



# Annual Report of Water Use Activities in the South Platte Natural Resources District

For the 2015 Basin-Wide Meeting

**Report Years: 2014**  
**Meeting Date: June 18, 2015**

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**ANNUAL REPORT OF WATER USE ACTIVITIES  
IN THE SOUTH PLATTE NATURAL RESOURCES DISTRICT  
TO MEET THE REQUIREMENTS OF THE INTEGRATED MANAGEMENT PLAN  
FOR THE 2015 BASIN-WIDE MEETING**

I. GENERAL SUMMARY

- A. The following is a compilation of records, statistics and historic conditions of water use which have been tracked by the South Platte Natural Resources District (SPNRD) for 2014. All information supplied for this summary is available within a GIS database, complete with the locations and attributes. This report has been compiled for the June 18, 2015 Basin-Wide meeting.

II. INTRODUCTION

- A. This report is intended to satisfy the SPNRD tracking and reporting requirements as described by the Monitoring and Studies section of the SPNRD Integrated Management Plan (IMP). The SPNRD will be responsible for tracking the following activities within the District on an annual basis: (1) certification of ground water uses and any changes to these certifications; (2) approved transfers, including all of the information provided with the application and used in the approval of the transfer; (3) any flow meter data collected; (4) any water well construction permits issued; (5) any other permits issued by the SPNRD; (6) any conditions associated with any permits issued; (7) information gathered through the municipal and non-municipal industrial accounting process; (8) any variances issued, including: the purpose, the location, any required offset, the length of time for which the variance is applicable and the reasoning behind approval of the variance; (9) any retirements of irrigated acres or other activities by the SPNRD for the purpose of returning to a fully appropriated condition; (10) information related to any water banking transactions; and (11) offsets provided for depletions resulting from increased consumptive use related to the above listed items.

The items tracked and reported will subsequently be used by the SPNRD and the Department of Natural Resources (DNR) to measure the success of the controls, incentive measures and other action items contained in the IMP at meeting the goals and objectives of the IMP. Two evaluation processes for measuring success are described in the IMP. The first is an annual evaluation that will forecast the balance of depletions and accretions from the report year through 2048. The second evaluation occurs periodically and will be more robust, including updating and running ground water models. These evaluation processes will be carried out by the SPNRD and the DNR after the annual basin-wide meeting. The tracking, reporting, and evaluation processes are described in more detail in the Monitoring and Studies section of the IMP. In addition to the evaluation processes, the information that is tracked and reported will also be used by the State to help meet requirements of the Platte River Recovery Implementation Program (Program).

### III. CERTIFIED ACRES

- A. The SPNRD began certifying ground water irrigated acres in October 2002 and ended the certification process in the first half of 2006. The SPNRD certified irrigated acres are based on historically irrigated acres proven by Farm Service Agency (FSA) maps, tax records or other appropriate documentation.

The SPNRD has two types of certified acres; active and inactive. Inactive acres are any certified acres that belong to wells that are inactive and do not have a flow meter installed and do not receive an allocation. These unused wells are enrolled in a SPNRD program called Temporary Deferment. Active acres are all acres that are being irrigated or have a flow meter installed and therefore receive an allocation. Detailed data regarding the number of certified irrigated acres can be found in Appendix A. Map 1 provides a look at the state designated areas in the SPNRD.

### IV. APPROVED TRANSFERS

- A. For 2014, the District approved fourteen (14) transfers. See Appendix B for a more detailed look at the transfers.
  1. Seven transfers involved moving around existing certified acres to allow for new pivots to be installed. No expansion of acres occurred, but more of moving existing acres to new locations to make the operator more efficient.
  2. Six transfers that the SPNRD Board approved all dealt with industrial transfers. DNR approved Industrial Transfer Notices for one of these transfers, and another transfer required both a DNR industrial transfer permit and a DNR out of state transfer permit. The other four industrial transfers required no DNR permits/notices.
  3. One transfer involved the City of Chappell constructing new waste water lagoons on 37.54 certified irrigated acres. The City requested to transfer the historical consumptive use of those 37.54 acres to a water bank to be earmarked for use by the City if they exceed their municipal baseline.

### V. WELL CONSTRUCTION PERMITS

#### A. Supplemental Ground Water Wells

1. The SPNRD issued no supplemental ground water wells.

#### B. Supplemental Surface Water Wells

1. The SPNRD issued no supplemental surface water well permits.

#### C. Replacement Wells

1. The SPNRD issued five (5) replacement well permits. These are replacement wells for a well that has already been registered. All of these replacement permits were for wells that were not producing the amount of water for which they were originally

designed to pump. This could be due to several reasons such as casing collapse, pumping sand, water table drop or other reasons.

D. Temporary Wells

1. The SPNRD issued no temporary well permits.

E. De-Watering Wells

1. The SPNRD issued no de-watering well permits.

F. Other Permits

1. The SPNRD issued one (1) new well permit for an industrial well that was designed to pump fifty (50) gallons per minute or less. This well was used for drilling and the hydraulic fracturing of an oil well.

VI. VARIANCES

A. The SPNRD considers any request that is contrary to existing rules or regulations of the SPNRD or DNR as a variance. The SPNRD has a Variance Advisory Group that reviews and makes recommendations to the SPNRD Board of Directors on all irrigation related variances requested. All industrial and municipal variance requests go directly to the SPNRD Board of Directors. The Board reviews variances on a case-by-case basis, and as the elected governing body; the Board makes the final determination.

In 2014 there were eight (8) approved variances. Four approved variances allowed transfers to occur within two miles within of a city of first class or within one mile of a city of second class or village limit. One approved variance allowed a transfer of certified irrigated acres which did not meet the 50 percent of allocation pumped from the previous allocation period rule. One variance allowed a development to delay the accrument of certified irrigated acres within city limits as the acres were changed from agricultural use to municipal use. Two approved variances allowed the time frame for establishing industrial baselines to be extended beyond the original deadline. See Appendix C for more information.

VII. MUNICIPAL AND INDUSTRIAL ACCOUNTING

A. The SPNRD began implementing the Industrial Accounting portion of the IMP in early 2010. Industrial wells were identified through the DNR registered well database and had to pump greater than 50 gallons per minute. The SPNRD decided that in order for an industrial user to obtain a baseline certification they must have pumping history for every year during the five-year period from August 1, 2001 through July 31, 2006. Unless a variance is granted, a user that has not met this five-year pumping history criterion will be given a non-baseline certification, and that user will be responsible for offsetting the water use. The SPNRD allows industrial users who have a non-baseline certification to offset new or expanded uses through transfers including irrigation allocation(s), certified irrigated acres or the District's water bank.

Currently, the SPNRD has twenty-seven (27) non-baseline certifications. Ten of the twenty-seven had or could have had an active industrial use in 2014 and all water pumped will be offset by an existing irrigation allocation as agreed upon by the user and the SPNRD Board of Directors. Non-baseline certifications can change annually as temporary transfers expire and get removed from the list, and new temporary transfers are approved by the Board and are added to the list. See Appendix D table for a breakdown of non-baseline industrial uses.

In 2010, the SPNRD granted variances from the baseline certification process. These variances were made for established industries in the SPNRD who were unable to document water usage back to August 1, 2001. Eight of these industries exist within the SPNRD and they were required to install a flow meter and allowed to go forward three years from the time of installation. After three years a baseline will be issued based on the highest amount pumped during the three year period. This baseline will then be used as the amount pumped from August 1, 2001 until the time of establishment. After the baseline becomes established regular accounting will start from that point forward. See Appendix E for further information on active industrial variances.

Eleven industries now have established baselines. These industries either had records of water sales, tax receipts, flow meter readings, electrical power records, or previous irrigation pumping history, etc. which could be documented back to August 1, 2001 and used to establish the approved baseline. The baseline was determined by looking at the amount of water consumed by the industry between August 1, 2001 and July 31, 2006, or by converting certified irrigated acres into an industrial baseline by board approval. All of these industries now currently have flow meters installed and those are read on a monthly basis. None of the previously mentioned industries discharge any water and all pumping is looked at as one hundred (100) percent consumptive use. The SPNRD tracks both industrial and municipal use on an August 1<sup>st</sup> to July 31<sup>st</sup> timeframe. See Appendix F for a list of existing industries and how their baselines compare with current pumping.

- B. The SPNRD has certified baselines for all ten municipal water systems in the District. Municipal baselines include information from all wells the municipality uses that pump over 50 gallons per minute. The Chappell, Potter, and Sidney golf courses are all figured into their municipal baselines. Baselines were figured with the best known data at the time.

Sidney, Chappell, and Kimball discharge some or all of their waste water back into Lodgepole Creek. Lodgepole previously had discharged waste water back into the creek but in 2012 went to full retention lagoons. The rest of the remaining municipalities' waste water is held in full retention lagoons.

Similar to industrial baselines, municipal baselines were calculated by documenting usage between August 1, 2001 and July 31, 2006. The highest one year period (August 1<sup>st</sup> to July 31<sup>st</sup>) during this time was then used as that municipality's baseline. Appendix G shows the municipal baselines, per capita use, and current year usage.

## VII. IRRIGATION FLOW METER DATA

- A. The SPNRD Board in January 2004 required flow meters to be installed on all irrigation wells. Flow meters were then installed incrementally through March 2009. All certified irrigated acres located in the Lodgepole Creek Valley have had an allocation in place beginning in 2007. The remainder of the District (Tablelands and South Platte Valley) has had an allocation in place since 2009.

The SPNRD Board in March 2012 decided the irrigation allocations for all subareas within the district for the years 2013-2015. The Board lowered the allocation in all fully appropriated subareas by thirty percent from twenty acre-inches to fourteen acre-inches (42 acre-inches over three years); this area is also known as the Tablelands. The fully appropriated subareas also went from a four year allocation period to a three year allocation period.

The allocation in two overappropriated subareas was also lowered. The South Platte Valley subarea was lowered by ten percent from twenty acre-inches to eighteen acre-inches (54 acre-inches over three years) and also went from a four year allocation period to a three year allocation period. The allocation the Oliver Reservoir to Buffalo Bend subarea was lowered by twelve and half percent from sixteen acre-inches to fourteen acre-inches (42 acre-inches over three years). The three remaining overappropriated subareas remained the same: Pine Bluffs to Oliver and Buffalo Bend to Sidney subareas remained at fourteen acre-inches (42 acre-inches over three years), and Sidney to Colorado subarea remained at sixteen acre-inches (48 acre-inches over three years).

Appendix H summarizes the allocation history of the SPNRD. See Map 2 for a breakdown of allocation amounts per subarea through the end of 2015. Appendix I provides a detailed look at irrigation water usage for the entire SPNRD from 2011 through 2014.

## IX. RETIRED ACRES AND OTHER STREAM FLOW ACCRETION ACTIVITIES

- A. The SPNRD will implement measures within the first ten (10) year increment of the IMP to offset an average annual depletion rate of one hundred fifty (150) acre-feet to the North Platte River, four hundred (400) acre-feet to the South Platte River, and one hundred fifty (150) acre-feet to Lodgepole Creek for the period 2043-2048. These rates are the current best estimates and are subject to change based upon new data and information.

Through 2014, the SPNRD retired or decertified 1,412 acres equating to an estimated 580 acre-feet of water benefitting the Lodgepole Creek. These acres are all located in the over appropriated Lodgepole Creek Valley. See Appendix J for a complete breakdown of all retirement activities.

## X. OTHER ACTIVITIES

- A. The SPNRD and North Platte Natural Resources District (NPNRD) began work on a regional ground water model, Western Water Use Model (WWUM), for the two Districts

in 2009. This regional model will build upon the modeling work that was completed during SPNRD and NPNRD's time spent participating in COHYST. The SPNRD and NPNRD share a ground water modeler, Thad Kuntz, P.G., with Adaptive Resources, Inc. This project is partially funded through the Interrelated Water Management Plan Program Fund.

- B. The SPNRD, Twin Platte Natural Resources District (TPNRD), and NDNR worked together on a recharge project with Western Irrigation District. A project summary for the Twin Platte NRD and South Platte NRD Re-Use Pits Recharge Project 2014 has been submitted to the Platte Basin Coalition.

During the spring of 2014 the SPNRD diverted water twenty five days for the recharge project during excess flows on the South Platte River. Approximately one hundred twenty one (121) acre-feet was recharged in the South Platte Valley subarea in the over appropriated area.

- C. The SPNRD, NPNRD and the TPNRD in September of 2013 applied for a Nebraska Environmental Trust grant for the Hydrogeology of Western Nebraska. This grant will be used to evaluate oil and gas logs to help better determine the base of the Ogallala Aquifer.
- D. The SPNRD, TPNRD, and the University of Nebraska Lincoln – Conservation and Survey Division (CSD) also applied for a United States Geological Survey (USGS) 104b program grant to document stream and groundwater interaction in the South Platte River. The goal of this grant is to evaluate the South Platte River and better determine gaining and losing areas of the river.

## XI. GROUND WATER LEVELS

- A. Tracking and reporting of ground water levels is not required in the IMP. The SPNRD measures 184 observation wells in the spring and fall annually.



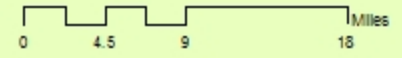
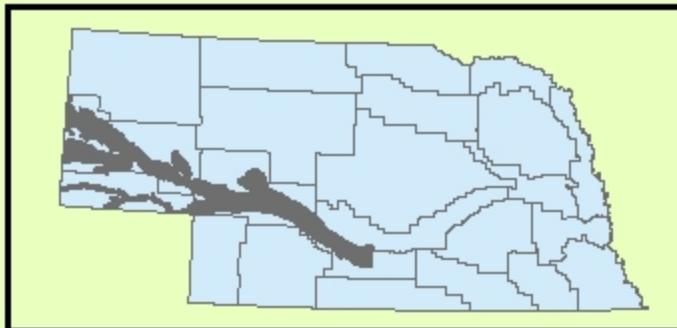
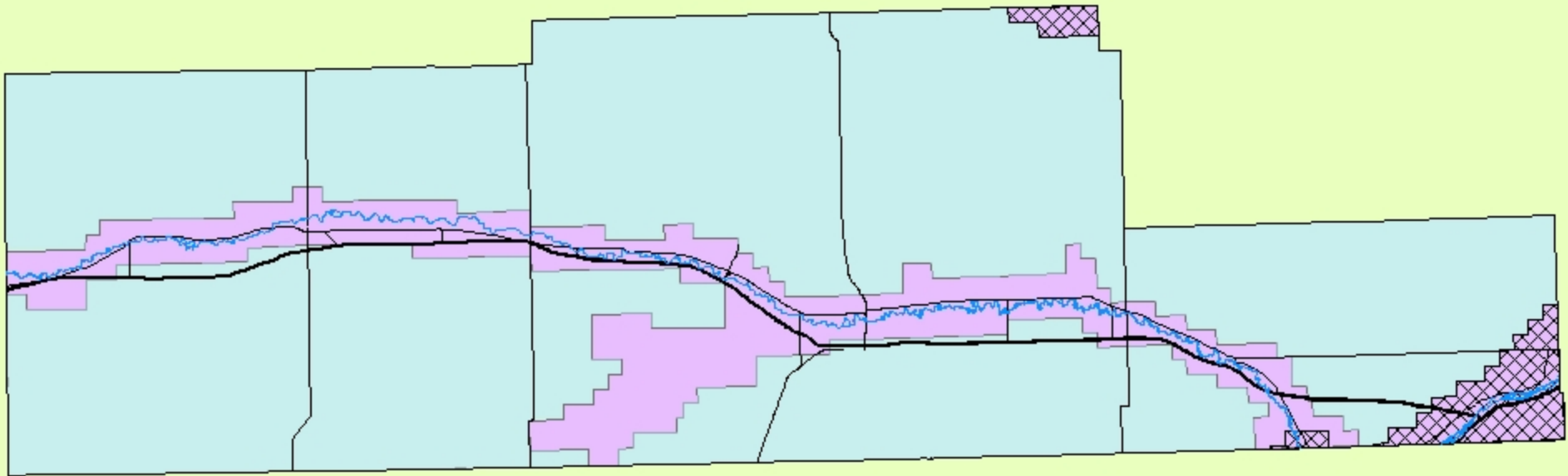
Map 1

# Overappropriated, Fully Appropriated and Nebraska New Depletion Plan Areas



**Explanation**

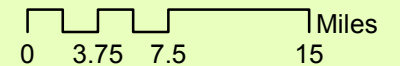
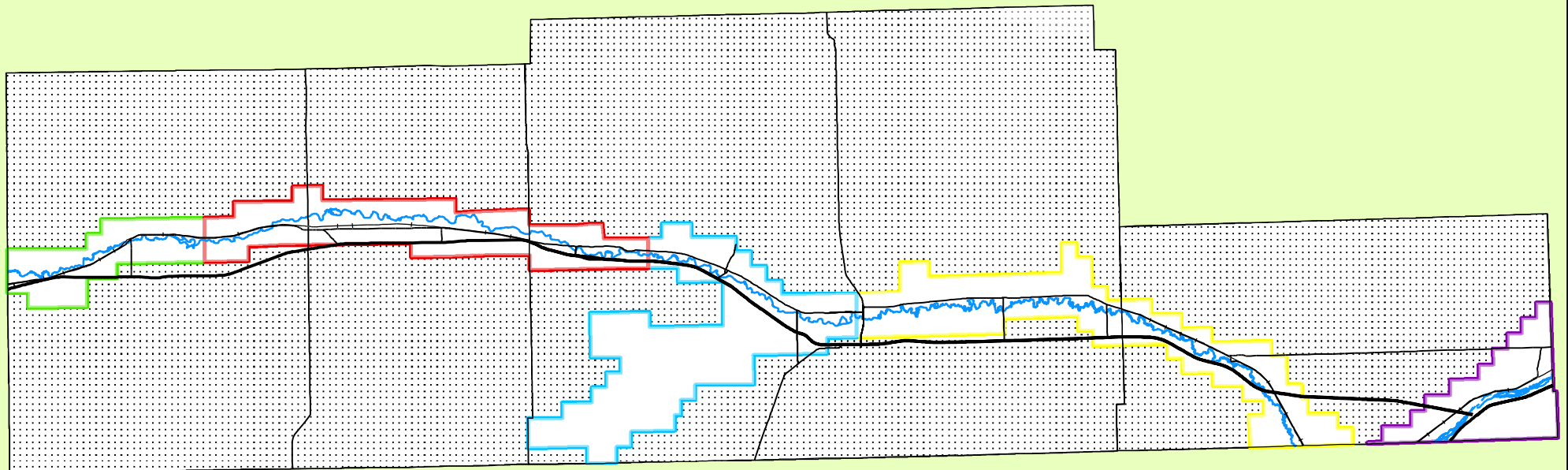
- Nebraska New Depletion Plan 28%/40-year Area
- Fully Appropriated
- Over Appropriated



# Allocation Subareas and Allocations for 2013 through 2015



Explanation	
	Pine Bluffs to Oliver Reservoir; 14"/year or 42" for 2013 through 2015
	Oliver Reservoir to Buffalo Bend; 14"/year or 42" for 2013 through 2015
	Buffalo Bend to Sidney; 14"/year or 42" for 2013 through 2015
	Sidney to Colorado; 16"/year or 48" for 2013 through 2015
	South Platte Valley; 18"/year or 54" for 2013 through 2013
	Tablelands; 14"/year or 42" for 2013 through 2015



## Appendix A

### SPNRD Certified Irrigated Acres

	Kimball	Cheyenne	Deuel	Total	Percentage
Active Overappropriated	16,468	18,306	14,545	49,319	37%
Inactive Overappropriated	524	1,569	586	2,679	2%
Active Fully-Appropriated	25,516	43,841	9,429	78,786	59%
Inactive Fully-Appropriated	487	993	494	1,974	2%
Total Certified	42,995	64,709	25,054	132,758	100%
Total Cert. Acres in Nebraska New Depletion Plan 28%/40- year Area	0	56	10,499	10,555	

**Appendix B**  
**2014 SPNRD Approved Transfers**

<b>NRD PERMIT #</b>	<b>TOWNSHIP</b>	<b>RANGE</b>	<b>SECTION</b>	<b>ACRES</b>
TR-IND-14-Nienhueser	12	49	15	None
TR-AC-14-Darnell	15	55	25	85.0
	15	54	29	
	15	54	30	
PVT-14-Wilkie	14	52	3	7.8
PVT-14-Huskerland	12	42	7	100.2
TR-IND-14-Kuehn	14	51	13	None
TR-IND-14-Cabela's	14	49	32	303.1*
	14	49	33	
	13	49	4	
	13	49	5	
TR-IND-14-Cabela's- SO-2014	14	49	32	66.6
	14	49	33	
	13	49	4	
	13	49	5	
TR-IND-14-Kielian	13	49	3	96.5
TR-AC-14-Jessen	12	45	5	52.8
	12	45	8	
TR-MUN-14-Chappell	13	45	23	37.54
TR-14-Derry	13	45	23	298.06
TR-IND-14-QA Recyclers	14	51	24	None
	14	50	18	
TR-AC-14-Deuser	15	50	7	3.06
	15	50	18	
TR-AC-14-Beyer	15	50	7	19.02
	15	50	18	
	16	50	30	

\* These 303.1 acres will be incrementally decertified over a period of ten years. Annual variations to these acres will be reported separately (see TR-IND-14-Cabela's-SO-2014 for this year's transfer).

**Appendix C**  
**2014 SPNRD Approved Variances**

<b>NRD PERMIT #</b>	<b>TOWNSHIP</b>	<b>RANGE</b>	<b>SECTION</b>	<b>ACRES</b>
VAR-AC-14-Darnell	15	55	25	85
VAR-IND-14-Cabela's	14	49	32	303.1
	14	49	33	
	13	49	4	
	13	49	5	
VAR-MUN-14-Chappell	13	45	23	37.54
VAR-MUN-14-SRMC	14	49	33	24.2
	13	49	4	
VAR-IND-14-SCGA	12	43	18	0
VAR-IND-14-Madden	15	57	6	0
VAR-IND-14-Kielian	13	49	3	96.5
VAR-14-Derry	13	45	23	298.06

**Appendix D**  
**SPNRD Non-Baseline Industrial Certifications 2014**

<b>Well Reg. #</b>	<b>Legal</b>	<b>Industrial Use</b>	<b>Offset Provided By</b>
G-021823	Sec. 12 T16N R57W	Oil Fields	To Be Determined (TBD)
G-022051	Sec. 24 T13N R56W	Oil Fields	TBD
G-014546	Sec. 34 T14N R53W	Oil Fields	TBD
G-022281	Sec. 11 T14N R53W	Oil Fields	TBD
G-134511	Sec. 22 T17N R52W	Oil Fields	TBD
A-002770	Sec. 28 T15N R54W	Oil Fields	TBD
G-022347	Sec. 23 T13N R57W	Oil Fields	TBD
G-022048	Sec. 34 T17N R51W	Oil Fields	TBD
G-023351	Sec. 27 T14N R50W	Oil Fields	TBD
A-004712	Sec. 11 T14N R59W	Oil Fields	irrigation allocation on tract 14N59W110001*
G-022050 G-022049	Sec. 19 T14N R55W Sec. 19 T14N R55W	Oil Fields	TBD
G-074242	Sec. 1 T12N R44W	Sand & Gravel Mine	TBD
A-004408	Sec. 28 T15N R55W	Sand & Gravel Mine	irrigation allocation on tract 15N55W280004*
G-054269	Sec. 12 T13N R56W	TBD	irrigation allocation on tract 13N56W120001*
G-019421 G-019973 G-019423	Sec. 21 T14N R55W Sec. 21 T14N R55W Sec. 21 T14N R55 W	Oil Fields	TBD
G-154988 G-154989 G-154990	Sec. 6 T12N R43W Sec. 6 T12N R43W Sec. 6 T12N R43W	Sand & Gravel Mine	TBD
G-021178	Sec. 23 T17N R52W	Oil Fields	TBD
G-039899	Sec. 5 T15N R52W	Oil Fields	TBD
G-021179 G-021621	Sec. 23 T17N R52W Sec. 23 T17N R52W	Oil Fields	TBD
G-146042	Sec. 13 T15N R56W	Sand & Gravel Mine	irrigation allocation on tract 15N56W230005*
G-030434 G-026066	Sec. 2 T12N R55W Sec. 2 T12N R55W	Oil Fields	TBD
G-041796	Sec. 13 T14N R51W	Sand & Gravel Mine	Irrigation allocation on tract 14N51W130001*
G-058500A	Sec. 18 T14N R50W	Oil Fields	Irrigation allocation on tract 14N50W180002*
G-014150	Sec. 10 T14N R52W	Interstate Construction	Irrigation allocation on tract 14N52W100001*
G-014002	Sec. 7 T13N R47W	Sand & Gravel Mine	Irrigation allocation on tracts 13N46W080001 and 13N47W070001*

G-003090	Sec. 5 T14N R52W	Interstate Construction	Irrigation allocation on tract 14N52W050002*
G-094357B	Sec. 15 T12N R49W	Wind turbines & Roads	Irrigation allocation on tract 12N49W150001*

\* Total combined usage of both industrial and irrigation water is reported as totals in the SPNRD Irrigation Water Usage Report found in Appendix I.

**Appendix E**  
**SPNRD Active Industrial Variances 2014**

<b>Well Reg. #</b>	<b>Legal</b>	<b>Use</b>	<b>Baseline Gallons</b>	<b>2014 Gallons</b>
G-131190 G-083186	Sec. 14 T13N R45W Sec. 14 T13N R45W	Feedlot	TBD	26,952,200
G-123698	Sec. 4 T12N R45W	Feedlot	TBD	2,636,500
G-077801	Sec. 29 T14N R55W	Hazardous Waste Incinerator	TBD	34,653,000
G-003169	Sec. 22 T13N R45W	Coop	TBD	568,909
G-054015	Sec. 6 T15N R57W	Oil Fields	TBD	0
G-002327	Sec. 2 T12N R42W	Aerial Spraying	TBD	264,214
G-101853	Sec. 23 T16N R50W	Coop	TBD	113,916
G-164175	Sec. 18 T12N R43W	Golf Course	TBD	9,100,053



**Appendix F**  
**2014 SPNRD Active Industries with Baselines**

Well Reg. #	Legal	Use	Baseline Gallons	Baseline Year	2014 Gallons*
G-157945 G-157946 G-031351	Sec. 5 T13N R50W Sec. 5 T13N R50W Sec. 5 T13N R50W	Livestock	299,315,624	2005-2006	121,641,696
G-091299	Sec. 30 T16N R55W	Sand & gravel mine	22,154,542	2001-2002	0
G-013034	Sec. 19 T15N R55W	Oil fields	88,605	2004-2005	272
G-051806 G-058832	Sec. 32 T14N R55W Sec. 6 T13N R55W	Oil fields, roads, wind turbines	2,203,750	2003-2004	4,368,581**
G-117269	Sec. 5 T14N R52W	Water well drilling	655,763	2002-2003	282,405
G-059572 G-119599	Sec. 15 T13N R51W Sec. 11 T14N R51W	Oil fields	2,333,334	2005-2006	1,270,500
G-041367***	Sec. 23 T15N R56W	Sand & gravel mine	5,650,134	2005-2006	706
G-058331 G-064838	Sec. 34 T15N R55W	Golf Course	189,569,845	2001-2002	80,475,365
A-003167A	Sec. 29 T15N R55W	Oil fields	6,348,605	2013	260,900
G-059901	Sec. 3 T13N R49W	Sand & gravel mine	41,925,776	2014	3,976,745
G-116176	Sec. 32 T14N R49W	Ponds & landscape/turf	10,430,000	2014	0

\* 2014 Gallons are calculated from the industrial water year of August 1, 2013 through July 31, 2014.

\*\* These wells are in the fully appropriated area of the District and are over their five year baseline.

\*\*\* Well G-041367 received a variance to establish a partial baseline because pumping did not occur during all five baseline years. If the baseline amount of 5,650,134 gallons is exceeded, all offsets will be automatically deducted from certified irrigated tract #15N56W230005. See 2/5 variance request in the 2010 report.

**Appendix G**  
**SPNRD Municipal Baselines and 2014 Usage**

<b>Municipality</b>	<b>DNR Transfer Permit Gallons</b>	<b>Baseline Gallons</b>	<b>Baseline Year</b>	<b>Baseline Per Capita Use* gallons/ person/ day</b>	<b>2014 Gallons**</b>	<b>2014 Per Capita Use*** gallons/ person/day</b>
Big Springs	164,574,899	154,986,748	2002-2003	1,016	55,735,000	382
Bushnell	N/A	13,092,375	2001-2002	221	6,777,142	150
Chappell	N/A	116,968,411	2001-2002	326	92,596,084	273
Dalton	N/A	68,634,300	2001-2002	566	25,644,300	223
Dix	N/A	72,023,100	2001-2002	739	33,976,500	365
Gurley	N/A	45,332,050	2001-2002	545	24,600,111	315
Kimball	N/A	243,050,000	2001-2002	260	117,769,998	129
Lodgepole	N/A	53,443,494,	2001-2002	421	32,255,200	278
Potter	N/A	135,421,817	2001-2002	951	71,667,258	583
Sidney	1,300,000,000	633,042,003	2001-2002	276	423,464,000	172

\* Based on 2000 census population numbers

\*\* Based on August 1, 2013 through July 31, 2014 water year

\*\*\* Based on the 2010 census population numbers

**Appendix H**  
**SPNRD Irrigation Allocation History**

<b>Allocation Subarea</b>	<b>2007-2009</b>	<b>2009-2012</b>	<b>2010-2012</b>	<b>2013-2015</b>
Pine Bluffs to Oliver Reservoir	48"/acre		42"/acre	42"/acre
Oliver Reservoir to Buffalo Bend	54"/acre		48"/acre	42"/acre
Buffalo Bend to Sidney	48"/acre		42"/acre	42"/acre
Sidney to Colorado	54"/acre		48"/acre	48"/acre
South Platte Valley		80"/acre		54"/acre
Tablelands		80"/acre		42"/acre

## Appendix I SPNRD Irrigation Water Usage Report

### Districtwide Water Usage Analysis Period: 2011 - 2014

	2011	2012	2013	2014	Total
Weighted Avg. Inches Pumped*	9.78	17.48	11.72	9.37	48.35
High	30.92	62.49	62.64	44.33	
Median	9.20	17.33	11.42	9.21	
Total Acre-Feet Pumped	97,217.53	178,373.80	120,615.68	95,623.45	491,830.46
Total Acres-Inches Pumped	1,166,610.39	2,140,485.65	1,447,388.2	1,147,481.41	5,901,965.65
Total Acres-Inches Pumped ÷ By Total Acres	9.10	16.66	11.26	8.96	45.98
Total Number of Inactive Certified Irrigated Acres***	4,638.5	4,414.0	4320.4	4,653.5	
Total Number of Active Certified Irrigated Acres	128,229.1	128,478.5	128,617.2	128,103.7	
Total Number of Certified Irrigated Acres	132,867.6	132,892.4	132,937.6	132,757.2	

#### Range of Inches Used:

Scale	2011	2012	2013	2014
0 - 4	17%	8%	11%	15%
4.01 - 8	23%	5%	14%	25%
8.01 - 12	33%	11%	30%	38%
12.01 - 16	17%	18%	29%	17%
16.01 - 20	7%	25%	11%	3%
20+	3%	33%	4%	1%

Scale	2011 - 2014
0 - 16	10%
16.01 - 32	13%
32.01 - 48	28%
48.01 - 64	35%
64.01 - 80	12%
80+	2%

#### Crop Water Usage\*\*:

Crop	2011 Avg. In.	2011 Percent of Acres	2012 Avg. In.	2012 Percent of Acres	2013 Avg. In.	2013 Percent of Acres	2014 Avg. In.	2014 Percent of Acres
Alfalfa	10.9	7.3%	20.8	8.3%	12.8	8.5%	10.8	8.2%
Beans	7.8	6.3%	15.0	9.1%	9.8	5.7%	8.3	11.2%
Corn	10.6	50.1%	18.3	52.9%	13.0	49.7%	10.2	47.4%
Fallow	0.0	0.7%	0.0	0.5%	0.0	0.5%	0.0	0.5%
Hay	6.4	2.8%	15.0	5.2%	9.1	5.1%	7.3	4.0%
Other	1.5	0.3%	1.8	0.4%	5.6	0.1%	5.2	0.8%
Pasture	7.1	3.8%	11.1	4.4%	7.7	3.7%	7.6	4.0%
Potatoes	14.0	0.1%	23.9	0.1%	10.6	0.1%	12.4	0.0%
Small Grains	5.4	20.4%	10.4	12.6%	7.9	20.9%	5.4	17.5%
Sugar Beets	13.5	5.3%	21.4	5.1%	13.2	3.9%	11.5	5.1%
Sunflowers	5.0	2.4%	10.9	0.9%	8.0	1.5%	6.0	0.7%
Unknown	0.0	0.4%	1.7	0.7%	16.5	0.4%	12.8	0.6%
All Crops	9.0	100%	16.6	100%	11.2	100%	9.0	100%

\* Calculated by removing the high use tract and the tracts that did not use any water, then calculated the usage of all tracts individually and averaged those numbers.

\*\* Crop Water Usage is based off of the number of acres per crop, which are based on field observations taken at the time flow meters are read. Crop Water Usage could be subject to change as more accurate crop-acre information becomes available.

\*\*\*Inactive Certified Irrigated Acres are acres enrolled in Temporary Deferment or incentive programs that offer incentives to discontinue irrigation use on a temporary basis.

**Appendix J**  
**SPNRD Water Acquisitions and Water Banking Activities Through 2014**  
**Retired Acres and Other Stream Flow Accretion Activities**

Landowner	Decertified Acres	Stream Depletion (%)	Acre Feet Accrued	Township	Range	Section	Date Retired	County	Subarea	Appropriation
Terrell Wiekhorst	43.1	18	4.6	14	52	5	9/6/2007	Cheyenne	ORBB	OA
Cliff Farms Inc.	50	32	12.2	14	52	3	9/17/2007	Cheyenne	ORBB	OA
Robert & Connie Runge	75.2	7	2.7	13	51	10	9/27/2007	Cheyenne	SIDCO	OA
Marleen E. Evans Et al	237.8	57	118.9	13	50	4	10/22/2007	Cheyenne	SIDCO	OA
Marleen E. Evans Et al	23.8	71	26.7	14	50	33	10/22/2007	Cheyenne	BBSID	OA
Fornstrom Farms LLC	109.9	23	14.1	14	59	12	11/1/2007	Kimball	PBOR	OA
Dale Dedic	29.8	25	6.2	14	52	4	12/4/2007	Cheyenne	ORBB	OA
Elizabeth Burbach	18.3	25	3.8	15	55	20	12/5/2007	Kimball	ORBB	OA
Peetz Land & Cattle Co	22.9	31	4.7	14	49	35	3/14/2008	Cheyenne	SIDCO	OA
B5 Farms LLC	10.1	78	4.9	12	45	13	4/9/2008	Deuel	SIDCO	OA
Paul & Frances Fornander	13.3	72	14.5	13	45	22	7/1/2008	Deuel	SIDCO	OA
Harvey Jung	8.7	7	1	14	53	2	7/10/2008	Cheyenne	ORBB	OA
Robert Kurz	271.5	57	88.3	13	50	4	10/23/2008	Cheyenne	SIDCO	OA
Venture Development Group Inc.	66	66	32.4*	14	49	32	7/14/2009	Cheyenne	BBSID	OA
Alan Adamson	62.6	70	63	15	57	31	9/22/2009	Kimball	PBOR	OA
Sharon A, James C. & Donna Johnson	5.6	10	0.44	15	53	34	7/1/2010	Kimball	ORBB	OA
Raymond Kuehn	83.2	73.5	49.2	14	51	12	7/1/2010	Cheyenne	BBSID	OA
Raymond Kuehn	42.3	68	23.1	14	51	13	7/1/2010	Cheyenne	BBSID	OA
Scott & Susan Lockwood	43.9	92.5	32	15	57	36	9/1/2010	Kimball	PBOR	OA
Don & Janelle Frerichs	59.6	75	30.8	14	48	27	9/22/2011	Cheyenne	SIDCO	Over
Barton Terman	99	10	14.5	14	52	34	12/28/2011	Cheyenne	BBSID	Over
The Ranch at Sidney LLC	35.1	74	28.5	14	49	33	4/8/2014	Cheyenne	SIDCO	OA

Total Acre Feet Accrued = 580

Total Number of Acres Decertified = 1,412

Average Stream Depletion = 47%

Average \$/AF Accrued (Federal dollars plus SPNRD dollars): \$2,930

Average \$/Acre Retired (Federal dollars plus SPNRD dollars): \$581