

2013 Annual Report of Integrated Water Management Activities in the Republican Basin Within Tri-Basin NRD



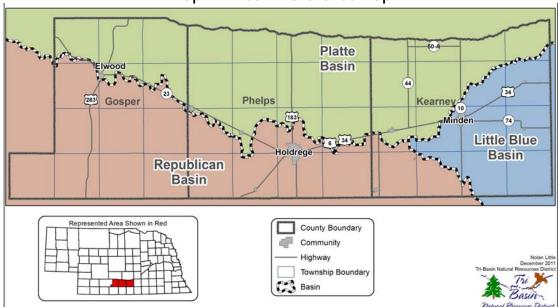
1723 Burlington Street Holdrege, Nebraska 68949 (308) 995-6688 www.tribasinnrd.org email: tribasin@tribasinnrd.org

## ANNUAL REPORT OF WATER USE ACTIVITIES IN THE REPUBLICAN BASIN WITHIN TRI-BASIN NRD

TO MEET THE REQUIREMENTS OF THE JOINT INTEGRATED MANAGEMENT PLAN FOR THE 2014 JOINT INTEGRATED MANAGEMENT PLAN PROGRESS REVIEW MEETING

#### I. SUMMARY

The purpose of this report is to convey information that Tri-Basin Natural Resources District (TBNRD) agreed to supply to the State of Nebraska as part of a joint Integrated Management Plan for the Republican River Basin.



Map #1: Basin Reference Map

#### II. INTRODUCTION

TBNRD encompasses portions of the Republican, Platte and Little Blue River Basins (see map #1, above). The district also contains an area commonly referred to as the "Groundwater Mound," a large area spanning portions of all three basins that is characterized by groundwater levels that are higher than historic "predevelopment" groundwater elevations.

More than 100,000 acres of cropland within the Platte Basin portion of TBNRD are irrigated with water diverted from the Platte River and distributed through the canals of the Central Nebraska Public Power and Irrigation District (CNPPID). Surface irrigation water and the canals that distribute it enhance recharge of groundwater supplies within the district. In addition to helping sustain groundwater supplies, this incidental recharge has increased streamflows in Platte and Republican tributaries.

#### III. CERTIFIED IRRIGATED ACRES

The district began certifying irrigated acres in the Republican Basin in 2004. The initial certification process in the Republican Basin ended on September 15,

2004. Since that time, corrections and revisions to the certified acre database have occurred with a net result that, as of February 7, 2014, of 189,447.16 certified irrigated acres. Commingled acres are acres that may be watered with groundwater or surface water, often times a combination of both. Data regarding certified irrigated acres can be found in TABLE 1: Certified Acres, below. Detailed information about locations and distribution of certified irrigated acres is available in the Tri-Basin NRD office.

TABLE 1: Cer	tified	Irrigated Acre	es		
	Year	Groundwater	CoMingled Acres	Surface Water	
Gosper County	2012	56,489.90	1057.16	173	
	2013	56,501.89	1,013.68	216.48	
Kearney County	2012	40,955.11	427.59		
	2013	40,938.11	427.59		
Phelps County	2012	85,504.59	4,532.56	236.51	
	2013	85,550.50	4,562.40	236.51	
Total	2012	182,949.60	6,017.31	409.51	189,376.42
	2013	182,990.50	6,003.67	452.99	189,447.16

#### IV. APPROVED CERTIFIED ACRE AND GROUNDWATER TRANSFERS

A. TBNRD allows certified irrigated acres to be transferred from one parcel to another within the Republican Basin portion of the district, with some limitations. Certified irrigated acres also cannot be transferred from parcels with surface water or commingled water resources to parcels that have groundwater wells as their only water source. The NRD also pro-rates certified acre transfers in which acres are transferred from low to high streamflow depletion zones. Between January 1, 2013 and December 31, 2013 the district approved 18 certified irrigated acre transfers in the Republican Basin. A total of 219.73 certified irrigated acres were involved in these transfers. Data regarding the location, amount and conditions associated with each transfer can be found in TABLE 2A: Republican Basin Transfers-Acres Original Locations (page 4) and TABLE 2B: Republican Basin Transfers-Destinations for Transferred Acres (page 5).

TABLE 2A: Repu	blican Basin Transfers- Acres Origina	Locations
NRD Permit Number	Legal Description	Acres Dried Up
TBAT-0156	Pt NW 1/4 Section 34-6-18	11.55
TBAT-0159	E 1/2 of SE 1/4 Section 1-5-18	10
TBAT-0160	SW 1/4 Section 6-5-22	36
TBAT-0165	Entire Section Section 23-6-23	11
TBAT-0166	East 1/2 of SE 1/4 Section 19-7-21	17.33
TBAT-0169	NE 1/4 Section 33-6-18	18.11
TBAT-0170	Section 14-6-19	7
TBAT-0179	West 1/2 Section 10-5-24	8.5
TBAT-0180	West 1/2 Section 10-5-24	4.5
TBAT-0181	West 1/2 Section 10-5-24	10.91
TBAT-0182	West 1/2 Section 10-5-24	4
TBAT-0183	West 1/2 Section 10-5-24	6
TBAT-0189	NE 1/4 Section 30-5-14	10
TBAT-0190	NE 1/4 Section 30-5-14	7
TBAT-0191	NE 1/4 Section 28-6-23	3
TBAT-0202	S 1/2 N 1/2, SW 1/4, SE 1/4 Section 18-5-20	29.83
TBAT-0203	SE 1/4 Section 33-6-21	16
TBAT-0204	SW 1/4 Section 7-6-21	9

-	blican Basin Transfers - Transferred acres	
NRD Permit Number	Section	New Irrigated
TBAT-0156	NW 1/4 Section 5-5-17	11.55
TBAT-0159	Pt NE 1/4 Section 12-5-18	10
TBAT-0160	Pt SE 1/4 Section 1-5-23	36
TBAT-0165	West 1/2 Section 24-6-23	11
TBAT-0166	NE 1/4; SW 1/4; West 1/2 of SE 1/4 Section 19-7-21	17.33
TBAT-0169	SE 1/4 Section 2-6-21	11.86
TBAT-0170	SW 1/4 Section 27-6-19	7
TBAT-0179	West 1/2 NE 1/4 Section 5-5-17	8.5
TBAT-0180	East 1/2 NE 1/4 Section 5-5-17	4.5
TBAT-0181	SE 1/4 Section 19-5-17	10.91
TBAT-0182	S 1/2 NE 1/4 Section 14-5-18	4
TBAT-0183	NE 1/4 Section 7-5-19	6
TBAT-0189	Lots 4-5 Section 19-5-17	10
TBAT-0190	West 1/2 NE 1/4 Section 19-5-17	7
TBAT-0191	SE 1/4 Section 28-6-23	3
TBAT-0202	All of Section Section 19-5-20	29.83
TBAT-0203	Middle of East 1/2 Section 25-5-21	16
TBAT-0204	NW 1/4 Section 7-6-21	9

B. TBNRD regulates groundwater pumping off of overlying land by requiring landowners to secure groundwater transfer permits before they can pump groundwater to properties that are not under the same ownership. Groundwater transfer permits can only be used to supply groundwater for irrigation of certified irrigated acres. Landowners are required to install flowmeters on wells that are permitted for transfers and to report pumping from these wells annually to the TBNRD. TBNRD issued 12 groundwater transfer permits in the Republican Basin between January 1, 2013 and December 31, 2013. Data regarding groundwater transfers can be found in TABLE 3: Groundwater Transfers, below.

TABLE 3: Groun	dwater Transfers		
NRD Permit Number	Legal Description	Well	Neighboring Certified Acres to be watered with well
GWT-0274	SE 1/4 Section 8-5-16	G-068708	7
GWT-0275	SE 1/4 Section 8-5-16	G-068708	7
GWT-0276	SE 1/4 Section 14-5-16	G-046755	7
GWT-0277	East 1/2 Section 6-5-17	G-010959	7
GWT-0278	SE 1/4 Section 29-7-21	G-032834	3
GWT-0279	NE 1/4 Section 23-5-16	G-068947	5
GWT-0280	SW 1/4 Section 23-5-16	G-013965	5
GWT-0282	NW 1/4 Section 10-5-17	A-006726	7
GWT-0286	NW 1/4 Section 4-5-17	G-021689-R1	6
GWT-0287	NW 1/4 Section 4-5-17	G-021689-R1	6
GWT-0288	NW 1/4 Section 4-5-17	G-021689-R1	6
GWT-0298	NE 1/4 Section 33-6-17	G-031546	7

#### V. WELL CONSTRUCTION PERMITS

A. Since 1989, TBNRD has required landowners to secure well construction permits before they drill wells capable of pumping more than 50 gallons per minute. The district issues three categories of well permits: new well permits, conditional replacement well permits, and replacement well permits.

TBNRD requires landowners to agree to several conditions on the operation of new wells and conditional replacement wells before permits are issued. These conditions are listed in an agreement that is signed by landowners when they apply for these types of well permits. A copy of that agreement is attached to this report as Appendix A.

B. TABLE 4: TBNRD Well Permits (below) is a breakdown of well permits that TBNRD issued in the Republican Basin between January 1, 2013 and December 31, 2013. A detailed listing of well permits issued by TBNRD in 2013 is found in TABLE 5: Well Permit Summary (below).

TABLE 4: TBNRD Well Permits	
Well Permit Type	Permits
New (variance) irrigation [Acre transfer involved]	0
Replacement irrigation	11
Conditional replacement irrigation - supplemental to groundwater	9
Dewatering	0
New commercial/industrial	

#### VI. VARIANCES

TBNRD issues new well permits to landowners of parcels that don't have a prior irrigation history only after they have transferred sufficient certified irrigated acres for the intended new use. The TBNRD Board must approve a variance to the rule prohibiting new well construction before new well permits can be issued. No new well construction permit variances were issued in the Republican Basin between January 1, 2013 and December 31, 2013 (see Table 5, below).

TABLE 5:	Well Permit Summary		
Permit Number	Well Permit Type	Legal Description	NDNR Reg. Number
TBSG-1431	SG-Supplemental to Groundwater	Section 35-5-17W	G-170025
TBSG-1435	SG-Supplemental to Groundwater	Section 33-7-21W	G-167778
TBSG-1443	SG-Supplemental to Groundwater	Section 7-5-15W	G-167287
TBSG-1445	SG-Supplemental to Groundwater	Section 25-5-21W	NDY
TBSG-1449	SG-Supplemental to Groundwater	Section 12-5-19W	G-168201
TBSG-1452	SG-Supplemental to Groundwater	Section 28-5-21W	NDY
TBSG-1453	SG-Supplemental to Groundwater	Section 13-6-19W	NDY
TBSG-1456	SG-Supplemental to Groundwater	Section 20-5-21W	NDY
TBSG-1459	SG-Supplemental to Groundwater	Section 16-5-19W	NDY

Tri-Basin NRD corrected the district's certified acre database by certifying 147.4 acres in ten parcels that had a history of irrigation between 1997 and 2005. These acres weren't previously included in the district's database, because they hadn't been classified as irrigated cropland by county assessors. During the October, 2013 NRD Board meeting, the board of directors added a new pre-condition for con-

sideration of irrigated acre corrections. Since that meeting, landowners must prove not only that land was irrigated during the period 1997-2003, but that land was also irrigated during three of the past five years. Tri-Basin NRD's Republican Basin Corrections data is in TABLE 6: Republican Basin Variances (below).

TABLE 6: Republican Basin Co	ertified Irrigated Variances	
Type of Variance	Legal Description	Affected Acres
Variance on transferring rules into Phase II area	SW of SW 1/4 Section 6-5-22	36
New Well Permit	SW 1/4 Section 22-5-22	
Certified Acre Correction Request	W 1/2 of NE 1/4; Lots 4 & 5 Section 31-6-17W	21.67
Certified Acre Correction Request	S 1/2 of SE 1/4 Section 19-5-14W	4.74
Certified Acre Correction Request	Pt NW 1/4 Section 18-6-21W	12.57
Certified Acre Correction Request	Lots 11-18 Section 6-5-17W	23.1
Certified Acre Correction Request	NE 1/4 Section 34-6-16W	5.68
Certified Acre Correction Request	SW 1/4 Section 29-5-15W	20.87
Variance on Well abandonment	SW 1/4 Section 22-5-22	
Variance on Well abandonment	SW 1/4 Section 22-5-22	
Variance on Well abandonment	NE 1/4 Section 27-5-22	
Variance on flow meter	SW of NW 1/4 Section 8-5-16	
Certified Acre Correction Request	SE 1/4 Section 13-5-17W	5.41
Certified Acre Correction Request	Pt NE 1/4; pt W 1/2 Section 2-5-18W	4.12
Certified Acre Correction Request	Whole Section Section 19-6-18W	42.35
Certified Acre Correction Request	Pt of NE 1/4 Section 36-6-18W	6.89

#### VII. MUNICIPAL AND INDUSTRIAL ACCOUNTING

TBNRD collects water use data annually from all municipalities and industries within the district. Municipal and industrial water use data for communities and industries located in the Republican Basin reported to TBNRD in 2013 are shown in the next two tables. A summary of Municipal Water Use may be found in TABLE 7: Republican Basin Municipal Water Use Data (below). TABLE 8 (page 9) shows Industrial and Commercial Water Use Data.

TABLE 7: Republican Basin Muni	cipal Water Use Da	ta (in gallons)
Municipality	2012	2013
Atlanta	33,219,000	23,124,400
Arapahoe	138,279,000	120,573,000
Holdrege	512,347,700	473,755,500
Wilcox	27,905,000	25,414,900

TABLE 8: R	epublican Basin Ind	ustrial and Comm	ercial Wate	r Use Data
NDNR Reg. Number	Owner	Legal Description	Gallons Used	
G-070393	NE Game & Parks, Sac-Wilcox WMA	Section 27 - 5 - 17W	0	Well not used in 2013
G-030619	City of Holdrege	Section 9 - 5 - 18W	0	Well not used in 2013
G-025572	City of Holdrege	Section 9 - 5 - 18W	0	Well not used in 2013
G-079833	Cargill Ag Horizons Inc	Section 31 - 6 - 17W	132,500	
G-135221	Geer Utility	Section 27 - 6 - 18W	3,034,600	
G-135220-R1	Geer Utility	Section 27 - 6 - 18W		2 Wells & 1 Meter See G-135221
G-069908	Holdrege Country Club	Section 29 - 6 - 18W	28,140,000	
G-009687	Holdrege Country Club	Section 29 - 6 - 18W	28,351,300	
G-096786	City of Holdrege	Section 34 - 6 - 18W	374,100	
G-071934	Sargent Irrigation Company Inc	Section 34 - 6 - 18W	219,100	
G-070168	Holdrege Irrigation	Section 34 - 6 - 18W	386,690	

#### VIII. FLOWMETER DATA

TBNRD requires flowmeters to be installed and annual water use to be reported to TBNRD whenever landowners drill new wells, receive irrigation-related cost-share funds, or when groundwater is transferred from one property to another. In 2013 landowners reported data from 1,604 metered wells in the Republican Basin. The metered wells reported irrigating 177,989.52 certified irrigated acres. There are 34 wells in the Republican Basin that are exempted from having flowmeters. All District flowmeter data is reported annually to the Department of Natural Resources (DNR) for purposes of Republican River Basin Compact Administration accounting. A summary of Republican Basin water use data is included in this report as Appendix B. Detailed Republican Basin flowmeter data is available from the Tri-Basin NRD office.

#### IX. WATER BANKING ACTIVITIES

TBNRD is considering establishing a water bank of some sort, but no policy has yet been agreed upon by the TBNRD Board of Directors.

#### X. RETIRED ACRES AND OTHER STREAMFLOW ACCRETION ACTIVITIES

Tri-Basin NRD paid CNPPID to divert 5400 acre-feet of water from the Platte River into Elwood Reservoir in Gosper County in 2008 and 2906 acre-feet in 2009. These diversions were made from the Platte when streamflows exceeded target flows, or when irrigation deliveries were suspended due to heavy rainfall in the CNP-PID irrigated area. They were above and beyond normal diversions into the reservoir

for irrigation deliveries. According to calculations by DNR staff (TBNRD\_offset\_summary\_update\_7\_19\_10.xls), these diversions should provide 1191 acre-feet of offset credit for the Republican Basin in 2012. TBNRD and DNR paid CNP-PID to divert approximately 15,000 acre-feet into Elwood and the E-65 canal during the Fall of 2013. In both instances, these diversions were above and beyond normal diversions into the reservoir.

Irrigated land was temporarily retired in TBNRD during 2013 through 18 contracts totaling 241.6 irrigated acres were signed up for USDA-EQIP Dry land Corners. Tri-Basin NRD records indicate that 1776.6 irrigated acres are enrolled in USDA Conservation Reserve Enhancement Program (CREP) in the Republican Basin portion of the district. Most of these contracts are set to expire by 2019.

Landowners reported to TBNRD on district water use reports that conservation tillage practices have been adopted or continue to be utilized on 114,477.16 certified irrigated acres in the Republican Basin portion of the district during 2013 (no-till data is available from the Tri-Basin NRD office). Recent university research (Klocke, et al, 2009) indicates that evapotranspiration (ET) is reduced by as much as 3 inches per acre on irrigated cropland, as compared to conventional tillage systems, so if the estimates of no-till acres are accurate, as much as 28,619 acre-feet of water was conserved in the Republican Basin in TBNRD in 2013 through this conservation practice.

#### XI. GROUNDWATER LEVELS

TBNRD has an extensive network of 109 dedicated groundwater observation wells (42 in the Republican Basin) and 90 irrigation wells (60 in the Republican Basin) that are used to measure groundwater levels (see Map #2, page 11). TBNRD also works cooperatively with CNPPID to gather groundwater level data. Data from 20 wells measured by CNPPID are included in TBNRD's groundwater observation well database. District water level data is reported bi-annually to U.S. Geological Survey and UNL-Conservation and Survey Division. Groundwater level data for the district is available from the Tri-Basin NRD office.

K-1114 Nolan Little June 2009 Tri-Basin Natural Resources District Data Loggers set on 12 hour interval OK-112 Natural Resources District Q TY Nonmain Ok-113 Ok-115 K-131 / K132 OK-118 RNEY 107 Data Loggers 34 Cluster Wells KEA Ok-116 K-123 / K-K-127 / K- 73 Sites 15 W Dedicated Observation Wells Monitored by Data Logger Cri-Basin Natural Resources District Q<-117 Republican Basin County Boundary Little Blue Basin Platte Basin Township OP-121 P-115 / P-116 113 / P-114 P-128 / P-129 17 W PS 183 P-140 / P-141
PHE Transect Well Cluster Well Single Well Community Other Well 7-102 P-101 OP-103 OP-104 OP-104 Highway P-111 / P-112 Os-103 6-104 O3-116 GOSPER O<sup>G-114</sup> G-121 Represented Area Show in Red 06-106 24 / G-125 (3) 3-128 / G-129 O<sub>6-119</sub> O<sub>G-131</sub> 108 / G-109 Og-130 0 N N N 9 8 8

Map #2: Dedicated Groundwater Observation Wells

## Tri-Basin NRD – Republican Basin Annual Report Appendix A

# Tri-Basin Natural Resources District New Well and Conditional Replacement Well Permit Applicant Certification and Agreement

Applicant Certification and Agreement to be bound by Conditions and Limitations on operation of a Well permitted as a New Well or as a Conditional Replacement Well pursuant to Rule 1.12, Tri-Basin Natural Resources District Rules and Regulations for Management of Land and Water Resources

	District ita	nes una rregulations i	or management or	Lana ana wate	71 1105	041 003				
	NRD Permi	it #	Applicant							
	Applicant	is the owner of the f	ollowing- described	l real estate:						
					1/4	Section	Т	N -	R	W
				*****						
	well that i	accepts and agrees t s constructed under The conditions and li	the authority of a p	permit issued b	y the	Tri-Basin Na	atural Re	he ope source	ration s Distr	of a ict
	1.	Applicant agrees to								
		River, Republican F this well. Applicar								
		by the NRD and the to offset said new the NRD on the nur	e State of Nebraska depletions may resi	. Applicant un ult in closure o	dersta f this	ands and agr well or rest	ees that rictions l	Applic	cant's	failure
	2.	Applicant agrees to								
		that is the subject or by rule or regula								
		comply with all rul this well and civil o	es and regulations	of the NRD tha	t pert	ain to this w				
	<b>3</b> .	Applicant agrees to	o comply with all cu	urrent and futu	re rul	es and regul	lations o	f the N	IRD tha	at per-
		tain to this well.	Applicant understa	nds and agrees	that	Applicant's 1	failure to	o comp	oly with	n all
		or criminal prosecu			en m	ay result iir	ciosure c	טו נוווא	weii ai	iu civii
	4.	Applicant agrees to								
		gated by this well the Applicant's failure								
		may result in closu replacement wells		civil or crimina	ıl pros	secution and	other pe	enaltie	es (con	ditional
	5.	Applicant agrees to								
_		irrigated acres will vent irrigation of la prosecution by the		r irrigation by	the N	RD may resu	ılt in clos			

Applicant certifies that Applicant is familiar with the information contained in this instrument and that to the best of Applicant's knowledge and belief, such information is true, complete and accurate. Applicant further acknowledges and agrees that the NRD and/or the State of Nebraska may impose additional conditions, limitations and restrictions on operation of the well that is the subject of this permit. Applicant further acknowledges and agrees that the conditions and limitations agreed to herein shall also be binding upon Applicant's successors-in-interest to the well and/or the subject real estate.

#### Tri-Basin NRD – Republican Basin Annual Report Appendix A

I certify that I am familiar with the information contained in this application and that to the best of my knowledge and belief such information is true, complete and accurate. I further acknowledge that Tri-Basin Natural Resources District or the State of Nebraska may impose additional conditions, limitations and restrictions on operation of the well that is the subject of this permit.

Date	Signature of Applicant
Date	Signature of Applicant
Date	Signature of Witness
Approval by Tri-Basin N	latural Resources District
трр. ота. ву т. т. дол. т.	
Date	Signature of Tri-Basin NRD Representative

## Tri-Basin NRD – Republican Basin Annual Report Appendix B

Updated February 7, 2014	Tri-E	Tri-Basin NRD Republican Basin Water Use	epublican B	asin Water	Use		
	2007	2008	2009	2010	2011	2012	2013
Kearney Co							
Certified Irrigated Acres	41,644.42	41,424.32	41,424.04	41,347.80	41,348.06	41,351.41	41,365.70
Pivots							
Actual Reported Acres	22,385.64	23,654.85	23,989.45	23,420.07	19,638.94	20,353.60	24,643.73
Gallons Used	3,541,381,170	3,818,925,847	4,076,847,096	2,488,373,015	3,068,789,295	6,888,349,787	7,063,988,419
Average acre Inches	5.83	5.95	6.26	3.91	5.75	12.46	10.56
Gravity							
Actual Reported Acres	8,713.63	7,884.45	6,782.76	6,336.83	6,379.60	6,331.91	4,280.08
Gallons Used	2,104,139,800	2,053,285,966	1,861,506,618	1,061,531,125	1,661,542,627	3,198,184,631	2,290,597,600
Average acre Inches	8.89	9:59	10.11	6.2	9.59	18.60	19.71
Combination							
Actual Reported Irrigated Acres	5,951.20	6,311.51	7,081.61	6,762.61	11,616.34	11,607.68	10,100.91
Gallons Used	1,045,863,800	1,029,295,800	1,216,909,854	738,619,900	2,194,067,314	4,146,802,562	3,338,885,321
Average acre Inches	6.47	6.01	6.33	4.0	96.9	13.16	11.98

Phelps Co							
Certified Irrigated Acres	90,034.35	90,056.49	90,074.28	90,122.96	90,327.49	90,253.97	90,349.41
Pivots							
Actual Reported Acres	43,456.40	44,661.74	47,177.54	47,644.47	47,521.53	47,981.03	51,634.20
Gallons Used	7,514,412,579	9,230,092,637	9,961,041,554	5,979,452,137	7,841,490,355	18,803,353,405	18,349,493,213
Average acre Inches	6.37	7.61	7.78	4.6	6.08	14.43	13.09
Gravity							
Actual Reported Acres	21,777.69	20,956.49	17,813.10	17,294.97	16,438.95	16,632.09	8,916.10
Gallons Used	5,988,777,976	7,023,928,292	6,659,829,299	3,811,778,121. 75	4,761,461,576	9,377,865,221	5,972,669,159
Average acre Inches	10.13	12.34	13.77	8.12	10.67	20.76	24.67
Combination							
Actual Reported Irrigated Acres	14,799.53	16,210.16	16,395.53	16,540.54	18,173.41	18,052.33	22,874.36
Gallons Used	2,797,496,400	3,884,727,743	3,834,900,501	2,340,349,155	3,563,491,797	7,338,795,255	8,950,299,149
Average acre Inches	96.9	8.83	8.61	5.2	7.22	14.97	14.41

#### Tri-Basin NRD - Republican Basin Annual Report Appendix B

Gosper Co Certified Irrigated Acres 57,746.74 Pivots	2008 3.74 57,765.72 .79 31756.88	2009 2 57,809.41 88 32,729.99 50 6,022,172,888	2010	2011	2012	0,00
			57,896.60		2102	2013
			57,896.60			
Pivots				57,760.72	57,742.11	57,732.05
Actual Reported Acres 29671.79			33,488.46	34,753.39	36,082.66	34,348.63
Gallons Used 4,571,094,6	,694 5,640,850,350		5,874,547,547	7,451,121,723	13,656,214,745	12,023,940,692
Average acre Inches 5.	5.67 6.54	54 6.78	6.5	7.90	13.94	12.89
Gravity						
Actual Reported Acres 13368.98	12164.20	11,677.00	10,885.50	10,258.10	9,784.30	5,515.43
Gallons Used 3,292,907,8	,800 4,052,542,200	3,708,816,337	3,203,004,797	3,327,536,001	6,393,890,714	3,343,182,638
Average acre Inches 9.	9.07	11.70	10.8	11.95	24.07	22.32
Combination						
Actual Reported Irrigated Acres 8308.	8.65 8434.50	8,456.40	8,294.00	8,603.37	8,571.25	14,310.51
Gallons Used 1,736,490,0	1,858,770,700	1,706,652,900	1,472,894,300	1,747,329,785	3,336,512,330	7,034,537,746
Average acre Inches 7.	7.70 8.12	7.43	6.54	7.48	14.34	18.10

## Tri-Basin NRD – Republican Basin Annual Report Appendix B

2013 Meter Data Results							
		Tri-Basin NRD	- February 7, 2	2014			
County	System	Certified Irrigated Acres	Irrigated Acres	Gallons Used	Average Acre Inches		
Kearney Co	Pivots		24,643.73	7,063,988,419	10.56		
neuricy co	Gravity		4,280.08	2,290,597,600			
	Combination		10,100.91	3,338,885,321	12.17		
Totals		41,365.70	39,024.72	12,693,471,340	11.98		
Phelps Co	Pivots		51,634.20	18,349,493,213	13.09		
	Gravity		8,916.10	5,972,669,159	24.67		
	Combination		22,874.36	8,950,299,149	14.41		
Totals		90,349.41	83,424.66	33,272,461,521	14.69		
Gosper Co	Pivots		34,348.63	12,023,940,692	12.89		
	Gravity		5,515.43	3,343,182,638	22.32		
	Combination		14,310.51	7,034,537,746	18.10		
Totals		57,732.05	54,174.57	22,401,661,076	15.23		
Republica	n Basin Totals						
	Pivots		110,626.56	37,437,422,324	12.46		
	Gravity		18,711.61	11,606,449,397	22.84		
	Combination		47,285.78	19,323,722,216	15.05		
	Totals	189,447.16	176,623.95	68,367,593,937	14.25		
	Republican Basin Notes - Gosper County has 149 certified acres watered by wells in Furnas County. Phelps County has 250 acres watered with a combination of 3 wells in Phelps & 1 well in Harlan county; these same 4 wells water 117 acres in Harlan County.						

### Tri-Basin NRD – Republican Basin Annual Report Appendix B

Tri-Basin NRD - 2013 Water Use [general statistics] - February 3, 2014

TH-Dasiii NKD -	ZU15 Water Use [g			
	Rep. Basin	Platte Basin	Little Blue Basin	Total
Kearney				
Total Irr. wells	364	929	826	2,119
metered wells	348	126	143	617
Exemptions	15			15
Estimate Required		3	2	
Meter Required for 2014	1	3		
Reported Actual Irrigated Acres	39,024.72	14,621.23	17,681.20	71,327.15
Certified Acres	41,365.70	95,778.33	91,435.75	228,579.78
Phelps				
Total Irr. wells	758	1,410		2,168
metered wells	738	201		939
Exemptions	13			13
Estimate Required		4		
Meter Required for 2014	8	4		
Reported Actual Irrigated Acres	83,278.66	25,164.41		108,443.07
Certified Acres	90,349.41	167,501.73		257,851.14
Gosper				
Total Irr. wells	484	262		746
metered wells	478	40		518
Exemptions	6			6
Estimate Required		1		
Meter Required for 2014				
Reported Actual Irrigated Acres	54,484.57	4,798.19		59,282.76
Certified Acres	57,732.05	35,696.95		93,429
Basin Totals				
Total Irr. wells	1,606	2,601	826	5,033
metered wells	1,564	367	143	2,074
Exemptions	34	0	0	34
Estimate Required	0	8	2	
Meter Required for 2014	9	8	0	
Reported Actual Irrigated Acres	176,787.95	44,583.83	17,681.20	239,052.98
Certified Acres	189,447.16	298,977.01	91,435.75	579,859.92

Notes: Of the 34 meter exemptions 22 of those wells were not used - 12 Wells reported an estimated use.

Series Wells - We have a total of 123 series wells [where 2 or more wells work together to water the same acres] Several wells in a series do not have a meter as the wells are tied together and the water goes through the same meter. In the Republican basin we have 119 series wells and 2 in each of the Platte and Little Blue basins.

We have 26 contracts, approx 1806.55 acres in the CREP program.

Supplemental Wells - The table on Supplemental wells was produced from well permits that have been permitted for supplemental use. In 2013 many supplemental wells were used as the only water source on a field so that surface water could be transferred.

Staff has completed 518 meter inspections for 2013. Inspections for 2013 will continue into the spring of 2014 for wells where meters had been removed and also meters that had been reported to be not working correctly.

#### Tri-Basin NRD - Republican Basin Annual Report Appendix B

