		1997311	Irrigation		36.5
T19S	R44E		17	SENW		a design	Irrigation	T 1 10	4.2
T19S	R44E		17	SENW		Lane.	Irrigation		32
T19S	R44E		17	NESW	7	Luneus	Irrigation		2.7
T19S	R44E		17	NWSW		WELFE	Irrigation	1 1 1	3.8
T19S	R44E		18	NENE		19/19/12	Irrigation		13.2
T19S	R44E		18	NENE		64.32	Irrigation		1.4
T19S	R44E		18	NENE		1 1 1 1 1 1	Irrigation		10
T19S	R44E		18	NENE	1		Irrigation		9.8
T19S	R44E		18	NENE		ALE ALE	Irrigation		0.4
T19S	R44E		18	NWNE		38.44	Irrigation		33.3
T19S	R44E		18	NWNE			Irrigation		0.1
T19S	R44E		18	NWNE		ARC/	Irrigation		3.6
T19S	R44E		18	SWNE			Irrigation		10.6
T19S	R44E		18	SWNE		1 3 500	Irrigation		1.2
T19S	R44E		18	SENE		1 1 1 1 1 1	Irrigation		6.8
T19S	R44E		18	SENE	-	Light of the last	Irrigation		4.5
T19S	R44E		18	SENE		Value at	Irrigation		8.3
T19S	R44E		18	SENE		1 Weyler	Irrigation		11.5
T19S	R44E		18	SENE			Irrigation		1.8
T19S	R44E		18	NENW		ye-shore	Irrigation		10.9
T19S	R44E		18	NENW		D. Garage	Irrigation	1 5	11.9
T19S	R44E		18	NWNW	1	1 40	Irrigation		3.5
T19S	R44E		18	NWNW	1	100	Irrigation		4
T19S	R44E	-	22	NENE	1	1000	Irrigation		6.9
T19S	R44E		22	NENE		1	Irrigation		14.4
T19S	R44E		22	NENE			Irrigation		6.9
T19S	R44E		22	NENE		-	Irrigation		0.5
T195	R44E R44E		22	NWNE			Irrigation	+	11.8

					OM	RU		If Irrigation #	If Irrigation # Supplementa
Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	Primary Acres	Acres
T19S	R44E		22	NWNE			Irrigation		2.7
T19S	R44E		22	SWNE			Irrigation	3.0	30.8
T19S	R44E		22	SENE		7 22 51	Irrigation		2.7
T19S	R44E		22	SENE		127/14	Irrigation		17
T19S	R44E		22	SENE			Irrigation		12.6
T19S	R44E		22	NENW		3/63/4	Irrigation		0.9
T19S	R44E		22	SWNW			Irrigation		4.1
T19S	R44E		22	SENW			Irrigation		16.5
T19S	R44E		22	SENW		T Finyar	Irrigation		7.7
T19S	R44E		22	SENW		1 1 1 1 1 1 1	Irrigation		1.6
T19S	R44E		22	NESW			Irrigation		7.7
T19S	R44E		22	NWSW		31127	Irrigation		7.6
T19S	R44E		22	swsw			Irrigation		11.9
T19S	R44E		22	NESE		31196	Irrigation		12.6
T19S	R44E		22	SESW		38%	Irrigation		25.8
T19S	R44E		22	SESW		TENER	Irrigation		0.1
T19S	R44E		23	NENE		100	Irrigation		0.9
T19S	R44E		23	NENE			Irrigation		1.4
T19S	R44E		23	NWNE		7/1	Irrigation		20.9
T19S	R44E		23	NWNE		7 10011	Irrigation		5.6
T19S	R44E		23	NWNE		Lulyva	Irrigation		5.6
T19S	R44E		23	SWNE		T Washington	Irrigation		2.3
T19S	R44E		23	NENW			Irrigation		25
T19S	R44E		23	NENW		1000	Irrigation		0.3
T19S	R44E		23	NWNW			Irrigation		10.9
T19S	R44E		23	SWNW		100	Irrigation		25.1
T19S	R44E		23	SENW			Irrigation		0.3
T19S	R44E		23	SENW		1 3.43.1	Irrigation		13.2
T19S	R44E		23	SENW		1972.1	Irrigation		0.8
T19S	R45E		6	NENE	1	1 100	Irrigation		13.7
T19S	R45E		6	NWNE	2		Irrigation		31.2
T195	R45E		6	NWNE	2		Irrigation		6.5
T195	R45E		6	SWNE		7000	Irrigation		5.2
T19S	R45E		6	SWNE			Irrigation		9.1
	R45E		6	SWNE		1000			0.4
T19S	R45E		6	SWNE			Irrigation		3.8
T19S			6	SWNE			Irrigation		3.2
T19S	R45E		6	SENE			Irrigation		0.7
T19S	R45E		6	NENW	3	2017	Irrigation		11.6
T19S	R45E R45E		6	NWNW	4		Irrigation Irrigation		7.3
T19S			6	NWNW	4		Irrigation		10.9
T19S	R45E								12.4
T19S	R45E		6	NWNW	4	21136	Irrigation		3.2
T19S	R45E		6	NWNW			Irrigation		
T19S	R45E		6	NWNW	4		Irrigation	4	3.7
T19S	R45E		6	SWNW	5		Irrigation	+	3.7
T19S	R45E		. 6	SWNW	5	THE STATE OF	Irrigation	0 9	17.5
T19S	R45E		6	SWNW	5	1839	Irrigation	世景	3.5
T19S	R45E		6	SENW		1. 11/12/1	Irrigation	3	1.2
T19S	R45E		6	SENW		3//31	Irrigation	TH -	1.4
TIOC	R45E	1	6	SWSE		49.57	Irrigation	M M	9.1

Twp	Rng	Mer	Sec	QQ	Gov Lot	DLC	Use	If Irrigation # Primary Acres	If Irrigation # Supplemental Acres
T19S	R45E		6	SWSE			Irrigation		0.2
T19S	R45E		7	NWNE			Irrigation		7.6
T19S	R45E		7	NWNE			Irrigation		1
T19S	R45E		7	NENW			Irrigation		35
T19S	R45E		7	SWNW	2		Irrigation		38.9
T19S	R45E	Α	7	SENW			Irrigation		11.4
T19S	R45E		7	SENW			Irrigation		4
T19S	R45E		7	NWSW	3		Irrigation		15.7
T19S	R45E		7	NWSW	3		Irrigation		5.3
T19S	R45E		7	SWSW	4		Irrigation		0.7

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