

Confidential Memo

To: Merv Lapin, Eric Eves
Cc: Scott Grosscup
From: Tyler Benton
Date: 11/7/2018
Re: Red Mountain Ranch EQR Assessment and Preliminary Historical Consumptive Use Analysis of Parcels 1 and 2



Wilson Water Group (WWG) has calculated preliminary water use estimates associated with development of lands owned by Red Mountain Ranch located east of the Town of Eagle, on the north side of the Eagle River. In total, these parcels are intended to be developed with up to 175 residential units on seven different parcels, Parcel 1 through Parcel 7. Though specific development plans have not yet been finalized, Wilson Water Group has based this analysis on an initial Concept Plan prepared by landscape architect Dennis Anderson dated March 16, 2017¹. The Concept Plan outlines potential development that may occur on each parcel. Though actual development will vary between parcels, WWG understands that future development cannot exceed 175 residential units in combination on the seven parcels.

For the purposes of this memorandum, WWG has estimated the number of Equivalent Residential Units (EQR) planned for Parcels 1 and 2 independently from the remaining parcels. General water supply assumptions are described for Parcels 3 through 7. WWG has also completed a preliminary consumptive use analysis for Parcel 1 which was historically irrigated by Wilkinson Ditch water rights.

1.0 EQR Analysis and Water Right Dedication (Parcels 1 and 2)

WWG has estimated the number of EQRs associated with future development on Parcels 1 and 2. This assessment is based on the recently revised Eagle Town Code² which dictates an EQR factor per development type. Parcels 1 and 2 will be connected to the existing Town of Eagle potable water supply and sewer systems.

¹ The March 16, 2017 Concept Plan was later updated for Parcel 4 to reflect development of up to 35 Townhomes rather than 13 single family homes.

² EQR Schedule updated as of May 2018.

Table 1 - Draft Red Mountain Ranch Proposed Concept Development Plan* Town of Eagle EQR Assessment for Parcels 1 - 2			
	(1)	(2)	(3)
Dwelling Type	Concept Plan	EQR Per Unit	Total EQR
	Max No. Residential Units		
Studio Multi-Family Units	6	0.40	2.40
2 Bedroom Multi-Family Units	58	0.60	34.80
Duplex	9	0.90	8.10
Single Family Homes	10	1.00	10.00
Commercial (5,000 sqft)		2.50	2.50
Restaurant (5,000 sqft)		3.50	3.50
Total	83		61.30

(1) Estimated values based on conversation with Merv Lapin on November 7, 2018. Actual development may not reflect the current Concept Plan, but final development will not exceed a total of 75 residential units on Parcel 1, and 8 residential units on Parcel 2. EQRs may be credited back to the developer for non-potable irrigation water rights.

(2) Sourced from Town of Eagle's municipal code EQR schedule updated May 2018.

(3) Col 1 x Col 2

*Note- Parcels 1 and 2 are anticipated to be supplied with potable water via Town of Eagle; outdoor irrigation will be provided by surface water rights owned by developer.

1.1 Outdoor Irrigation and EQR Credit Analysis (Parcels 1 and 2)

All outdoor irrigation for Parcels 1 and 2 will be provided by onsite raw water sourced from Red Mountain Ranch owned water rights in the Wilkinson Ditch. It is anticipated that the outdoor irrigation supply will be provided via wells or pump stations from the Eagle River, which will operate as alternate points of diversion of the Wilkinson Ditch water right. Current land development plans call for approximately 2.88 acres to be irrigated on Parcel 1 and Parcel 2.

The Town of Eagle offers EQR credits to land developers for providing non-potable water sources to serve outdoor irrigation demands. Currently the Town offers 0.25 EQR credits for every 2,500 sqft of irrigation sourced from developer owned non-potable supplies. This credit only applies to irrigation associated with residential development and not with parklands. Of the estimated 2.88 acres to be irrigated, approximately 1.57 acres are eligible for EQR Credits, while the remaining 1.31 acres are intended as parks and irrigation surrounding the commercial space. Based on the 0.25 EQR credit to 2,500 sqft rate, Red Mountain Ranch would be eligible for a 6.83 EQR credit. However, if the higher 0.25 EQR credit to 1,000 sqft rate is applied, the credit would increase to 17.06 EQR.

1.2 Required Water Dedication (Parcels 1 and 2)

WWG understands that the Town of Eagle requires water rights to be dedicated back to the Town when lands are annexed. Currently, Town code specifies a ratio of 0.95 acre-feet for each EQR. Based on this dedication rate and the EQR assessment shown in Table 3, Red Mountain Ranch would be required to dedicate up to 58.24 acre-feet to annex Parcels 1 and 2. However,

considering non-potable irrigation credits, the dedication requirement would be reduced to 51.41 acre-feet or 41.18 acre-feet depending on the EQR credit assumption.

2.0 Planned Water Use at Parcel 3 through Parcel 7

Based on current infrastructure limitations of the Town of Eagle, Parcels 3 through 7 cannot be tied into the existing Town water and sewer systems. Because of this, development of these parcels will require independent systems to be developed and constructed on each parcel. At this time, potable and non-potable water supplies would be developed using new wells drilled on each parcel, or pump stations from the Eagle River. It is anticipated that the outdoor irrigation well diversions would operate as alternate points of diversion of the Warren Ditch or Wilkinson Ditch. Potable water demands would be sourced from onsite wells or pump stations from the Eagle River and operate as augmented structures using historic consumptive use credits. Storage in Eagle Park Reservoir is needed to cover out-of-priority potable use during winter months.

3.0 Red Mountain Ranch Water Right Ownership

Currently Red Mountain Ranch owns water rights in the Warren Ditch and Wilkinson Ditch which were quantified and decreed in Water Court Case Nos. 84CW659 and 84CW310, Table 2. In 2008, 20.8% of the quantified Red Mountain Ranch ownership was conveyed to the Town of Eagle. As a result, Red Mountain Ranch currently owns 340.12 acre feet of the quantified consumptive use in the Warren Ditch water rights and 33.30 acre feet in the Wilkinson Ditch quantified consumptive use.

TABLE 2

Red Mountain Ranch Water Right Ownership in changed Warren Ditch and Wilkinson Ditch Water Rights

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		(10)		(11)		(12)		(13)		
Water Right Name	WDID	Case No.	Adj. Date	Ap. Date	Admin No.	Priority	Total Absolute	Case No. 84CW659		Case No. 84CW310		Sub-Total		Quit Claim Sale to Town of Eagle		Remaining Net Total		
							(cfs)	(cfs)	(af)	(cfs)	(af)	(cfs)	(af)	(cfs)	(af)	(cfs)	(af)	
Warren Ditch	3700848	CA294	1889-12-17	1885-04-20	12894.00000	32	3.70	3.18		0.37		3.55		0.66		2.89		
		CA294	1889-12-17	1889-10-09	14527.00000	95	2.40	2.07		0.24		2.32		0.43		1.89		
		CA294	1889-12-17	1889-10-09	14527.00000	96	1.60	1.38		0.16		1.54		0.29		1.25		
		CA963	1936-10-3	1922-10-1	30894.26571	450	11.83	8.83		1.04		9.86		1.84		8.02		
		CA1193	1958-7-23	1952-4-30	38753.37375	534	15.00	13.43		1.58		15.00		2.79		12.21		
Total							34.53	28.88	373.96	3.39	43.94	32.27	417.90	6.01	77.78	26.26	340.12	
Wilkinson Ditch	3700858	CA294	1889-12-17	1887-10-30	13817.00000	59	3.10	0.00		0.00		0.00		0.00		0.00		
		CA963	1936-10-3	1915-10-30	30894.24043	427	5.60	0.72		0.00		0.72		0.15		0.57		
Total							8.70	0.72	42.04	0.00	0.00	0.72	42.04	0.15	8.74	0.57	33.30	

Col 8 = Total decreed water right, absolute.

Col 9 = Identified Red Mountain Ranch water right in Case. No. 84CW659. Historic consumptive use quantified for 241.6 ac at 1.73 af/ac

Col 10 = Identified Red Mountain Ranch water right in Case. No. 84CW310. Historic consumptive use quantified for 25.4 ac at 1.73 af/ac

Col 11 = Col 9 + Col 10

Col 12 = Col 9 x 20.8%, per Warranty Deed Dated August 2008

Col 13 = Col 11 - Col 12

Red Mountain Ranch owns an additional interest in the Wilkinson Ditch water right that is associated with historically irrigated lands on Parcel 1³. The acquired water rights associated with Parcel 1 are shown in Table 3. The consumptive use of these water rights has not been quantified in Water Court, however WWG has completed a preliminary historic consumptive use analysis in preparation for a change case.

TABLE 3 - DRAFT								
Red Mountain Ranch Wilkinson Ditch Water Right Ownership associated with Parcel 1								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Water Right Name	WDID	Case No.	Adj. Date	Ap. Date	Admin No.	Priority	Total Absolute	Parcel 1 Acquisition
							(cfs)	(cfs)
Wilkinson Ditch	3700858	CA294	1889-12-17	1887-10-30	13817.00000	59	3.10	0.26
		CA963	1936-10-3	1915-10-30	30894.24043	427	5.60	0.42
Total							8.70	0.69

Col 8 = Total decreed water right, absolute.

Col 9 = Water Rights associated with 14.3 acre Parcel 1 acquired by Red Mountain Ranch. Water Right amounts sourced from Zancanella and Associates memo to Scott Balcomb; re: Shapiro Property/ Nogal Parcel #2; Dated Dec 20, 1994

3.1 Parcel 1 Preliminary Historic Consumptive Use Analysis

The following information has been prepared on behalf of Red Mountain Ranch to support a future change case for Wilkinson Ditch water rights which historically irrigated Parcel 1. The below summary assumes all historically irrigated areas on Parcel 1 would be included in the change case.

3.1.1 Irrigated Acreage Assessment

Aerial photography sourced from the Farm Service Agency and Google Earth was used to assess historical irrigation on Parcel 1. On average, 9.4 acres were irrigated during the 1950 through 1998 study period, Table 4. This study period reflects both dry, wet, and average year types, but excludes the most recent 20 years as aerial imagery does not support irrigation and is not representative of the historical use. Per water commissioner diversion comments, WWG understands irrigation ceased on Parcel 1 due in part to “severe beaver problems” and other ditch maintenance issues. WWG recognizes that this is a selective study period and should be better understood prior to filing for a change case in water court.

³ Note, this Parcel has also been referred to as the Nogal Parcel #3 in other documents.

Table 4			
Parcel 1 Irrigated Acreage Assessment			
Study Period 1950 through 1998			
Year	Acres	Year	Acres
1950	14.3	1975	12.0
1951	14.3	1976	12.0
1952	14.3	1977	12.0
1953	14.3	1978	12.0
1954	14.3	1979*	7.7
1955	14.3	1980	7.7
1956	14.3	1981	7.7
1957	14.3	1982	7.7
1958	14.3	1983*	2.8
1959	14.3	1984	2.8
1960	14.3	1985	2.8
1961	14.3	1986	2.8
1962	14.3	1987	2.8
1963*	14.3	1988	2.8
1964	14.3	1989	2.8
1965	14.3	1990	2.8
1966	14.3	1991	2.8
1967	14.3	1992	2.8
1968*	12.0	1993	2.8
1969	12.0	1994*	1.8
1970	12.0	1995	1.8
1971	12.0	1996	1.8
1972	12.0	1997	1.8
1973	12.0	1998	1.8
1974	12.0	1999*	0.0
AVERAGE IRRIGATED ACREAGE		9.4	

*Irrigated acreage assessed from Google Earth and Farm Service Agency aerial imagery.
Years with available imagery are noted by Asterix.

Appendix 1 includes maps which depict the assessed irrigated acreage on Parcel 1 by year in relation to the planned development.

3.1.2 Wilkinson Ditch Diversion Records

Wilkinson Ditch river headgate diversions are sourced from HydroBase from 1950 through 1998 with the following exceptions:

- 1950, 1954, 1959 through 1969 were filled using headgate diversions documented by W.W. Wheeler and Associates for Case No. 84CW659.
- 1970 through 1973 were filled with average monthly values calculated using 1950 through 1969 diversion data.

To estimate the pro-rata share of river headgate diversions associated with Parcel 1, WWG multiplied by the fraction of water rights associated with Parcel 1 compared to the total

decreed rate, (0.69 cfs divided by 8.7 cfs equals 7.93 percent). Note, WWG also completed an acreage based pro-rata assessment. On average Parcel 1 represents 4.6 percent of total irrigated acreage during the 1950 through 1998 study period, which is less than the 7.93 percent assumed for this preliminary analysis. A ditch loss of 10 percent was applied to river headgate diversions to estimate on farm deliveries. Flood irrigation efficiency was estimated to be 70 percent of farm deliveries.

Appendix 2 shows all Wilkinson Ditch diversion data used in the consumptive use analysis.

3.1.3 Consumptive Use Analysis

The amount of water historically consumed by the Wilkinson Ditch water right on Parcel 1 was estimated using Modified Blaney-Criddle with TR21 crop coefficients and elevation adjustment. Based on the prior Wilkinson Ditch and Warren Ditch change cases, and on-site observations of remnant crops, a 20 percent alfalfa and 80 percent grass pasture mix was assumed. Temperature and precipitation data were sourced from NOAA climate station Eagle County AP (USR0000CGYP); missing precipitation data was filled with historical monthly averages.

Over the 1950 through 1998 study period, consumptive use is estimated to equal 14.9 acre-feet per year on average. This represents 1.59 acre feet of consumptive use per acre, which is slightly less than the 1.73 acre feet per acre rate decreed in Case Nos. 84CW659 and 84CW310.

Appendix 3 shows monthly calculated crop irrigation requirement and diversions to consumptive use.

3.1.4 Return Flow Analysis

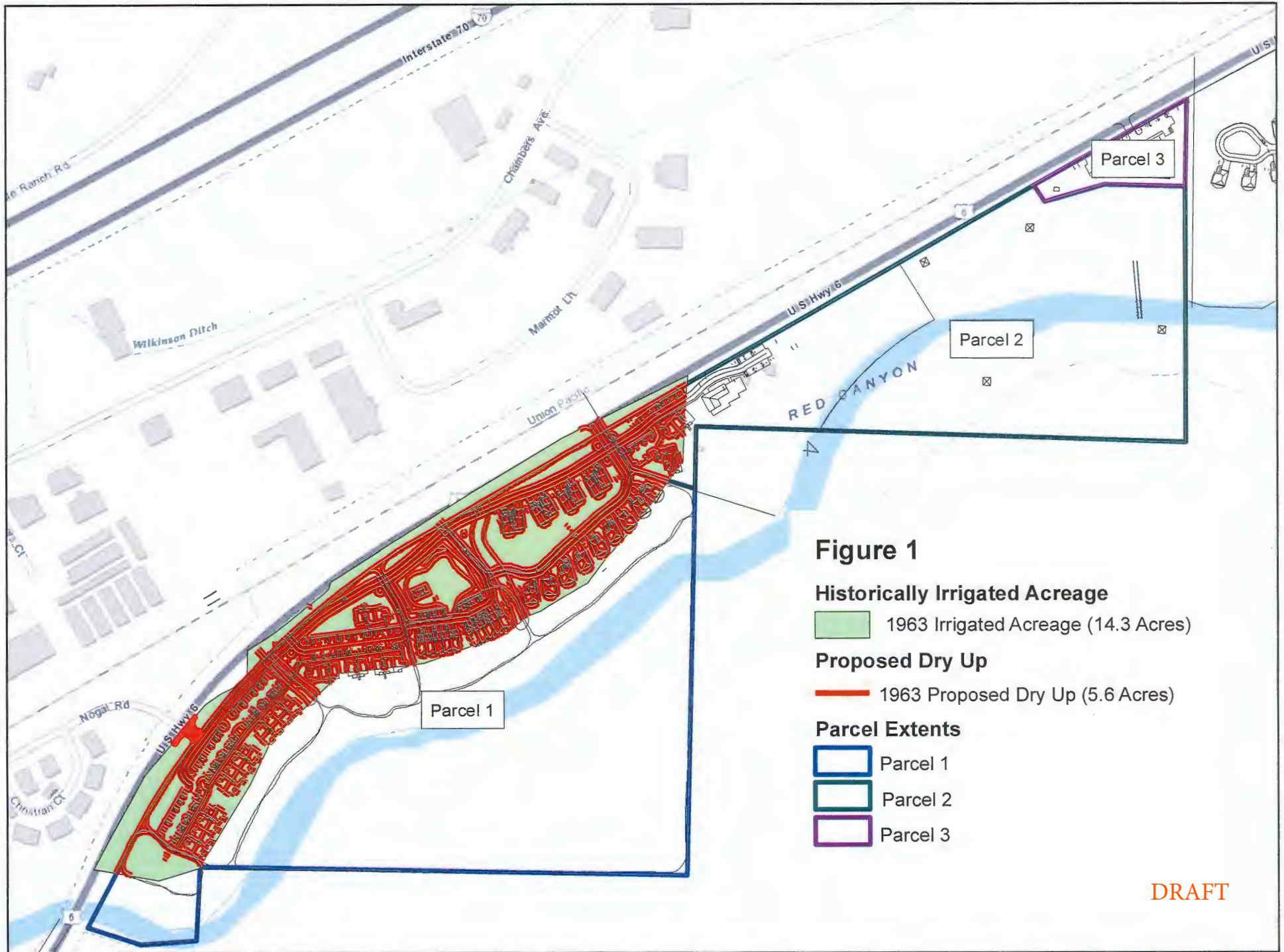
Return flows associated with Wilkinson Ditch irrigation water were assessed as occurring within the same month of application due to the close proximity to the Eagle River and gravely soils. Accordingly, irrigation return flows were calculated to equal the pro-rata share of river headgate diversions less consumptive use. Monthly obligated return flow amounts are summarized in Appendix 4.

4.0 Summary

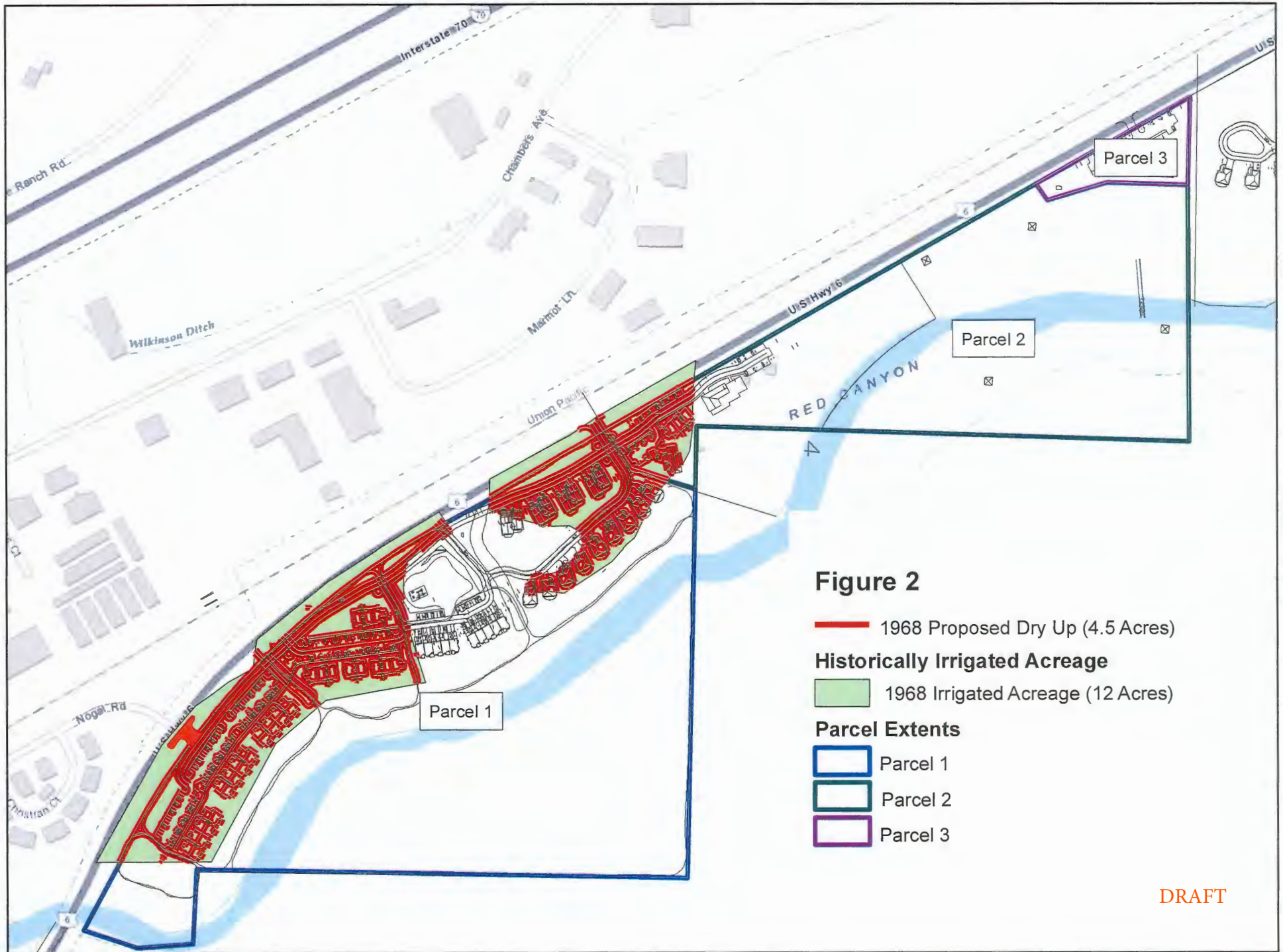
The above assessment represents the best available information. As noted above, the development concept for Parcels 1 through 7 may change as the project progresses. This assessment must be updated accordingly.

Assumptions concerning the consumptive use analysis outlined in this document must be reviewed by Town of Eagle and refined prior to filing for a change case in water court. At this time, it is anticipated that the Town of Eagle would be a co-applicant in a water right change case associated with Parcel 1.

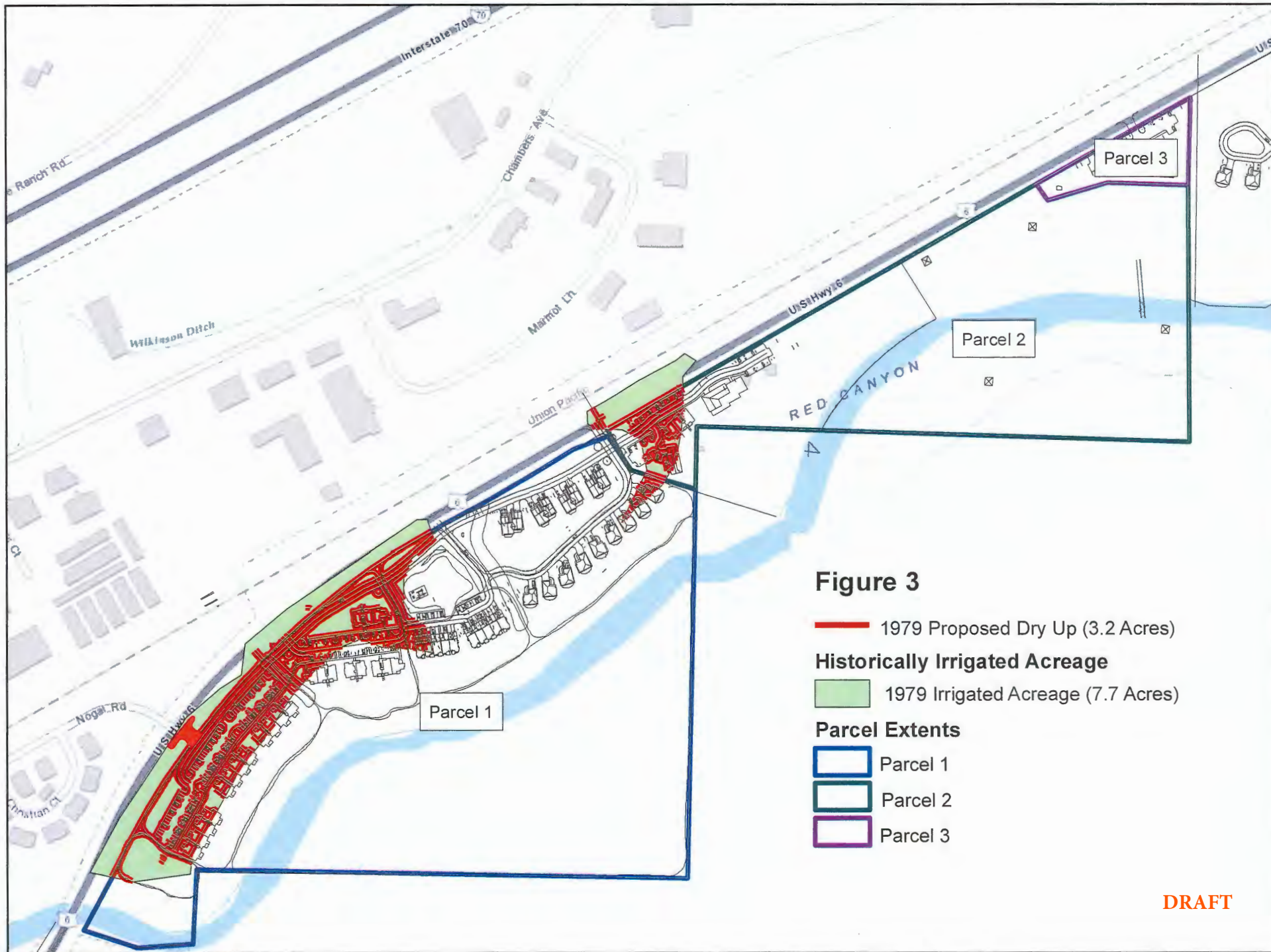
Appendix 1



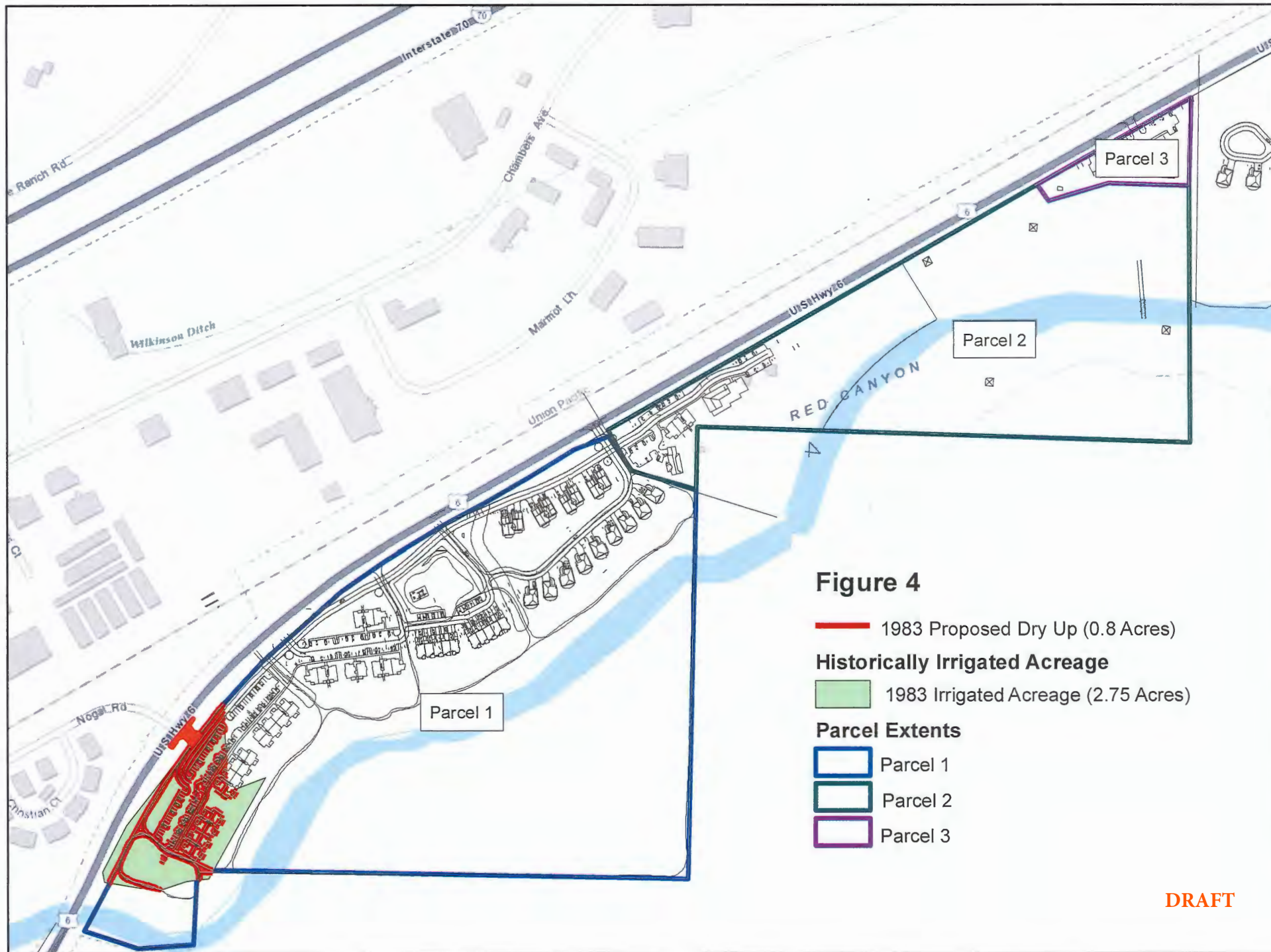
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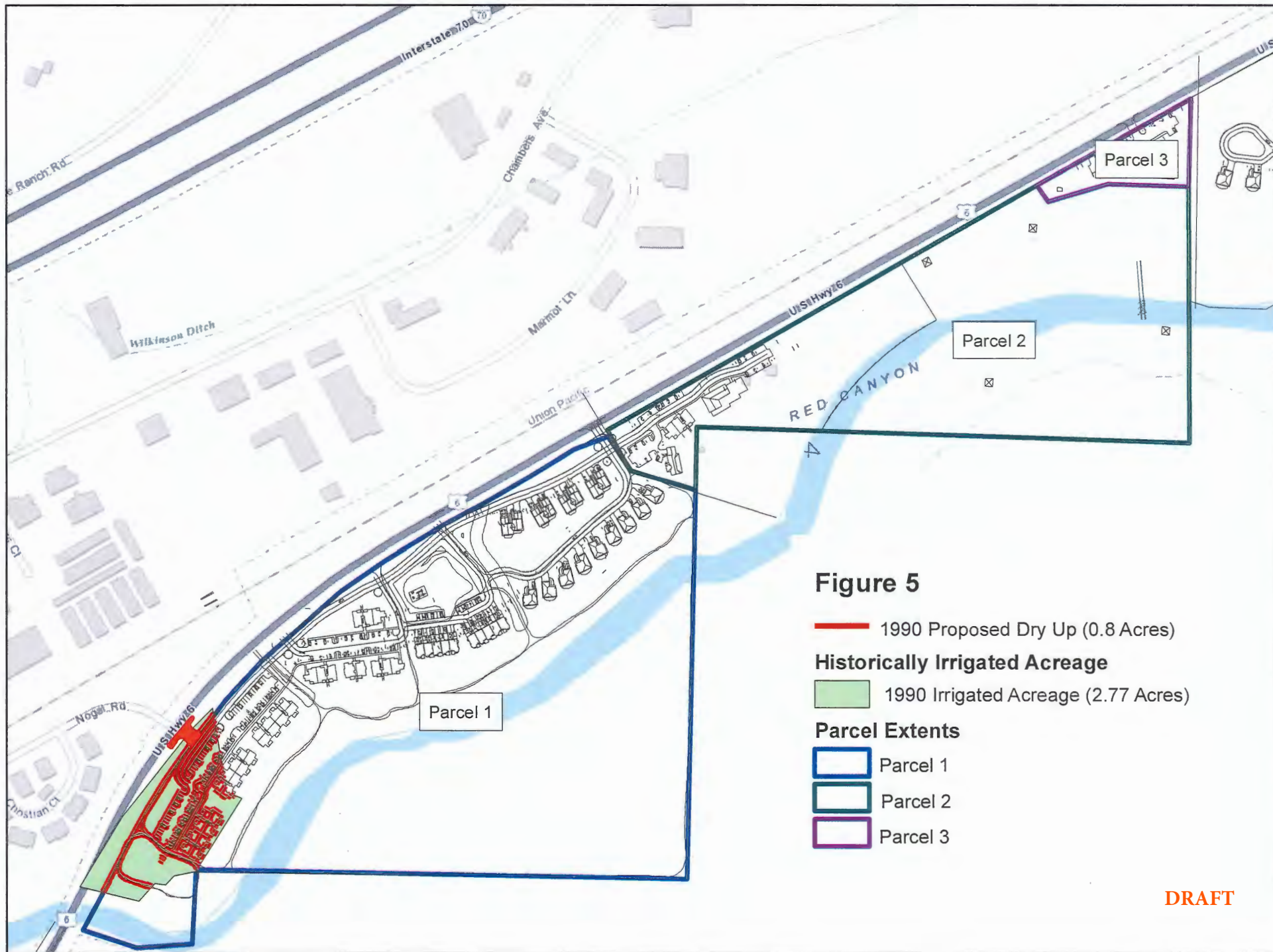
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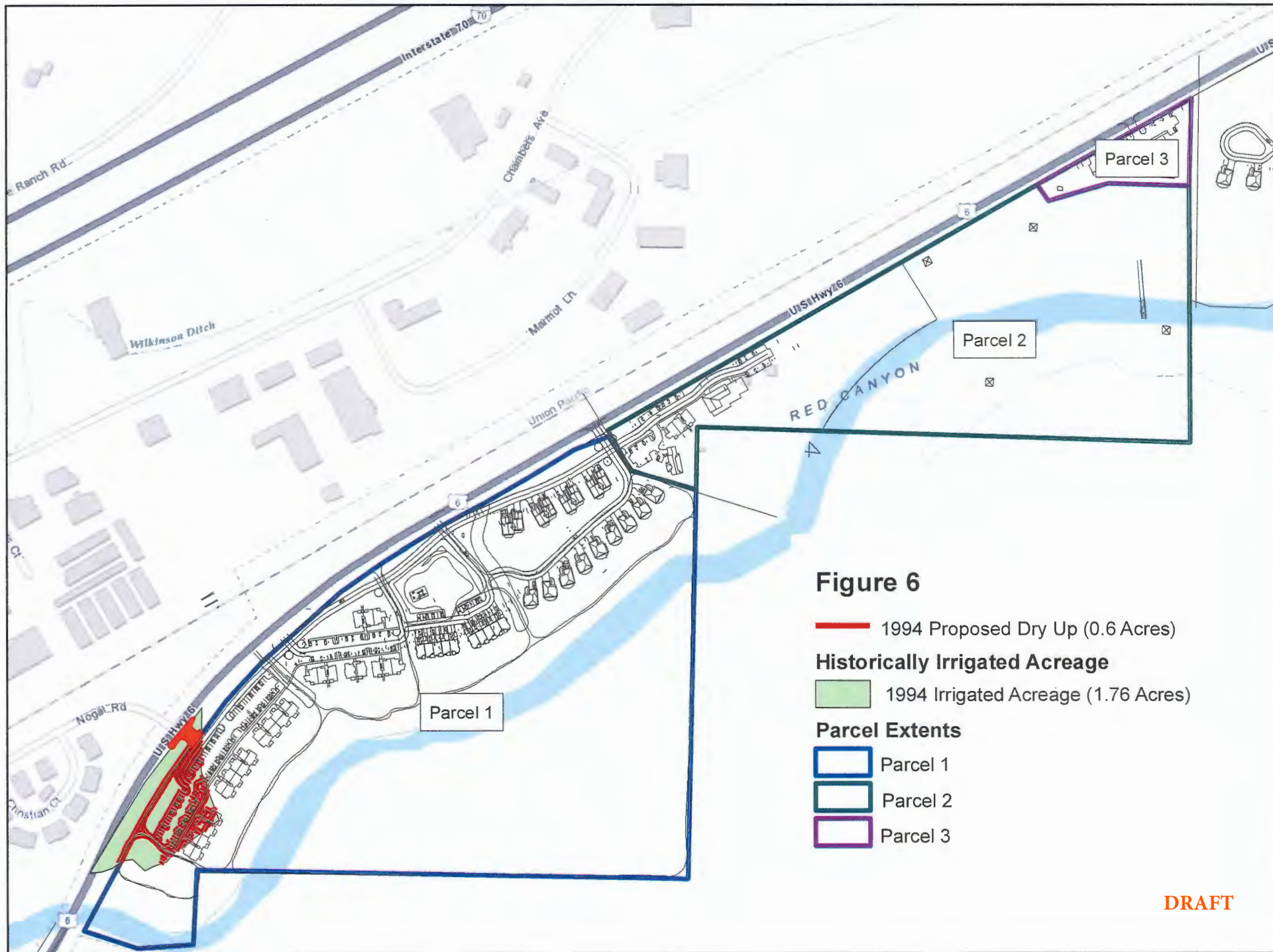
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Appendix 2

Table A - DRAFT Wilkinson Ditch Headgate Diversions (af)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Sum
1950	0.0	0.0	0.0	0.0	387.0	528.0	546.0	546.0	528.0	264.0	0.0	0.0	2,799.0
1951	0.0	0.0	0.0	0.0	0.0	511.7	520.9	479.6	385.6	67.4	0.0	0.0	1,965.2
1952	0.0	0.0	0.0	0.0	139.2	154.7	829.3	920.5	483.0	95.2	0.0	0.0	2,621.9
1953	0.0	0.0	0.0	0.0	0.0	415.1	540.1	258.3	249.9	146.8	0.0	0.0	1,610.2
1954	0.0	0.0	0.0	0.0	400.0	444.0	459.0	459.0	444.0	444.0	0.0	0.0	2,650.0
1955	0.0	0.0	0.0	0.0	0.0	0.0	572.8	934.6	904.5	538.3	0.0	0.0	2,950.2
1956	0.0	0.0	0.0	0.0	127.0	318.0	329.0	329.0	318.0	329.0	0.0	0.0	1,750.0
1957	0.0	0.0	0.0	0.0	223.5	958.0	990.0	969.4	341.6	0.0	0.0	0.0	3,482.5
1958	0.0	0.0	0.0	0.0	320.3	436.8	451.3	451.3	436.8	386.2	0.0	0.0	2,482.7
1959	0.0	0.0	0.0	0.0	348.0	474.0	490.0	490.0	490.0	474.0	0.0	0.0	2,766.0
1960	0.0	0.0	0.0	0.0	260.0	252.0	260.0	260.0	252.0	210.0	0.0	0.0	1,494.0
1961	0.0	0.0	0.0	0.0	170.0	222.0	229.0	229.0	222.0	185.0	0.0	0.0	1,257.0
1962	0.0	0.0	0.0	0.0	302.0	336.0	347.0	347.0	336.0	112.0	0.0	0.0	1,780.0
1963	0.0	0.0	0.0	0.0	233.0	318.0	329.0	329.0	318.0	265.0	0.0	0.0	1,792.0
1964	0.0	0.0	0.0	0.0	125.0	312.0	322.0	322.0	312.0	208.0	0.0	0.0	1,601.0
1965	0.0	0.0	0.0	97.0	273.0	264.0	273.0	273.0	264.0	176.0	0.0	0.0	1,620.0
1966	0.0	0.0	0.0	0.0	91.0	228.0	236.0	236.0	228.0	190.0	0.0	0.0	1,209.0
1967	0.0	0.0	0.0	0.0	208.0	312.0	322.0	322.0	312.0	260.0	0.0	0.0	1,736.0
1968	0.0	0.0	0.0	0.0	218.0	384.0	397.0	397.0	384.0	256.0	0.0	0.0	2,036.0
1969	0.0	0.0	0.0	0.0	310.0	547.0	565.0	565.0	547.0	456.0	0.0	0.0	2,990.0
1970	0.0	0.0	0.0	0.0	206.8	370.8	450.4	455.9	387.8	253.1	0.0	0.0	2,124.8
1971	0.0	0.0	0.0	0.0	206.8	370.8	450.4	455.9	387.8	253.1	0.0	0.0	2,124.8
1972	0.0	0.0	0.0	0.0	206.8	370.8	450.4	455.9	387.8	253.1	0.0	0.0	2,124.8
1973	0.0	0.0	0.0	0.0	206.8	370.8	450.4	455.9	387.8	253.1	0.0	0.0	2,124.8
1974	0.0	0.0	0.0	0.0	249.9	220.2	59.7	92.4	35.7	35.7	0.0	0.0	693.6
1975	0.0	0.0	0.0	0.0	0.0	152.7	430.4	430.4	305.5	184.5	0.0	0.0	1,503.5
1976	0.0	0.0	0.0	0.0	0.0	161.9	209.1	82.5	134.7	141.4	0.0	0.0	729.6
1977	0.0	0.0	0.0	0.0	119.0	297.5	307.4	275.7	179.1	129.1	0.0	0.0	1,307.8
1978	0.0	0.0	0.0	0.0	0.0	305.3	498.1	414.8	74.8	2.0	0.0	0.0	1,295.0
1979	0.0	0.0	0.0	0.0	0.0	249.5	455.0	455.0	339.2	141.4	0.0	0.0	1,640.1
1980	0.0	0.0	0.0	0.0	67.4	250.9	424.3	424.3	380.4	307.4	0.0	0.0	1,854.7
1981	0.0	0.0	0.0	18.2	282.8	273.7	254.3	181.3	123.8	0.0	0.0	0.0	1,134.1
1982	0.0	0.0	0.0	0.0	62.5	432.4	448.9	407.0	422.5	436.6	0.0	0.0	2,209.9
1983	0.0	0.0	0.0	0.0	0.0	221.4	239.8	239.8	195.6	190.6	0.0	0.0	1,087.2
1984	0.0	0.0	0.0	0.0	78.3	172.6	178.3	178.3	172.6	178.3	0.0	0.0	958.4
1985	0.0	0.0	0.0	0.0	71.4	217.8	319.7	319.7	266.4	112.5	0.0	0.0	1,307.5
1986	0.0	0.0	0.0	0.0	0.0	276.1	317.4	172.2	127.9	36.1	0.0	0.0	929.7
1987	0.0	0.0	0.0	0.0	152.3	246.9	238.2	170.2	117.0	0.0	0.0	0.0	924.6
1988	0.0	0.0	0.0	0.0	105.9	169.4	156.9	141.4	123.4	63.9	0.0	0.0	760.9
1989	0.0	0.0	0.0	0.0	0.0	133.3	274.7	91.2	45.6	224.5	0.0	0.0	769.3
1990	0.0	0.0	0.0	0.0	588.7	566.7	500.2	362.2	141.6	0.0	0.0	0.0	2,159.4
1991	0.0	0.0	0.0	0.0	708.1	476.0	737.9	368.9	291.2	0.0	0.0	0.0	2,582.1
1992	0.0	0.0	0.0	0.0	317.4	476.0	491.9	238.0	220.6	57.1	0.0	0.0	1,801.0
1993	0.0	0.0	0.0	0.0	277.7	507.8	491.9	15.9	0.0	0.0	0.0	0.0	1,293.3
1994	0.0	0.0	0.0	0.0	0.0	116.2	171.8	135.3	130.9	126.5	29.8	11.9	722.4
1995	0.0	0.0	0.0	0.0	0.0	65.5	233.7	224.1	178.5	108.1	0.0	0.0	809.9
1996	0.0	0.0	0.0	0.0	59.5	178.5	95.2	77.4	174.5	104.1	0.0	0.0	689.2
1997	0.0	0.0	0.0	0.0	0.0	0.0	66.6	0.0	0.0	0.0	0.0	0.0	66.6
1998	0.0	0.0	0.0	0.0	0.0	0.0	55.5	123.0	119.0	67.4	0.0	0.0	364.9
Average	0.0	0.0	0.0	2.4	165.4	307.5	376.9	338.0	277.7	178.0	0.6	0.2	1,646.7

Diversion records sourced from CDSS except as noted below.

Missing CDSS diversion records filled with average values calculated from 1950-1969

Missing CDSS values filled in from Wilkinson Ditch diversion records documented in Red Mountain Ranch Water Rights Analysis and Plan for Augmentation prepared by W.W. Wheeler & Associates for Case No. 84CW659. Report dated Oct 1984

Table B - DRAFT													
Parcel 1 - Prorata Wilkinson Ditch Diversions (af)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Sum
1950	0.0	0.0	0.0	0.0	30.7	41.9	43.3	43.3	41.9	20.9	0.0	0.0	222.0
1951	0.0	0.0	0.0	0.0	0.0	40.6	41.3	38.0	30.6	5.3	0.0	0.0	155.8
1952	0.0	0.0	0.0	0.0	11.0	12.3	65.8	73.0	38.3	7.5	0.0	0.0	207.9
1953	0.0	0.0	0.0	0.0	0.0	32.9	42.8	20.5	19.8	11.6	0.0	0.0	127.7
1954	0.0	0.0	0.0	0.0	31.7	35.2	36.4	36.4	35.2	35.2	0.0	0.0	210.1
1955	0.0	0.0	0.0	0.0	0.0	0.0	45.4	74.1	71.7	42.7	0.0	0.0	234.0
1956	0.0	0.0	0.0	0.0	10.1	25.2	26.1	26.1	25.2	26.1	0.0	0.0	138.8
1957	0.0	0.0	0.0	0.0	17.7	76.0	78.5	76.9	27.1	0.0	0.0	0.0	276.2
1958	0.0	0.0	0.0	0.0	25.4	34.6	35.8	35.8	34.6	30.6	0.0	0.0	196.9
1959	0.0	0.0	0.0	0.0	27.6	37.6	38.9	38.9	38.9	37.6	0.0	0.0	219.3
1960	0.0	0.0	0.0	0.0	20.6	20.0	20.6	20.6	20.0	16.7	0.0	0.0	118.5
1961	0.0	0.0	0.0	0.0	13.5	17.6	18.2	18.2	17.6	14.7	0.0	0.0	99.7
1962	0.0	0.0	0.0	0.0	23.9	26.6	27.5	27.5	26.6	8.9	0.0	0.0	141.2
1963	0.0	0.0	0.0	0.0	18.5	25.2	26.1	26.1	25.2	21.0	0.0	0.0	142.1
1964	0.0	0.0	0.0	0.0	9.9	24.7	25.5	25.5	24.7	16.5	0.0	0.0	127.0
1965	0.0	0.0	0.0	7.7	21.6	20.9	21.6	21.6	20.9	14.0	0.0	0.0	128.5
1966	0.0	0.0	0.0	0.0	7.2	18.1	18.7	18.7	18.1	15.1	0.0	0.0	95.9
1967	0.0	0.0	0.0	0.0	16.5	24.7	25.5	25.5	24.7	20.6	0.0	0.0	137.7
1968	0.0	0.0	0.0	0.0	17.3	30.5	31.5	31.5	30.5	20.3	0.0	0.0	161.5
1969	0.0	0.0	0.0	0.0	24.6	43.4	44.8	44.8	43.4	36.2	0.0	0.0	237.1
1970	0.0	0.0	0.0	0.0	16.4	29.4	35.7	36.2	30.8	20.1	0.0	0.0	168.5
1971	0.0	0.0	0.0	0.0	16.4	29.4	35.7	36.2	30.8	20.1	0.0	0.0	168.5
1972	0.0	0.0	0.0	0.0	16.4	29.4	35.7	36.2	30.8	20.1	0.0	0.0	168.5
1973	0.0	0.0	0.0	0.0	16.4	29.4	35.7	36.2	30.8	20.1	0.0	0.0	168.5
1974	0.0	0.0	0.0	0.0	19.8	17.5	4.7	7.3	2.8	2.8	0.0	0.0	55.0
1975	0.0	0.0	0.0	0.0	0.0	12.1	34.1	34.1	24.2	14.6	0.0	0.0	119.2
1976	0.0	0.0	0.0	0.0	0.0	12.8	16.6	6.5	10.7	11.2	0.0	0.0	57.9
1977	0.0	0.0	0.0	0.0	9.4	23.6	24.4	21.9	14.2	10.2	0.0	0.0	103.7
1978	0.0	0.0	0.0	0.0	0.0	24.2	39.5	32.9	5.9	0.2	0.0	0.0	102.7
1979	0.0	0.0	0.0	0.0	0.0	19.8	36.1	36.1	26.9	11.2	0.0	0.0	130.1
1980	0.0	0.0	0.0	0.0	5.3	19.9	33.6	33.6	30.2	24.4	0.0	0.0	147.1
1981	0.0	0.0	0.0	1.4	22.4	21.7	20.2	14.4	9.8	0.0	0.0	0.0	89.9
1982	0.0	0.0	0.0	0.0	5.0	34.3	35.6	32.3	33.5	34.6	0.0	0.0	175.2
1983	0.0	0.0	0.0	0.0	0.0	17.6	19.0	19.0	15.5	15.1	0.0	0.0	86.2
1984	0.0	0.0	0.0	0.0	6.2	13.7	14.1	14.1	13.7	14.1	0.0	0.0	76.0
1985	0.0	0.0	0.0	0.0	5.7	17.3	25.4	25.4	21.1	8.9	0.0	0.0	103.7
1986	0.0	0.0	0.0	0.0	0.0	21.9	25.2	13.7	10.1	2.9	0.0	0.0	73.7
1987	0.0	0.0	0.0	0.0	12.1	19.6	18.9	13.5	9.3	0.0	0.0	0.0	73.3
1988	0.0	0.0	0.0	0.0	8.4	13.4	12.4	11.2	9.8	5.1	0.0	0.0	60.3
1989	0.0	0.0	0.0	0.0	0.0	10.6	21.8	7.2	3.6	17.8	0.0	0.0	61.0
1990	0.0	0.0	0.0	0.0	46.7	44.9	39.7	28.7	11.2	0.0	0.0	0.0	171.2
1991	0.0	0.0	0.0	0.0	56.2	37.7	58.5	29.3	23.1	0.0	0.0	0.0	204.8
1992	0.0	0.0	0.0	0.0	25.2	37.7	39.0	18.9	17.5	4.5	0.0	0.0	142.8
1993	0.0	0.0	0.0	0.0	22.0	40.3	39.0	1.3	0.0	0.0	0.0	0.0	102.6
1994	0.0	0.0	0.0	0.0	0.0	9.2	13.6	10.7	10.4	10.0	2.4	0.9	57.3
1995	0.0	0.0	0.0	0.0	0.0	5.2	18.5	17.8	14.2	8.6	0.0	0.0	64.2
1996	0.0	0.0	0.0	0.0	4.7	14.2	7.5	6.1	13.8	8.3	0.0	0.0	54.7
1997	0.0	0.0	0.0	0.0	0.0	0.0	5.3	0.0	0.0	0.0	0.0	0.0	5.3
1998	0.0	0.0	0.0	0.0	0.0	0.0	4.4	9.8	9.4	5.3	0.0	0.0	28.9
Average	0.0	0.0	0.0	0.2	13.1	24.4	29.9	26.8	22.0	14.1	0.0	0.0	130.6

Calculated as Appendix 2 Table A (Total Ditch Diversions) multiplied by 7.93 %. Prorata percentage calculated as 0.69 cfs of the Wilkinson Ditch Water Right associated with Parcel 1 divided by the total Wilkinson Ditch water right of 8.7 cfs

Table C - DRAFT Farm Delivery to Parcel 1 (af)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Sum
1950	0.0	0.0	0.0	0.0	27.6	37.7	39.0	39.0	37.7	18.8	0.0	0.0	199.8
1951	0.0	0.0	0.0	0.0	0.0	36.5	37.2	34.2	27.5	4.8	0.0	0.0	140.3
1952	0.0	0.0	0.0	0.0	9.9	11.0	59.2	65.7	34.5	6.8	0.0	0.0	187.1
1953	0.0	0.0	0.0	0.0	0.0	29.6	38.5	18.4	17.8	10.5	0.0	0.0	114.9
1954	0.0	0.0	0.0	0.0	28.5	31.7	32.8	32.8	31.7	31.7	0.0	0.0	189.1
1955	0.0	0.0	0.0	0.0	0.0	0.0	40.9	66.7	64.6	38.4	0.0	0.0	210.6
1956	0.0	0.0	0.0	0.0	9.1	22.7	23.5	23.5	22.7	23.5	0.0	0.0	124.9
1957	0.0	0.0	0.0	0.0	16.0	68.4	70.7	69.2	24.4	0.0	0.0	0.0	248.5
1958	0.0	0.0	0.0	0.0	22.9	31.2	32.2	32.2	31.2	27.6	0.0	0.0	177.2
1959	0.0	0.0	0.0	0.0	24.8	33.8	35.0	35.0	35.0	33.8	0.0	0.0	197.4
1960	0.0	0.0	0.0	0.0	18.6	18.0	18.6	18.6	18.0	15.0	0.0	0.0	106.6
1961	0.0	0.0	0.0	0.0	12.1	15.8	16.3	16.3	15.8	13.2	0.0	0.0	89.7
1962	0.0	0.0	0.0	0.0	21.6	24.0	24.8	24.8	24.0	8.0	0.0	0.0	127.0
1963	0.0	0.0	0.0	0.0	16.6	22.7	23.5	23.5	22.7	18.9	0.0	0.0	127.9
1964	0.0	0.0	0.0	0.0	8.9	22.3	23.0	23.0	22.3	14.8	0.0	0.0	114.3
1965	0.0	0.0	0.0	6.9	19.5	18.8	19.5	19.5	18.8	12.6	0.0	0.0	115.6
1966	0.0	0.0	0.0	0.0	6.5	16.3	16.8	16.8	16.3	13.6	0.0	0.0	86.3
1967	0.0	0.0	0.0	0.0	14.8	22.3	23.0	23.0	22.3	18.6	0.0	0.0	123.9
1968	0.0	0.0	0.0	0.0	15.6	27.4	28.3	28.3	27.4	18.3	0.0	0.0	145.3
1969	0.0	0.0	0.0	0.0	22.1	39.0	40.3	40.3	39.0	32.5	0.0	0.0	213.4
1970	0.0	0.0	0.0	0.0	14.8	26.5	32.1	32.5	27.7	18.1	0.0	0.0	151.6
1971	0.0	0.0	0.0	0.0	14.8	26.5	32.1	32.5	27.7	18.1	0.0	0.0	151.6
1972	0.0	0.0	0.0	0.0	14.8	26.5	32.1	32.5	27.7	18.1	0.0	0.0	151.6
1973	0.0	0.0	0.0	0.0	14.8	26.5	32.1	32.5	27.7	18.1	0.0	0.0	151.6
1974	0.0	0.0	0.0	0.0	17.8	15.7	4.3	6.6	2.5	2.5	0.0	0.0	49.5
1975	0.0	0.0	0.0	0.0	0.0	10.9	30.7	30.7	21.8	13.2	0.0	0.0	107.3
1976	0.0	0.0	0.0	0.0	0.0	11.6	14.9	5.9	9.6	10.1	0.0	0.0	52.1
1977	0.0	0.0	0.0	0.0	8.5	21.2	21.9	19.7	12.8	9.2	0.0	0.0	93.3
1978	0.0	0.0	0.0	0.0	0.0	21.8	35.5	29.6	5.3	0.1	0.0	0.0	92.4
1979	0.0	0.0	0.0	0.0	0.0	17.8	32.5	32.5	24.2	10.1	0.0	0.0	117.1
1980	0.0	0.0	0.0	0.0	4.8	17.9	30.3	30.3	27.1	21.9	0.0	0.0	132.4
1981	0.0	0.0	0.0	1.3	20.2	19.5	18.1	12.9	8.8	0.0	0.0	0.0	80.9
1982	0.0	0.0	0.0	0.0	4.5	30.9	32.0	29.0	30.2	31.2	0.0	0.0	157.7
1983	0.0	0.0	0.0	0.0	0.0	15.8	17.1	17.1	14.0	13.6	0.0	0.0	77.6
1984	0.0	0.0	0.0	0.0	5.6	12.3	12.7	12.7	12.3	12.7	0.0	0.0	68.4
1985	0.0	0.0	0.0	0.0	5.1	15.5	22.8	22.8	19.0	8.0	0.0	0.0	93.3
1986	0.0	0.0	0.0	0.0	0.0	19.7	22.7	12.3	9.1	2.6	0.0	0.0	66.4
1987	0.0	0.0	0.0	0.0	10.9	17.6	17.0	12.1	8.4	0.0	0.0	0.0	66.0
1988	0.0	0.0	0.0	0.0	7.6	12.1	11.2	10.1	8.8	4.6	0.0	0.0	54.3
1989	0.0	0.0	0.0	0.0	0.0	9.5	19.6	6.5	3.3	16.0	0.0	0.0	54.9
1990	0.0	0.0	0.0	0.0	42.0	40.4	35.7	25.9	10.1	0.0	0.0	0.0	154.1
1991	0.0	0.0	0.0	0.0	50.5	34.0	52.7	26.3	20.8	0.0	0.0	0.0	184.3
1992	0.0	0.0	0.0	0.0	22.7	34.0	35.1	17.0	15.7	4.1	0.0	0.0	128.5
1993	0.0	0.0	0.0	0.0	19.8	36.2	35.1	1.1	0.0	0.0	0.0	0.0	92.3
1994	0.0	0.0	0.0	0.0	0.0	8.3	12.3	9.7	9.3	9.0	2.1	0.8	51.6
1995	0.0	0.0	0.0	0.0	0.0	4.7	16.7	16.0	12.7	7.7	0.0	0.0	57.8
1996	0.0	0.0	0.0	0.0	4.2	12.7	6.8	5.5	12.5	7.4	0.0	0.0	49.2
1997	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0	4.8
1998	0.0	0.0	0.0	0.0	0.0	0.0	4.0	8.8	8.5	4.8	0.0	0.0	26.0
Average	0.0	0.0	0.0	0.2	11.8	21.9	26.9	24.1	19.8	12.7	0.0	0.0	117.5

Calculated as Appendix B Table B (Prorata Diversion) multiplied by 90%. Wilkinson Ditch conveyance losses estimated to equal 10% of Headgate diversions.

Table D - DRAFT													
Delivery to Parcel 1 after Irrigation Efficiency Loss (af)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Sum
1950	0.0	0.0	0.0	0.0	19.3	26.4	27.3	27.3	26.4	13.2	0.0	0.0	139.8
1951	0.0	0.0	0.0	0.0	0.0	25.6	26.0	24.0	19.3	3.4	0.0	0.0	98.2
1952	0.0	0.0	0.0	0.0	7.0	7.7	41.4	46.0	24.1	4.8	0.0	0.0	131.0
1953	0.0	0.0	0.0	0.0	0.0	20.7	27.0	12.9	12.5	7.3	0.0	0.0	80.4
1954	0.0	0.0	0.0	0.0	20.0	22.2	22.9	22.9	22.2	22.2	0.0	0.0	132.4
1955	0.0	0.0	0.0	0.0	0.0	0.0	28.6	46.7	45.2	26.9	0.0	0.0	147.4
1956	0.0	0.0	0.0	0.0	6.3	15.9	16.4	16.4	15.9	16.4	0.0	0.0	87.4
1957	0.0	0.0	0.0	0.0	11.2	47.9	49.5	48.4	17.1	0.0	0.0	0.0	174.0
1958	0.0	0.0	0.0	0.0	16.0	21.8	22.5	22.5	21.8	19.3	0.0	0.0	124.0
1959	0.0	0.0	0.0	0.0	17.4	23.7	24.5	24.5	24.5	23.7	0.0	0.0	138.2
1960	0.0	0.0	0.0	0.0	13.0	12.6	13.0	13.0	12.6	10.5	0.0	0.0	74.6
1961	0.0	0.0	0.0	0.0	8.5	11.1	11.4	11.4	11.1	9.2	0.0	0.0	62.8
1962	0.0	0.0	0.0	0.0	15.1	16.8	17.3	17.3	16.8	5.6	0.0	0.0	88.9
1963	0.0	0.0	0.0	0.0	11.6	15.9	16.4	16.4	15.9	13.2	0.0	0.0	89.5
1964	0.0	0.0	0.0	0.0	6.2	15.6	16.1	16.1	15.6	10.4	0.0	0.0	80.0
1965	0.0	0.0	0.0	4.8	13.6	13.2	13.6	13.6	13.2	8.8	0.0	0.0	80.9
1966	0.0	0.0	0.0	0.0	4.5	11.4	11.8	11.8	11.4	9.5	0.0	0.0	60.4
1967	0.0	0.0	0.0	0.0	10.4	15.6	16.1	16.1	15.6	13.0	0.0	0.0	86.7
1968	0.0	0.0	0.0	0.0	10.9	19.2	19.8	19.8	19.2	12.8	0.0	0.0	101.7
1969	0.0	0.0	0.0	0.0	15.5	27.3	28.2	28.2	27.3	22.8	0.0	0.0	149.4
1970	0.0	0.0	0.0	0.0	10.3	18.5	22.5	22.8	19.4	12.6	0.0	0.0	106.2
1971	0.0	0.0	0.0	0.0	10.3	18.5	22.5	22.8	19.4	12.6	0.0	0.0	106.2
1972	0.0	0.0	0.0	0.0	10.3	18.5	22.5	22.8	19.4	12.6	0.0	0.0	106.2
1973	0.0	0.0	0.0	0.0	10.3	18.5	22.5	22.8	19.4	12.6	0.0	0.0	106.2
1974	0.0	0.0	0.0	0.0	12.5	11.0	3.0	4.6	1.8	1.8	0.0	0.0	34.7
1975	0.0	0.0	0.0	0.0	0.0	7.6	21.5	21.5	15.3	9.2	0.0	0.0	75.1
1976	0.0	0.0	0.0	0.0	0.0	8.1	10.4	4.1	6.7	7.1	0.0	0.0	36.5
1977	0.0	0.0	0.0	0.0	5.9	14.9	15.4	13.8	8.9	6.4	0.0	0.0	65.3
1978	0.0	0.0	0.0	0.0	0.0	15.3	24.9	20.7	3.7	0.1	0.0	0.0	64.7
1979	0.0	0.0	0.0	0.0	0.0	12.5	22.7	22.7	16.9	7.1	0.0	0.0	81.9
1980	0.0	0.0	0.0	0.0	3.4	12.5	21.2	21.2	19.0	15.4	0.0	0.0	92.7
1981	0.0	0.0	0.0	0.9	14.1	13.7	12.7	9.1	6.2	0.0	0.0	0.0	56.7
1982	0.0	0.0	0.0	0.0	3.1	21.6	22.4	20.3	21.1	21.8	0.0	0.0	110.4
1983	0.0	0.0	0.0	0.0	0.0	11.1	12.0	12.0	9.8	9.5	0.0	0.0	54.3
1984	0.0	0.0	0.0	0.0	3.9	8.6	8.9	8.9	8.6	8.9	0.0	0.0	47.9
1985	0.0	0.0	0.0	0.0	3.6	10.9	16.0	16.0	13.3	5.6	0.0	0.0	65.3
1986	0.0	0.0	0.0	0.0	0.0	13.8	15.9	8.6	6.4	1.8	0.0	0.0	46.4
1987	0.0	0.0	0.0	0.0	7.6	12.3	11.9	8.5	5.8	0.0	0.0	0.0	46.2
1988	0.0	0.0	0.0	0.0	5.3	8.5	7.8	7.1	6.2	3.2	0.0	0.0	38.0
1989	0.0	0.0	0.0	0.0	0.0	6.7	13.7	4.6	2.3	11.2	0.0	0.0	38.4
1990	0.0	0.0	0.0	0.0	29.4	28.3	25.0	18.1	7.1	0.0	0.0	0.0	107.9
1991	0.0	0.0	0.0	0.0	35.4	23.8	36.9	18.4	14.5	0.0	0.0	0.0	129.0
1992	0.0	0.0	0.0	0.0	15.9	23.8	24.6	11.9	11.0	2.9	0.0	0.0	90.0
1993	0.0	0.0	0.0	0.0	13.9	25.4	24.6	0.8	0.0	0.0	0.0	0.0	64.6
1994	0.0	0.0	0.0	0.0	0.0	5.8	8.6	6.8	6.5	6.3	1.5	0.6	36.1
1995	0.0	0.0	0.0	0.0	0.0	3.3	11.7	11.2	8.9	5.4	0.0	0.0	40.5
1996	0.0	0.0	0.0	0.0	3.0	8.9	4.8	3.9	8.7	5.2	0.0	0.0	34.4
1997	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	3.3
1998	0.0	0.0	0.0	0.0	0.0	0.0	2.8	6.1	5.9	3.4	0.0	0.0	18.2
Average	0.0	0.0	0.0	0.1	8.3	15.4	18.8	16.9	13.9	8.9	0.0	0.0	82.3

Calculated as Appendix 2 Table C (Parcel 1 Farm Delivery) multiplied by 70%. Flood irrigation efficiency estimated to equal 70%.

Appendix 3

Table A - DRAFT Parcel 1 Crop Irrigation Requirement (af)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Sum
1950	0.0	0.0	0.0	0.1	2.9	5.7	6.3	5.3	2.5	1.4	0.0	0.0	24.1
1951	0.0	0.0	0.0	0.2	3.1	4.1	6.9	4.5	2.5	0.3	0.0	0.0	21.6
1952	0.0	0.0	0.0	0.5	3.3	5.3	5.8	3.7	3.5	0.8	0.0	0.0	22.9
1953	0.0	0.0	0.0	0.0	1.7	5.7	6.0	4.6	3.3	0.8	0.0	0.0	22.1
1954	0.0	0.0	0.0	1.0	3.7	6.0	7.0	5.1	2.5	0.7	0.0	0.0	26.0
1955	0.0	0.0	0.0	0.0	2.5	4.5	6.1	5.9	3.2	0.7	0.0	0.0	23.1
1956	0.0	0.0	0.0	0.3	4.2	6.0	6.3	5.0	3.2	0.8	0.0	0.0	25.9
1957	0.0	0.0	0.0	0.0	1.2	3.9	6.5	4.8	2.6	0.7	0.0	0.0	19.8
1958	0.0	0.0	0.0	0.2	4.2	6.0	6.8	6.5	2.9	0.8	0.0	0.0	27.5
1959	0.0	0.0	0.0	0.2	2.4	5.1	6.4	5.3	1.5	0.2	0.0	0.0	21.3
1960	0.0	0.0	0.0	0.3	2.3	6.0	7.0	5.9	3.7	0.6	0.0	0.0	25.9
1961	0.0	0.0	0.0	0.1	2.9	6.1	6.0	6.5	0.1	0.5	0.0	0.0	22.2
1962	0.0	0.0	0.0	0.8	2.7	5.3	6.8	5.3	2.6	0.9	0.0	0.0	24.4
1963	0.0	0.0	0.0	0.7	4.3	4.3	7.6	4.4	3.4	1.5	0.0	0.0	26.2
1964	0.0	0.0	0.0	0.1	3.1	4.7	7.5	3.9	3.1	1.0	0.0	0.0	23.4
1965	0.0	0.0	0.0	0.2	2.9	5.3	5.7	5.2	0.6	1.1	0.0	0.0	21.1
1966	0.0	0.0	0.0	0.3	3.5	4.8	8.4	5.5	4.0	0.5	0.0	0.0	26.9
1967	0.0	0.0	0.0	0.3	2.3	3.9	7.0	6.2	3.1	0.9	0.0	0.0	23.8
1968	0.0	0.0	0.0	0.0	1.9	5.3	5.5	4.1	2.3	0.5	0.0	0.0	19.6
1969	0.0	0.0	0.0	0.8	3.9	3.0	5.9	6.0	3.3	0.0	0.0	0.0	22.8
1970	0.0	0.0	0.0	0.0	3.0	3.8	5.6	4.8	1.5	0.0	0.0	0.0	18.7
1971	0.0	0.0	0.0	0.2	2.4	5.2	5.3	5.5	1.3	0.5	0.0	0.0	20.2
1972	0.0	0.0	0.0	0.5	2.6	4.8	6.3	4.8	2.1	0.4	0.0	0.0	21.5
1973	0.0	0.0	0.0	0.0	2.6	3.4	4.1	5.1	2.3	0.8	0.0	0.0	18.2
1974	0.0	0.0	0.0	0.3	3.6	4.5	5.0	4.4	2.7	0.6	0.0	0.0	21.1
1975	0.0	0.0	0.0	0.0	1.8	3.6	4.8	4.6	2.9	0.3	0.0	0.0	17.9
1976	0.0	0.0	0.0	0.5	2.9	4.3	5.7	4.5	2.0	0.4	0.0	0.0	20.2
1977	0.0	0.0	0.0	0.9	3.0	6.0	6.1	4.5	2.4	0.6	0.0	0.0	23.5
1978	0.0	0.0	0.0	0.4	2.4	4.7	6.2	4.7	2.3	0.5	0.0	0.0	21.1
1979	0.0	0.0	0.0	0.2	0.8	2.4	3.6	3.1	2.1	0.5	0.0	0.0	12.7
1980	0.0	0.0	0.0	0.1	1.6	3.3	4.0	2.9	2.0	0.2	0.0	0.0	14.2
1981	0.0	0.0	0.0	0.7	1.4	3.7	3.2	3.0	2.0	0.1	0.0	0.0	14.0
1982	0.0	0.0	0.0	0.0	1.2	2.7	3.5	3.3	1.0	0.2	0.0	0.0	11.8
1983	0.0	0.0	0.0	0.0	0.3	0.8	1.1	1.1	0.8	0.2	0.0	0.0	4.3
1984	0.0	0.0	0.0	0.0	0.7	0.6	1.0	0.8	0.5	0.0	0.0	0.0	3.6
1985	0.0	0.0	0.0	0.1	0.6	1.1	1.1	1.2	0.4	0.0	0.0	0.0	4.6
1986	0.0	0.0	0.0	0.2	0.6	1.1	1.1	1.0	0.3	0.0	0.0	0.0	4.4
1987	0.0	0.0	0.0	0.2	0.6	1.0	1.2	1.1	0.6	0.2	0.0	0.0	4.9
1988	0.0	0.0	0.0	0.2	0.7	1.2	1.5	1.2	0.4	0.3	0.0	0.0	5.4
1989	0.0	0.0	0.0	0.1	0.7	1.1	1.1	1.1	0.7	0.1	0.0	0.0	5.0
1990	0.0	0.0	0.0	0.2	0.6	1.3	1.1	1.2	0.7	0.1	0.0	0.0	5.2
1991	0.0	0.0	0.0	0.1	0.7	0.9	1.2	1.1	0.7	0.1	0.0	0.0	4.8
1992	0.0	0.0	0.0	0.4	0.7	1.0	1.2	1.1	0.5	0.2	0.0	0.0	5.1
1993	0.0	0.0	0.0	0.1	0.6	1.1	1.2	1.1	0.5	0.1	0.0	0.0	4.6
1994	0.0	0.0	0.0	0.1	0.5	0.7	0.9	0.7	0.4	0.1	0.0	0.0	3.4
1995	0.0	0.0	0.0	0.0	0.3	0.6	0.7	0.8	0.4	0.1	0.0	0.0	2.8
1996	0.0	0.0	0.0	0.1	0.5	0.7	0.9	0.7	0.4	0.1	0.0	0.0	3.3
1997	0.0	0.0	0.0	0.0	0.4	0.7	0.8	0.7	0.4	0.1	0.0	0.0	3.2
1998	0.0	0.0	0.0	0.1	0.4	0.6	0.9	0.8	0.5	0.1	0.0	0.0	3.4
Average	0.0	0.0	0.0	0.2	2.0	3.4	4.3	3.6	1.8	0.4	0.0	0.0	15.8

Values calculated as Irrigated Acreage (Table 1 from memo) multiplied by unit Crop Irrigation Requirement (CIR). CIR calculated using Modified Blaney-Criddle with TR21 crop coefficients and elevation adjustment. Assume 20% alfalfa and 80% grass pasture. Temperature and precipitation data sourced from NOAA climate station Eagle County AP (USW00023063). Missing temperature data filled using regression with NOAA climate station Gypsum Colorado (USR0000CGYP). Missing precipitation data filled with historical monthly average.

Table B - DRAFT Diversion to Consumptive Use (af)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Sum
1950	0.0	0.0	0.0	0.0	2.9	5.7	6.3	5.3	2.5	1.4	0.0	0.0	24.0
1951	0.0	0.0	0.0	0.0	0.0	4.1	6.9	4.5	2.5	0.3	0.0	0.0	18.2
1952	0.0	0.0	0.0	0.0	3.3	5.3	5.8	3.7	3.5	0.8	0.0	0.0	22.4
1953	0.0	0.0	0.0	0.0	0.0	5.7	6.0	4.6	3.3	0.8	0.0	0.0	20.4
1954	0.0	0.0	0.0	0.0	3.7	6.0	7.0	5.1	2.5	0.7	0.0	0.0	25.0
1955	0.0	0.0	0.0	0.0	0.0	0.0	6.1	5.9	3.2	0.7	0.0	0.0	16.0
1956	0.0	0.0	0.0	0.0	4.2	6.0	6.3	5.0	3.2	0.8	0.0	0.0	25.5
1957	0.0	0.0	0.0	0.0	1.2	3.9	6.5	4.8	2.6	0.0	0.0	0.0	19.1
1958	0.0	0.0	0.0	0.0	4.2	6.0	6.8	6.5	2.9	0.8	0.0	0.0	27.3
1959	0.0	0.0	0.0	0.0	2.4	5.1	6.4	5.3	1.5	0.2	0.0	0.0	21.1
1960	0.0	0.0	0.0	0.0	2.3	6.0	7.0	5.9	3.7	0.6	0.0	0.0	25.5
1961	0.0	0.0	0.0	0.0	2.9	6.1	6.0	6.5	0.1	0.5	0.0	0.0	22.1
1962	0.0	0.0	0.0	0.0	2.7	5.3	6.8	5.3	2.6	0.9	0.0	0.0	23.6
1963	0.0	0.0	0.0	0.0	4.3	4.3	7.6	4.4	3.4	1.5	0.0	0.0	25.5
1964	0.0	0.0	0.0	0.0	3.1	4.7	7.5	3.9	3.1	1.0	0.0	0.0	23.3
1965	0.0	0.0	0.0	0.2	2.9	5.3	5.7	5.2	0.6	1.1	0.0	0.0	21.1
1966	0.0	0.0	0.0	0.0	3.5	4.8	8.4	5.5	4.0	0.5	0.0	0.0	26.6
1967	0.0	0.0	0.0	0.0	2.3	3.9	7.0	6.2	3.1	0.9	0.0	0.0	23.5
1968	0.0	0.0	0.0	0.0	1.9	5.3	5.5	4.1	2.3	0.5	0.0	0.0	19.6
1969	0.0	0.0	0.0	0.0	3.9	3.0	5.9	6.0	3.3	0.0	0.0	0.0	22.0
1970	0.0	0.0	0.0	0.0	3.0	3.8	5.6	4.8	1.5	0.0	0.0	0.0	18.7
1971	0.0	0.0	0.0	0.0	2.4	5.2	5.3	5.5	1.3	0.5	0.0	0.0	20.0
1972	0.0	0.0	0.0	0.0	2.6	4.8	6.3	4.8	2.1	0.4	0.0	0.0	21.0
1973	0.0	0.0	0.0	0.0	2.6	3.4	4.1	5.1	2.3	0.8	0.0	0.0	18.2
1974	0.0	0.0	0.0	0.0	3.6	4.5	3.0	4.4	1.8	0.6	0.0	0.0	17.9
1975	0.0	0.0	0.0	0.0	0.0	3.6	4.8	4.6	2.9	0.3	0.0	0.0	16.1
1976	0.0	0.0	0.0	0.0	0.0	4.3	5.7	4.1	2.0	0.4	0.0	0.0	16.5
1977	0.0	0.0	0.0	0.0	3.0	6.0	6.1	4.5	2.4	0.6	0.0	0.0	22.7
1978	0.0	0.0	0.0	0.0	0.0	4.7	6.2	4.7	2.3	0.1	0.0	0.0	18.0
1979	0.0	0.0	0.0	0.0	0.0	2.4	3.6	3.1	2.1	0.5	0.0	0.0	11.7
1980	0.0	0.0	0.0	0.0	1.6	3.3	4.0	2.9	2.0	0.2	0.0	0.0	14.1
1981	0.0	0.0	0.0	0.7	1.4	3.7	3.2	3.0	2.0	0.0	0.0	0.0	13.9
1982	0.0	0.0	0.0	0.0	1.2	2.7	3.5	3.3	1.0	0.2	0.0	0.0	11.8
1983	0.0	0.0	0.0	0.0	0.0	0.8	1.1	1.1	0.8	0.2	0.0	0.0	4.0
1984	0.0	0.0	0.0	0.0	0.7	0.6	1.0	0.8	0.5	0.0	0.0	0.0	3.6
1985	0.0	0.0	0.0	0.0	0.6	1.1	1.1	1.2	0.4	0.0	0.0	0.0	4.5
1986	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.0	0.3	0.0	0.0	0.0	3.7
1987	0.0	0.0	0.0	0.0	0.6	1.0	1.2	1.1	0.6	0.0	0.0	0.0	4.5
1988	0.0	0.0	0.0	0.0	0.7	1.2	1.5	1.2	0.4	0.3	0.0	0.0	5.2
1989	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	0.7	0.1	0.0	0.0	4.2
1990	0.0	0.0	0.0	0.0	0.6	1.3	1.1	1.2	0.7	0.0	0.0	0.0	4.9
1991	0.0	0.0	0.0	0.0	0.7	0.9	1.2	1.1	0.7	0.0	0.0	0.0	4.6
1992	0.0	0.0	0.0	0.0	0.7	1.0	1.2	1.1	0.5	0.2	0.0	0.0	4.7
1993	0.0	0.0	0.0	0.0	0.6	1.1	1.2	0.8	0.0	0.0	0.0	0.0	3.7
1994	0.0	0.0	0.0	0.0	0.0	0.7	0.9	0.7	0.4	0.1	0.0	0.0	2.9
1995	0.0	0.0	0.0	0.0	0.0	0.6	0.7	0.8	0.4	0.1	0.0	0.0	2.5
1996	0.0	0.0	0.0	0.0	0.5	0.7	0.9	0.7	0.4	0.1	0.0	0.0	3.2
1997	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.8
1998	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.8	0.5	0.1	0.0	0.0	2.3
Average	0.0	0.0	0.0	0.0	1.6	3.3	4.3	3.5	1.8	0.4	0.0	0.0	14.9
HCU/ac	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.4	0.2	0.0	0.0	0.0	1.6

Calculated as minimum of Appendix 2 Table D (Delivery to Parcel 1 after irrigation efficiency loss) and Appendix 3 Table A (CIR)

Appendix 4

Table A - DRAFT Parcel 1 Return Flow Obligation (af)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Sum
1950	0.0	0.0	0.0	0.0	27.8	36.2	37.0	37.9	39.4	19.6	0.0	0.0	198.0
1951	0.0	0.0	0.0	0.0	0.0	0.0	36.5	34.4	33.5	28.1	5.0	0.0	137.6
1952	0.0	0.0	0.0	0.0	7.8	7.0	59.9	69.2	34.8	6.7	0.0	0.0	185.5
1953	0.0	0.0	0.0	0.0	0.0	0.0	27.2	36.8	15.9	16.5	10.8	0.0	107.3
1954	0.0	0.0	0.0	0.0	28.0	29.2	29.4	31.3	32.7	34.5	0.0	0.0	185.1
1955	0.0	0.0	0.0	0.0	0.0	0.0	39.3	68.2	68.5	42.0	0.0	0.0	218.0
1956	0.0	0.0	0.0	0.0	5.9	19.2	19.8	21.1	22.0	25.3	0.0	0.0	113.2
1957	0.0	0.0	0.0	0.0	16.5	72.0	72.0	72.1	24.5	0.0	0.0	0.0	257.1
1958	0.0	0.0	0.0	0.0	21.2	28.6	29.0	29.3	31.7	29.8	0.0	0.0	169.6
1959	0.0	0.0	0.0	0.0	25.2	32.5	32.5	33.5	37.3	37.4	0.0	0.0	198.3
1960	0.0	0.0	0.0	0.0	18.3	14.0	13.6	14.7	16.3	16.1	0.0	0.0	92.9
1961	0.0	0.0	0.0	0.0	10.5	11.5	12.2	11.6	17.5	14.2	0.0	0.0	77.6
1962	0.0	0.0	0.0	0.0	21.2	21.4	20.7	22.3	24.0	8.0	0.0	0.0	117.5
1963	0.0	0.0	0.0	0.0	14.1	21.0	18.5	21.7	21.8	19.5	0.0	0.0	116.6
1964	0.0	0.0	0.0	0.0	6.8	20.1	18.1	21.6	21.7	15.5	0.0	0.0	103.7
1965	0.0	0.0	0.0	7.5	18.7	15.7	16.0	16.4	20.3	12.8	0.0	0.0	107.4
1966	0.0	0.0	0.0	0.0	3.8	13.2	10.4	13.2	14.1	14.6	0.0	0.0	69.3
1967	0.0	0.0	0.0	0.0	14.2	20.8	18.5	19.3	21.6	19.7	0.0	0.0	114.2
1968	0.0	0.0	0.0	0.0	15.3	25.2	26.0	27.4	28.1	19.8	0.0	0.0	141.8
1969	0.0	0.0	0.0	0.0	20.7	40.4	38.9	38.8	40.0	36.2	0.0	0.0	215.1
1970	0.0	0.0	0.0	0.0	13.4	25.6	30.1	31.4	29.3	20.1	0.0	0.0	149.8
1971	0.0	0.0	0.0	0.0	14.0	24.2	30.5	30.7	29.4	19.6	0.0	0.0	148.5
1972	0.0	0.0	0.0	0.0	13.8	24.6	29.5	31.3	28.6	19.7	0.0	0.0	147.5
1973	0.0	0.0	0.0	0.0	13.8	26.0	31.7	31.0	28.5	19.3	0.0	0.0	150.3
1974	0.0	0.0	0.0	0.0	16.2	12.9	1.8	3.0	1.0	2.3	0.0	0.0	37.1
1975	0.0	0.0	0.0	0.0	0.0	8.6	29.3	29.5	21.3	14.3	0.0	0.0	103.1
1976	0.0	0.0	0.0	0.0	0.0	8.5	10.9	2.4	8.7	10.8	0.0	0.0	41.4
1977	0.0	0.0	0.0	0.0	6.5	17.6	18.2	17.4	11.8	9.7	0.0	0.0	81.1
1978	0.0	0.0	0.0	0.0	0.0	19.6	33.3	28.2	3.6	0.1	0.0	0.0	84.7
1979	0.0	0.0	0.0	0.0	0.0	17.4	32.5	33.0	24.8	10.7	0.0	0.0	118.4
1980	0.0	0.0	0.0	0.0	3.8	16.6	29.6	30.8	28.1	24.1	0.0	0.0	133.0
1981	0.0	0.0	0.0	0.8	21.1	18.0	17.0	11.3	7.8	0.0	0.0	0.0	76.0
1982	0.0	0.0	0.0	0.0	3.8	31.6	32.1	29.0	32.5	34.4	0.0	0.0	163.4
1983	0.0	0.0	0.0	0.0	0.0	16.7	17.9	17.9	14.7	14.9	0.0	0.0	82.2
1984	0.0	0.0	0.0	0.0	5.5	13.1	13.2	13.4	13.2	14.1	0.0	0.0	72.4
1985	0.0	0.0	0.0	0.0	5.0	16.1	24.2	24.2	20.7	8.9	0.0	0.0	99.2
1986	0.0	0.0	0.0	0.0	0.0	20.8	24.0	12.7	9.8	2.8	0.0	0.0	70.1
1987	0.0	0.0	0.0	0.0	11.5	18.6	17.7	12.4	8.6	0.0	0.0	0.0	68.9
1988	0.0	0.0	0.0	0.0	7.7	12.2	11.0	10.0	9.4	4.8	0.0	0.0	55.1
1989	0.0	0.0	0.0	0.0	0.0	9.5	20.7	6.1	2.9	17.7	0.0	0.0	56.8
1990	0.0	0.0	0.0	0.0	46.1	43.6	38.6	27.5	10.5	0.0	0.0	0.0	166.3
1991	0.0	0.0	0.0	0.0	55.5	36.8	57.3	28.2	22.4	0.0	0.0	0.0	200.2
1992	0.0	0.0	0.0	0.0	24.4	36.7	37.8	17.8	17.0	4.4	0.0	0.0	138.1
1993	0.0	0.0	0.0	0.0	21.5	39.2	37.8	0.5	0.0	0.0	0.0	0.0	98.9
1994	0.0	0.0	0.0	0.0	0.0	8.5	12.8	10.0	10.0	9.9	2.4	0.9	54.4
1995	0.0	0.0	0.0	0.0	0.0	4.6	17.8	17.0	13.8	8.5	0.0	0.0	61.7
1996	0.0	0.0	0.0	0.0	4.2	13.5	6.7	5.4	13.5	8.2	0.0	0.0	51.5
1997	0.0	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	0.0	0.0	0.0	4.5
1998	0.0	0.0	0.0	0.0	0.0	0.0	3.5	9.0	8.9	5.2	0.0	0.0	26.6
Average	0.0	0.0	0.0	0.2	11.5	21.1	25.6	23.3	20.2	13.7	0.0	0.0	115.6

Values calculated as Appendix 2 Table B (Prorata diversions to Parcel 1) less Appendix 3 Table B (Parcel 1 Consumptive Use)