

Order No. 28

Upper Republican Natural Resources District

In the Matter of the
Upper Republican Natural Resources
District Integrated Management Plan.

Order
Adopting Integrated Management Plan and
Associated Ground Water Controls

This matter came before the Upper Republican NRD Board of Directors for consideration pursuant to Nebraska Revised Statutes Sec. 46-701 to 46-753 (Reissue 2004), which require the affected natural resources district and the Department to jointly develop an integrated management plan for a fully appropriated river basin, subbasin, or reach, and associated controls.

The Board of Directors Find:

1. Chapter 46, Reissue Revised Statutes of Nebraska, Article 7, the Ground Water Management and Protection Act, provides the authority for the designation of a Ground Water Management Area and the adoption of rules and regulations to administer that area. It also provides for the amendment of existing rules.
2. The Ground Water Management and Protection Act provides the authority for the joint adoption, by a natural resources district and the Nebraska Department of Natural Resources, of an Integrated Management Plan in a fully appropriated river basin, sub basin or reach.
3. On September 2, 2003, the Upper Republican Natural Resources District (URNRD) adopted Order Number 27, the purpose of which was to indicate the district's intent to proceed with development of a Joint Action Plan pursuant to Neb. Rev. Stat. previous section 46-656.28.
4. On July 16, 2004, pursuant to sections Neb. Rev. Stat. sections 46-714 and 46-720, the Department of Natural Resources (DNR) provided notice of determination that the Upper Republican Natural Resources District, in its entirety, is fully appropriated.
5. Pursuant to Neb. Rev. Stat. sections 46-715 and 46-720, the URNRD and DNR proceeded thereafter to jointly develop an integrated management plan rather than a joint action plan.
6. The consultations required by Neb. Rev. Stat. section 46-717(2) were conducted by URNRD and DNR as follows:
 - (a) the irrigation districts in the URNRD were consulted through their membership in the Nebraska Republican River Management Districts Association;
 - (b) reclamation districts, public power and irrigation districts, mutual irrigation companies, canal companies, municipalities, and surface water appropriators that rely on water from within the district and other stakeholders and water users were consulted at a Stakeholder Meeting March 1, 2005 as well as at numerous regular and special public meetings;

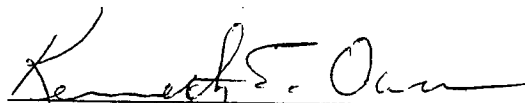
7. The URNRD also held 3 informational meetings in June of 2004 to solicit public comments on the need and method of implementing rules for the purposes of relating to use of ground water within the URNRD.
8. On March 3, 2005 and in accordance with Neb. Rev. Stat. section 46-717(1), the URNRD adopted rules and regulations specifying the types of scientific data and other information to be considered in developing the Plan, which rules and regulations are similar to the rules and regulations adopted by the DNR.
9. In accordance with Neb. Rev. Stat. section 46-718, the DNR and the URNRD agreed on: (a) goals and objectives of the Plan; (b) the geographic area to be subject to controls; (c) the surface water controls, ground water controls and incentive programs that are proposed for adoption and implementation in the Plan for the URNRD. The DNR and URNRD determined that adoption of the Plan should be considered in accordance with Neb. Rev. Stat. section 46-718.
10. Notice of a March 3, 2005 Public Hearing on the proposed Integrated Management Plan was published in accordance with Neb. Rev. Stat. sections 46-718 and 46-743 in the following newspapers in the URNRD:
 - (a) Benkelman Post
 - (b) Imperial Republican
 - (c) Wauneta Breeze
 - (d) Grant Tribuneand such notice was posted at all NRD offices within the District. Copies of the proposed rules and regulations were also made available from the Upper Republican NRD offices at the time of publication of the newspaper notices.
14. A public hearing was held in accordance with Neb. Rev. Stat. sections 46-718 and 46-743 on March 3, 2005 as advertised. All parties present were given the opportunity to testify.
15. Persons wishing to provide written testimony were given until 4 P.M. on March 10, 2005 to present that testimony. Copies of written testimony were provided to the Board of Directors and to DNR for their consideration.
16. Notice of an April 28, 2005 Public Hearing on the proposed Integrated Management Plan was published in accordance with Neb. Rev. Stat. sections 46-718 and 46-743 in the following newspapers in the URNRD:
 - (a) Benkelman Post
 - (b) Imperial Republican
 - (c) Wauneta Breeze
 - (d) Grant Tribuneand such notice was posted at all NRD offices within the District. Copies of the proposed rules and regulations were also made available from the Upper Republican NRD offices at the time of publication of the newspaper notices.
17. A public hearing was held in accordance with Neb. Rev. Stat. sections 46-718 and 46-743 on April 28, 2005 as advertised. All parties present were given the opportunity to testify.
18. Persons wishing to provide written testimony were given until 4 P.M. on April 29, 2005 to present that testimony. Copies of written testimony were provided to the Board of Directors and to DNR for their consideration.

19. The board considered all testimony presented at the public hearing or in writing on or before 4 P.M, April 29, 2005.

BY VIRTUE OF THE AUTHORITY VESTED IN THE UPPER REPUBLICAN NATURAL RESOURCES DISTRICT BOARD OF DIRECTORS BY REISSUE REVISED STATUTES OF NEBRASKA, SECTIONS 46-701 TO 46-753, IT IS HEREBY ORDERED:

1. The Integrated Management Plan, attached hereto is hereby adopted, including the ground water related controls, rules, and regulations included within the Integrated Management Plan labeled as Order 28, and the District Technical Manual (TM-28) and shall be implemented by the URNRD in accordance with Neb. Rev. Stat. section 46-739 and applicable law.
2. A subarea of the management area designated on August 1, 1977 is hereby designated for purposes of implementing the Integrated Management Plan. The geographic and stratigraphic boundaries of the subarea coincide with the existing geographic and stratigraphic boundaries of the existing management area designated on August 1, 1977 (such subarea for integrated management will be referred to as a "management area"). The geographic boundary of the management area is the boundary of the Upper Republican Natural Resources District. The stratigraphic boundary of the management area is from the land surface to the base of the underlying water bearing material.
3. The rules and regulations of the GROUND WATER MANAGEMENT AREA, EFFECTIVE September 1, 2004 are hereby replaced with the ground water rules and regulations within the Integrated Management Plan Attached hereto.
4. Ordered this the 3rd day of May, 2005 this order and the Integrated Management Plan attached hereto, including the ground water related controls contained therein, shall become effective June 2, 2005.


Greg Pelster, Chairman


Kenneth E. Owens, Secretary

INTEGRATED MANAGEMENT PLAN
Jointly Developed by the
DEPARTMENT OF NATURAL RESOURCES
and the
UPPER REPUBLICAN NATURAL RESOURCES DISTRICT

AUTHORITY

This Integrated Management Plan (IMP) was prepared by the Board of Directors of the Upper Republican Natural Resources District (URNRD) and the Nebraska Department of Natural Resources (NDNR) in accordance with the Nebraska Ground Water Management and Protection Act, Neb. Rev. Stat. §§ 46-701 to 46-753 (Reissue 2004).

BACKGROUND

Commencing in 1978, the URNRD has adopted and enforced rules and regulations for the purpose of managing the ground water resources within the URNRD. On April 11, 2003, effective May 8, 2003, the URNRD, pursuant to applicable statutory rulemaking procedures and Neb. Rev. Stat. § 46-656.25 (Reissue 1998), adopted the *State of Nebraska Upper Republican Natural Resources District Amendments to Rules and Regulations for Ground Water Control – Order No. 26* and the *Upper Republican Natural Resources District Technical Manual of Policies and Procedures TM-26* (the “URNRD Rules” or “the Rules”). In the regular meeting, on July 6, 2004, the URNRD voted to extend Order No. 26 until September 1, 2005. Rule 9A of the Rules provides for a basic allocation of ground water to certified irrigated acres within the URNRD of 72.5 acre-inches for the five (5) year period between January 1, 2003 and December 31, 2007, an annualized allocation of 14.5 acre-inches. Since their adoption, the Rules have prohibited additional allocations for ground water use and additional well permits, except under limited circumstances. In addition, among other things, the Rules continued and recodified the URNRD’s practice of allowing ground water users to carry forward the unused portion of their allocation, together with any remaining unused portions of allocations from previous years, into succeeding allocation periods and permitted the URNRD to approve pooling contracts, both in accordance with the URNRD Rules.

In 1943 the States of Colorado, Kansas and Nebraska entered into the Republican River Compact (the “Compact”) with the approval of the United States Congress. The Compact provides for the allocation of the “virgin water supply” of the Republican River Basin (the “Basin”) between the three States. Following several years of dispute about Nebraska’s consumptive use of water within the Basin, Kansas filed an original action in the United States Supreme Court against the States of Nebraska and Colorado in 1998, seeking, among other things, to include ground water in the calculation of the virgin water supply and consumptive use. The United States Supreme Court appointed a Special Master who recommended that the depletions to stream flow from the use of ground water must be included in the virgin water supply and be part of the calculation of each State’s beneficial consumptive use. The United States Supreme Court adopted the Special Master’s recommendation. Subsequent to this determination, the States entered into a Settlement Agreement resolving the remaining issues in

the case. The Settlement Agreement was approved by the United States Supreme Court on May 19, 2003.

Both prior and subsequent to the approval of the Settlement Agreement, the NDNR conducted and participated in several meetings with the URNRD, including several public meetings. During the course of those meetings the NDNR explained, in order for the State of Nebraska to achieve and maintain compliance with the terms of the Settlement Agreement, it would be necessary to (1) continue the moratorium on new surface water appropriations and new ground water wells, (2) reduce all ground water pumpage by five (5) percent from historic levels across the entire Basin and (3) further reduce ground water pumping needed to comply with the Compact in water short years, to be accomplished to the extent possible through the use of incentive programs to reduce consumptive use of water. Ground water within the Basin is regulated by four Natural Resource Districts: the URNRD, the Middle Republican Natural Resources District (the "Middle"), the Lower Republican Natural Resources District (the "Lower") and the Tri-Basin Natural Resources District (the "Tri-Basin") (collectively hereinafter the "Districts"). Similar discussions were held between the NDNR and each of the Districts regarding the need (1) to accurately measure actual ground water pumpage and surface water diversions throughout the Basin and within each District, (2) for the Tri-Basin to maintain, at sufficient levels to offset depletions to the Republican River caused by ground water pumping within the Tri-Basin, the Compact credit that Nebraska receives because of discharges from the "ground water mound" to the surface water supplies in the Basin; and, 3) for each of the Districts other than the Tri-Basin to reduce its ground water pumping by 5%, based upon their 1998-2002 baseline pumping figures, as defined below.

Since 1978, with adoption of its Order #1, the URNRD has required the metering, data collection and reporting of ground water use, resulting in actual pumpage and use data, and has imposed allocations and regulation on ground water users within the URNRD, while the use of wells in the Middle and Lower were neither reported nor regulated during the same period. In order to estimate pumping in the Middle and Lower, other methods based on hours of operation using electrical power information and individual pumping rates were used. The NDNR has determined the following pumping volumes for the period 1998-2002: 531,763 acre-feet for the URNRD, 309,479 acre-feet for the Middle and 242,289 acre-feet for the Lower. These pumping volumes are used throughout this IMP and are referenced as the "1998-2002 baseline pumping figures." NDNR, through the use of the Republican River Compact Administration Ground Water Model, has also determined each District's depletions to stream flow for the period 1998-2002 ("1998-2002 baseline depletion figures"): 74,161 acre-feet for the URNRD, 52,168 acre-feet for the Middle and 43,954 acre-feet for the Lower. Those depletion numbers have resulted in the following depletion proportions: 44% for the URNRD, 30% for the Middle and 26% for the Lower. These depletion proportions are used throughout this IMP and are referenced as the "1998-2002 baseline depletion proportions."

The URNRD and the NDNR wish to adopt and implement an IMP for the regulation of water resources within the District as required by the laws of the State of Nebraska. The NDNR has required that the IMP for the District include a five (5) percent reduction in the URNRD's ground water usage. Based upon its calculations, the NDNR believes that a reduction from an annual allocation of 14.5 acre-inches to 13.5 acre-inches will likely achieve the estimated 5% reduction in the URNRD's ground water usage. The URNRD will assist the State of Nebraska in

meeting the obligations under the Settlement Agreement by adopting revised rules to implement the NDNR's suggested reductions ("URNRD Revised Rules"), so long as each of the Districts is treated equivalently and the use of water by each District is within the allocations distributed to each District based on its proportional share of the 1998-2002 baseline pumping and 1998-2002 depletion figures.

GOALS AND OBJECTIVES

Pursuant to Neb. Rev. Stat. § 46-715 (Reissue 2004), the goals and objectives of this IMP must have as a purpose "sustaining a balance between water uses and water supplies so that the economic viability, social and environmental health, safety, and welfare of the river basin ... can be achieved and maintained for both the near term and the long term." The following goals and objectives are adopted by the URNRD and the NDNR to achieve that purpose:

Goals:

1. To assist the State of Nebraska, in cooperation with the other Districts, in maintaining compliance with the Compact as adopted in 1943 and as implemented in accordance with the Settlement Agreement approved by the United States Supreme Court on May 19, 2003;
2. To ensure that ground water and surface water users within the URNRD assume their share, but only their share of the responsibility to maintain compliance with the Compact; and
3. To provide that the URNRD's share of that responsibility be distributed within the URNRD in an equitable manner and to minimize, to the extent possible, adverse economic, social and environmental consequences.

Objectives:

1. With limited exceptions, prevent the initiation of new or expanded uses of water that increase Nebraska's computed beneficial consumptive use of water within the URNRD, as required for Compact compliance;
2. Ensure administration of surface water appropriations in the Basin is in accordance with the Compact and in full compliance with Nebraska law;
3. Reduce existing ground water use within the URNRD by five (5) percent from the 1998-2002 baseline pumping figures and from the 1998-2002 baseline depletion figures, as computed through use of the Republican River Compact Administration Ground Water Model;
4. After taking into account any reduction in beneficial consumptive use achieved through basin-wide incentive programs, make such additional reductions in ground
or ↑ in supply from augmentation

depletions to streamflow
water use in water short years as are necessary to achieve a reduction in beneficial consumptive use in the URNRD in an amount proportionate to the total reduction in consumptive use required by the Settlement Agreement in Nebraska above Guide Rock in such years;

- depletion to streamflow*
5. Cause the reductions in ~~water use~~ required for Compact compliance to be achieved through a combination of regulatory and incentive programs designed to reduce beneficial consumptive use, relying on incentive programs available to as many of the URNRD water users as possible; and
 6. For the URNRD and the NDNR to investigate and explore methods to manage the impact of vegetative growth on stream flow.

MAP - see map 1.

The area subject to this IMP is the geographic area within the boundaries of the URNRD.

GROUND WATER REGULATION

The authority for the ground water component of this IMP is Neb. Rev. Stat. §§ 46-715 and 46-739 (Reissue 2004). This "Ground Water Regulation" section includes the URNRD's rules and regulations, and items one through seven (1-7) below to meet and maintain the District's proportionate share of duties and responsibilities in the implementation of the Republican River Compact Settlement Agreement, as agreed upon by the URNRD and the NDNR.

1. URNRD reductions.

- A. Reduction in baseline pumping - The reductions provided in the URNRD Revised Rules for ground water pumping from the current annualized 14.5 acre-inches to 13.5 acre-inches are based upon the NDNR's calculation that such reductions are expected to provide an overall five (5) percent reduction in average annual ground water pumping and resulting stream flow depletions by the URNRD from the 1998-2002 baseline pumping and depletion figures. The NDNR has made similar calculations to predict that the IMPs adopted by the other Districts and the NDNR will also achieve a five (5) percent reduction in average annual ground water pumping and stream flow depletions within each of those Districts.
- B. Water short year pumping reductions - In addition to the five (5) percent reduction in overall baseline pumping, the URNRD will adopt rules and regulations to permit it to further reduce pumping in water short years when necessary to meet its proportionate share of Nebraska's water short year compliance under the Compact. To the extent possible, basin-wide incentive programs will be used to reduce consumptive use in water short years. In the event that such incentive programs are not adequate, each District shall be responsible for reducing its depletions above Guide Rock to its share

of Nebraska's allowable depletion in proportion to the 1998-2002 baseline depletion figures.

2. If it is determined by the NDNR, after consultation with the URNRD, that all of the Districts are in compliance with their IMPs, that each of the IMPs is adequate to achieve that District's proportionate share of the reductions required by the NDNR, but that Nebraska is nonetheless out of compliance with the Compact, any additional required reductions will be established in proportion to each District's 1998-2002 baseline pumping figures and 1998-2002 baseline depletion proportions for both the five-year running average and for water short year compliance. Each District shall be responsible for reducing its depletions to the share of Nebraska's allowable depletion in those proportions.
3. The URNRD and the NDNR recognize that the required reductions in water consumption could be accomplished by means other than those adopted in this IMP. The IMP and associated Rules may need to be amended in the future to implement any such revisions.
4. At various times in the future, additional information may become available to the URNRD and the NDNR. As a result of this information, it may be determined that either less or more than the five (5) percent reduction in ground water pumping in combination with additional water short year reductions is required for Nebraska to meet its obligations under the Compact. In the event it is determined that a greater than five (5) percent reduction is necessary to achieve Nebraska's compliance, or that a lesser reduction is needed to meet URNRD's proportionate share of Nebraska's obligation, the NDNR and the URNRD will amend the IMP and its Rules accordingly.
5. Accounting of credits for retired acres – Any water savings generated through conservation programs, including acreage retirement or other conservation incentive programs undertaken through programs available throughout the Republican River Basin with the use of funds distributed by the State of Nebraska or the United States Government will be accounted as credits to the entire Republican River Basin and not to any District, regardless of the situs of the acreage included in the program or of the location of the effect of such water savings on the river system. Any water savings resulting from any such basin-wide programs shall not be considered in the calculation of any District's five (5) percent reduction from the 1998-2002 baseline pumping figures. However, should any District establish, fund, and implement its own such conservation program, available only for acreage within such District, the accounting of credit for the resulting water savings shall be given exclusively to that District.
6. The URNRD and the NDNR will make all documents, reports, records, computer runs or other calculations or material necessary to determine compliance with the Compact available to each other, regardless of whether such documents are available under the Nebraska Public Records Act or otherwise, unless such materials are identified as confidential under Nebraska statutes or by a ruling of a court of competent jurisdiction. Specifically, and without limitation, the URNRD agrees to continue to meter, record and provide to the NDNR its ground water usage records; the NDNR agrees to provide to the URNRD all reports and records of the other Districts necessary to determine their

compliance with reductions in accordance with the formula described above, as well as all documentation and reports utilized by the NDNR to determine the Basin's virgin water supplies and Nebraska's compliance with the Compact. In the event any materials are withheld by either NDNR or URNRD under a claim of statutory confidentiality, the party withholding such materials shall describe the contents of the materials and reasons for the denial in accordance with Neb. Rev. Stat. § 84-712.04 (Reissue 1999).

7. To accomplish the goals and objectives of this IMP, neither the URNRD nor the NDNR will require the IMP to be amended for the purpose of changing the responsibility of water users within the URNRD based on the failure of the other Districts to adopt, implement or enforce IMPs adequate to meet their proportionate share of the responsibility to achieve and maintain Nebraska's compliance with the Compact.

STATE OF NEBRASKA
UPPER REPUBLICAN NATURAL RESOURCES DISTRICT
AMENDMENTS TO RULES AND REGULATIONS
GROUND WATER CONTROL -ORDER NO. 28

Pursuant to the Nebraska Ground Water Management and Protection Act, Order No.28, and Technical Manual TM 28 adopted May 3, 2005, are amended as follows:

Rule 1. DEFINITIONS

All words, terms, and phrases used herein, unless specifically defined herein, shall be given their common, every day meaning and usage. The following terms are specifically defined:

- 1.01 **Allocated Acres** shall mean the specific number of acres that have been certified by the Board as eligible to be granted an allocation of ground water.
- 1.02 **Allocation** shall mean the total amount of ground water granted by the Board to a ground water user within the allocation period. For purposes of certified irrigated acres within a certified irrigated tract, this amount includes the base allocation and the carryforward from prior allocation periods.
- 1.03 **Allocation Period** shall mean the number of years over which the allocation can be used.
- 1.04 **Annualized Allocation** shall mean an amount of ground water equal to the base allocation divided by the number of years in the allocation period.
- 1.05 **Base Allocation** shall mean the amount of ground water granted by the Board to a certified irrigated acre within a certified irrigated tract for an allocation period.
- 1.06 **Best Management Practices** shall mean activities, maintenance procedures, and other management practices utilized to prevent or reduce present and future contamination of ground water, which may include irrigation scheduling, proper rate and timing of fertilizer and pesticide application and other fertilizer and pesticide management programs.
- 1.07 **Board of Directors or Board** shall mean the elected Board of Directors of the Upper Republican Natural Resources District.
- 1.08 **Carryforward** shall mean any unused portion of an allocation that can be carried forward to the subsequent allocation period.
- 1.09 **Certified Irrigated Acre** shall mean any acre of ground upon which ground water is being applied for irrigation purposes, regardless of the source of the ground water, that has an allocation granted and that was certified as such by the Board on or before the 31st day of March, 1997. (See also Irrigated Acre)
- 1.10 **Certified Irrigated Tract** shall mean an irrigated tract, not exceeding six hundred and forty (640) contiguous acres, consisting of certified irrigated acres. (See also Irrigated Tract)
- 1.11 **Certified Laboratory** shall mean any laboratory within or outside the State of Nebraska certified and approved by the Nebraska Department of Environmental Quality.

- 1.12 **Chemical** shall mean any fertilizer, fungicide, herbicide, or pesticide mixed with the water supply for application through chemigation.
- 1.13 **Chemigation** shall mean any process whereby chemicals are applied to land or crops in or with water through an on farm irrigation distribution system.
- 1.14 **Consumptive Use**, for purposes of the water use activities described in these rules, shall mean the amount of water that is consumed under appropriate and reasonably efficient practices to accomplish without waste the purposes for which the appropriation or other legally permitted use is lawfully made.
- 1.15 **Contamination or Contamination of Ground Water** shall mean nitrate-nitrogen or other material that enters the ground water due to the action of any person and causes degradation of the quality of ground water sufficient to make such ground water unsuitable for present or reasonably foreseeable beneficial uses.
- 1.16 **District** shall mean the Upper Republican Natural Resources District, which encompasses Chase, Dundy, and Perkins Counties, in the State of Nebraska.
- 1.17 **Fertilizer** shall mean any formulation or product used as a plant nutrient and/or intended to promote plant growth distributed on lands in the District, containing one or more plant nutrients recognized by the Association of American Plant Food Control Officials in its official publications.
- 1.18 **Floating Township** shall mean a set of thirty-six (36) sections lying in a contiguous block, such that the area is six (6) sections east to west and six (6) sections north to south, designated by the section that forms the northwest corner of the floating township.
- 1.19 **Flowmeter** shall mean a measuring device of the type and design which shall meet the standards and specifications for installation, operation, and maintenance as established by the District. Every flowmeter shall be a mechanical or sensor device which measures and totalizes the amount of ground water withdrawn.
- 1.20 **Ground Water Irrigation Runoff** shall mean ground water used for irrigation purposes which escapes from land owned, leased, or otherwise under the control of a ground water user. Ground water that becomes commingled with surface water runoff shall be treated as irrigation runoff; except that ground water irrigation runoff, whether commingled with surface water or not, which reaches a stream becomes surface water and is not subject to these rules and regulations.
- 1.21 **Ground Water Quality Controls** shall mean the rules and regulations proposed and adopted for ground water quality management based on the three (3) phase program defined in Rules 1.33, 1.34 and 1.35.
- 1.22 **Ground Water User** shall mean any person who extracts, withdraws or confines ground water for any use by any person. The term ground water user shall include the operator.
- 1.23 **Historic Consumptive Use** shall mean that amount of water that has previously been consumed under appropriate and reasonably efficient practices to accomplish without waste the purposes for which the appropriation or other legally permitted use was lawfully made.
- 1.24 **Improper Ground Water Irrigation Runoff** shall mean the occurrence of ground water irrigation runoff which causes or contributes to the: (a) accumulation of water upon or beneath the

surface of the lands of any person to their detriment, damage, or inconvenience; (b) deterioration of water quality by depositing sediment and/or associated chemicals in surface water within the Management Area; and/or (c) waste of ground water. Improper ground water irrigation runoff is subject to the General Enforcement Provisions of these rules and regulations.

- 1.25 **Installer** shall mean the person that installs meters on the ground water user's irrigation equipment.
- 1.26 **Irrigated Acre** shall mean any acre with a demonstrable or proven history of having been irrigated on or before May 8, 2003.
- 1.27 **Irrigated Tract** shall mean a defined area of land consisting of irrigated acres.
- 1.28 **Management Area** shall mean all of Perkins, Chase and Dundy Counties.
- 1.29 **Manufacturer** shall mean the person that produces meters for the supplier or dealer.
- 1.30 **Meter** shall mean a mechanical or sensor device that measures and totalizes the amount of water flowing from a well.
- 1.31 **Owner** shall mean any person that has an ownership interest in a tract.
- 1.32 **Person** shall mean a natural person, partnership, limited liability company, association, corporation, irrigation district, municipality, agency or political subdivision of the State or department, agency, or bureau of the United States. The male pronoun shall include the female.
- 1.33 **Phase I Area** shall mean an area within the District in which levels of nitrate-nitrogen contamination, or any contaminant harmful to health or the environment, are zero (0) to forty (40) percent of the allowable level of that contaminant, as established by the Nebraska Department of Environmental Quality. Currently, the entire Upper Republican Natural Resources District is designated a Phase I area.
- 1.34 **Phase II Area** shall mean an area within the District designated as a Phase II area by the Board due to levels of nitrate-nitrogen contamination, or any contaminant harmful to health or the environment, of over forty (40) percent, but less than sixty (60) percent, of the allowable level of that contaminant, as established by the Nebraska Department of Environmental Quality. Phase II areas shall be designated only after dissemination to the public of the proposed boundaries of such areas and the rules and regulations pertaining thereto, and after holding one or more public information meeting(s), followed by a public hearing. At the conclusion of such hearing, the Board may designate Phase II areas of not less than six (6) square miles and rules and regulations pertaining to management of ground water quality in such areas.
- 1.35 **Phase III Area** shall mean an area within the District designated as a Phase III area by the Board due to levels of nitrate-nitrogen contamination, or any contaminant harmful to health or the environment, of sixty (60) percent or more of the allowable level of that contaminant, as established by the Nebraska Department of Environmental Quality. Phase III areas shall be designated only after dissemination to the public of the proposed boundaries of such areas and the rules and regulations pertaining thereto, and after holding one or more public information meeting(s), followed by a public hearing. At the conclusion of such hearing, the Board may designate Phase III areas of not less than six (6) square miles and rules and regulations pertaining to the management of ground water quality in such areas.

- 1.36 **Pipe** shall mean any device capable of transporting water.
- 1.37 **Point Source** shall mean any discernible, confined and discrete conveyance, including, but not limited to, any pipe, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, vessel, other floating craft, or other conveyance over which the Department of Environmental Quality has regulatory authority and from which a substance which can cause or contribute to contamination of ground water is being or may be discharged.
- 1.38 **Pooling** shall mean any contract approved by the Board in which ground water allocations are combined.
- 1.39 **Rotation** shall mean a recurring series of the use and non-use of an irrigation well on an hourly, daily, weekly, monthly, or annual basis.
- 1.40 **State** shall mean the State of Nebraska.
- 1.41 **Subirrigation** or **Subirrigated Land** shall mean the occurrence of a ground water table within the root zone of agricultural vegetation, ten (10) feet or less below the surface of the ground.
- 1.42 **Supplier** or **Dealer** shall mean the person that sells or provides meters to an installer, ground water user or the District.
- 1.43 **Technical Manual** shall mean the publication of the District attached as Appendix 1, containing technical and other information, the contents of which are incorporated into these rules by this reference.
- 1.44 **Transfer** shall mean any arrangement approved by the Board in which the point of withdrawal, the point of use, or the type of use of an allocation is altered.
- 1.45 **Transport** shall mean the actual movement of water from one point to another by physical and/or mechanical means.
- 1.46 **Violation** shall mean the disregard of or noncompliance with any cease and desist order issued by the District pursuant to these rules and regulations, the Ground Water Management and Protection Act or any other orders, controls, rules, or regulations adopted by the District. Any person who commits a violation shall be subject to any enforcement provisions and sanctions provided by law and to the controls, rules, regulations and remedies enacted by the District, including, but not limited to the reduction of any allocation or of irrigated acres certified previously by the District.
- 1.47 **Water Short Year** shall mean a year in which the projected or actual irrigation supply is less than 119,000 acre-feet of storage available for use from Harlan County Lake, as determined by the United States Bureau of Reclamation for the Republican River Compact Administration.
- 1.48 **Well** shall mean any water well, as defined in Neb. Rev. Stat. §§ 46-601.01, 46-635.01, 46-1204.01, 46-1204.02, and 46-1212 (Reissue 2004). All wells shall be registered as provided by Nebraska law. For the purposes of these rules and regulations, wells are further defined and classified as follows:
- 1.48.01 **Domestic Wells** are wells used by a person or by a family unit or household for normal household uses and for the irrigation of lands not exceeding two (2) acres in area for the growing of gardens, orchards, and lawns, and keeping domestic animals. Such wells are exempt from application of these rules.

- 1.48.02 Range Livestock Wells** are wells which are used for the watering of range livestock and other uses, other than for irrigation purposes, directly related to the operation of a pasture or range. Such wells are exempt from allocation restrictions in these rules except for Rule 1.48.08.
- 1.48.03 Irrigation Wells** are wells that are used for the pumping of ground water to irrigated acres for the production of forage or crops. Such wells must have certified irrigated acres, and all water pumped by such wells must be measured with a flowmeter located in the District.
- 1.48.04 Commercial Livestock Wells** are wells used for the watering of livestock and other uses directly related to the operation of a feedlot or other confined livestock or dairy operation. Such wells must have an allocation, and all water pumped by such wells must be measured with a flowmeter located in the District.
- 1.48.05 Back-up Wells** are commercial livestock or industrial wells which operate only in emergencies when the primary well fails. Back-up wells shall not be operated simultaneously with the primary well. Any water pumped from back-up wells shall be counted against the allocation for the well it backs up and must be measured with a flowmeter located in the District.
- 1.48.06 Industrial Wells** are wells used in manufacturing and commercial operations, and/or watering and maintenance of golf courses. Such wells must have an allocation, and all water pumped by such wells must be measured with a flowmeter located in the District.
- 1.48.07 Public Water System Wells** are wells used by villages, towns, cities or rural water districts for providing the public with water, as further defined in 179 Nebraska Administrative Code. Such wells must have an allocation and all water pumped by such wells must be measured with a flowmeter located in the District.
- 1.48.08 Commingled Wells** are water wells that are commingled, combined, clustered, or joined with another water well or wells or other water source after August 31, 1998. Such wells shall be considered one (1) water well and the combined pumping capacity shall be used as the rated capacity. Such wells, except those used for range livestock purposes or those used for domestic purposes with a combined capacity of fifty (50) gallons per minute or less, must have an allocation, and all water pumped by such wells must be measured with a flowmeter located in the District.
- 1.48.09 Supplemental Well** is any well, the water from which is commingled with the water from any other well for irrigation purposes.
- 1.48.10 Replacement Well** shall mean a water well which (i) replaces a previously abandoned water well within one (1) year of the last operation of the abandoned water well, or (ii) replaces a water well that will not be used after construction of the new water well and the original water well will be decommissioned within one (1) year of construction of the new water well. A replacement well is one that (i) is constructed to provide water to the same tract of land served by the water well being replaced, (ii) would not be used to provide water to a use not certified with the well being replaced and (iii) would not be used in such a way as to result in the consumption of more water than was historically consumed by the water well being replaced. A replacement well, as defined in Neb. Rev. Stat. § 46-602 (Reissue 2004) or as further defined in District Rules and Regulations, is subject to the same provisions as the water well it replaces.

- 1.48.11 **Abandoned Well** shall mean a well as defined by Neb. Rev. Stat. § 46-1204.01 (Reissue 2004).
- 1.48.12 **Inactive Status Well** shall mean a well as defined by Neb. Rev. Stat. § 46-1207.02 (Reissue 2004). The owner of any permitted well must notify the District and the Nebraska Department of Natural Resources when an active well is placed in inactive status.
- 1.48.13 **Monitoring Well** shall mean a well as defined by 178 NAC 12.002, Nebraska Health and Human Services System.
- 1.48.14 **Observation Well** shall mean a well as defined by 178 NAC 12.002, Nebraska Health and Human Services System.
- 1.48.15 **Illegal Well** shall mean a well as defined by Neb Rev. Stat. § 46-706(5) and 46-1207.01 (Reissue 2004).
- 1.49 **Well Permit** shall mean the written authorization, granted by the Board with conditions specified by the Board pursuant to these rules and regulations, for construction of a new well or a replacement well. All new and replacement wells, except domestic wells and range livestock wells designed and constructed to pump fifty gallons per minute or less, shall require a permit prior to construction.

Rule 2. FLOWMETERS

- 2.01 Each well requiring a permit shall be equipped with a flowmeter which shall be installed, operated, and maintained in accordance with the following standards and specifications:
 - 2.01.01 Meters installed under these specifications shall comply with the applicable provisions of the American National Standards Institute, American Water Works Association's standard number C704-70.
 - 2.01.02 Each meter shall be installed and calibrated to pipe size.
 - 2.01.03 Flowmeters shall be of the velocity propeller or sensor type, and made of noncorrosive materials.
 - 2.01.04 The meter registry shall have a visual volume recording totalizer, which shall record in acre-feet, acre-inches, or U.S. gallons.
 - 2.01.05 The meter registry shall be protected from the elements. Totalizers shall have sufficient capacity to record the quantity of water diverted from each well for a period of one (1) year. Totalizers shall be direct reading and the multiplier, by which the rate of flow can be determined by timing, shall be clearly indicated.
 - 2.01.06 The meter shall have a rated accuracy of plus or minus two (2) percent of actual flow within the range of flow for which the meter is designed. The meter shall be capable of accurately registering the expected operating range of discharge.
 - 2.01.07 The meter shall have a pressure rating to fit the application used within its designed pressure range.

- 2.01.08** The meter size, serial number and the direction of flow shall be clearly stamped on the body of the meter. The inside pipe diameter for which the meter has been calibrated shall be clearly shown on the meter to the nearest 0.001 of an inch.
- 2.01.09** The meter shall be installed in accordance with the manufacturer's specifications and in such manner that there will be a full pipe flow of water at all times while water is being measured.
- 2.01.10** The meter shall be placed in the pipe not less than five (5) pipe diameters downstream from any valve, elbow or other obstructions, which might create turbulent flow, or as recommended by the manufacturer. There shall also be at least one (1) pipe diameter of unobstructed flow on the downstream side of the meter.
- 2.01.11** The meter propeller shaft shall be positioned parallel to and aligned with the centerline of the pipe.
- 2.01.12** Meters should be kept clear of debris and other material which might impede operation.
- 2.02** When meters are removed for servicing or replacement, records of meter readings should be kept.
- 2.03** It shall be unlawful for any person to willfully injure, alter, remove, reset, adjust, manipulate, obstruct, or in any manner interfere with or tamper with any flowmeter within the Management Area for the purpose or with the intent of producing an incorrect, inaccurate or misleading measurement, or to cause, procure or direct any other person to do so.
- 2.04** The District staff shall periodically check flowmeters on a random basis for reading and proper operation. The District staff may seal all flowmeters within the Management Area. No seal shall be removed without prior approval of the District.
- 2.05** Any malfunctioning flowmeter must be reported to the District Office at Imperial, Nebraska, within twenty-four (24) hours after discovery. During the malfunctioning period, a substitute meter from the District, if available, shall be used to determine water pumpage. If no such meter is available, any reasonable method, as determined by the District, of determining water pumpage may be utilized.
- 2.06** The District may require any ground water user to provide information to enable the District staff to determine the amount of energy used to operate any well on which a meter is required. The ground water user shall provide such information, or the ground water user shall authorize the District staff to procure such information from the power provider. The District staff shall seek such information in the event a flowmeter is malfunctioning, or if either the owner or operator or the District staff has reason to believe the flowmeter reading is incorrect. If any power source on any well within the Management Area is equipped with an hour meter, the District may require the ground water user to provide appropriate readings from said hour meter.
- 2.07** Diversions from wells connected to serve multiple points of use shall not be made prior to the water passing through the meter for the individual wells. Wells with diversion points before the meter and connected to serve multiple points of use shall be modified no later than April 1, 2003 to comply with this rule.

Rule 3. IRRIGATED ACRES AND TRACTS

- 3.01 Every person shall annually report to the District the total number of acres, owned by them or under their control, irrigated in the District.
- 3.02 Certified irrigated tracts shall be identified by government survey descriptions. In all cases, the description of each ground water user's irrigated tract or tracts, as contained in any recorded deed or lease shall be definitive.
- 3.03 Any replacement well shall be deemed to irrigate the same number of certified acres as the well it replaced.
- 3.04 No additional acres shall be irrigated without prior approval by the District. The District shall consider the District's proportional responsibility for maintaining Nebraska's compliance with the Republican River Compact and any impairment to other water users prior to granting any such approval.

Rule 4. WELL SPACING

- 4.01 Spacing of all wells for which District permits are required, regardless of ownership and classification, must be approved by the Board prior to drilling the well. New wells must comply with Neb. Rev. Stat. §§ 46-609 and 46-651 (Reissue 2004) in addition to the District's spacing requirements below:
 - 4.01.01 New Wells - Any irrigation well, commercial livestock well, industrial well, or public water system well drilled after August 31, 2000, must be at least 1,320 feet from any domestic well or range livestock well, and 5,280 feet from any other well not belonging to the owner or controller of the land upon which the new well is established.
 - 4.01.02 Replacement Wells - Except as provided in 4.01.02(a), any replacement irrigation well, replacement commercial livestock well, replacement industrial well, or replacement public water system well drilled after August 31, 2005, must be at least 1,320 feet from any domestic well or range livestock well and 5,280 feet from any irrigation well, commercial livestock well, industrial well or public water system well not belonging to the owner or controller of the land upon which the replacement well is constructed.
 - (a) If the well to be replaced is within 1,320 feet of a domestic well or range livestock well, or within 5,280 feet of any irrigation well, commercial livestock well, industrial well or public water system well not belonging to the owner or controller of the land upon which the replacement well is to be established, the replacement well must be drilled within 150 feet of the well it replaces.

Rule 5. INACTIVE STATUS WELLS

- 5.01 The Board shall maintain a record of all wells registered as inactive status by the Nebraska Department of Natural Resources.
 - 5.01.01 All wells placed into an inactive status shall conform with all relevant State statutes, including those specifications defined in Neb. Rev. Stat. § 46-1207.02 (Reissue 2004) as follows:

- (a) The water well does not allow impairment of the water quality in the well or of the ground water encountered by the well;
 - (b) The top of the water well or water well casing has a water-tight, welded or threaded cover or some other water-tight means to prevent its removal without the use of equipment or tools to prevent unauthorized access, to prevent a safety hazard to humans and animals, and to prevent illegal disposal of waste or contaminants into the water well; and
 - (c) The water well shall be marked so as to be easily visible and located and labeled or otherwise marked so as to be easily identified as a water well and the area surrounding the water well shall be kept clear of brush, debris, and waste material.
- 5.01.02** The well shall be marked in a permanent form with the Nebraska Department of Natural Resources registration number as a clearly legible engraving, raised metal embossing of the characters, or on a metal plate permanently welded, riveted or bolted to the casing.
- 5.01.03** Both the Nebraska Department of Natural Resources and the District must be notified within sixty (60) calendar days of the change to inactive condition and of any subsequent changes to the condition of the well.
- 5.01.04** Any well registered as inactive status shall:
- (a) Maintain the previously granted number of certified irrigated acres and certified irrigated tract associated with such well;
 - (b) Maintain the amount of allocation as it existed at the time the well was placed on inactive status;
 - (c) NOT accumulate any additional allocation while on inactive status; and
 - (d) When returned to active status, be provided an allocation consisting of the amount of carryforward at the time it was placed on inactive status, plus the annualized base allocation for each year remaining in the allocation period. While in an inactive status, the well shall not accrue any annualized allocation.

Rule 6. CONNECTING WELLS

- 6.01** No wells shall be connected for any purpose or use without prior approval of the District, except those used for range livestock purposes or those used for domestic purposes with a combined capacity of fifty (50) gallons per minute or less. In considering a request for such approval, the Board shall consider impairment of other water users, ownership, Nebraska Department of Natural Resources registration, the annual allowable withdrawal formula, and any other relevant information.
- 6.01.01** All wells proposed to be connected shall be legally registered with the Nebraska Department of Natural Resources, with ownership current prior to the submission of any request.
- 6.01.02** Plans to join wells will be evaluated using the annual allowable withdrawal formula, as defined in the District Technical Manual (Appendix 1), and other data, as available.

Rule 7. TRANSPORT OF WATER ACROSS NRD BOUNDARIES

- 7.01 Ground water transported from another natural resources district to this District, or from this District to one or more other natural resources districts, shall be subject to the Rules and Regulations of all involved natural resources districts.

Rule 8. ALLOCATIONS OF GROUND WATER

- 8.01 Commencing on January 1, 2005, each certified irrigated acre within a certified irrigated tract is hereby granted a base allocation of 40.5 acre-inches, an annualized allocation of 13.5 acre-inches, for the allocation period ending December 31, 2007, unless otherwise provided herein. The current allocation period commencing January 1, 2003 and scheduled to terminate December 31, 2007 shall be terminated on December 31, 2004 and the remaining three (3) years of allocation of 43.5 acre-inches shall be removed from remaining allocation.
- 8.02 Ground water users pumping less than the total of their base allocation and their carryforward from prior allocations may carryforward the unused balance to subsequent allocation periods at the expiration of the current allocation period.
- 8.02.01 If, at the termination of the allocation period, any ground water user has exceeded his base allocation and banked carryforward, his base allocation for the next allocation period shall be reduced by the amount by which the ground water user exceeded his base allocation.
- 8.02.02 Certified irrigated acres in any land or irrigation retirement program including, but not limited to Federal Conservation Reserve Program, EQIP, CREP, or other incentive programs shall not receive an allocation while enrolled. Certified irrigated acres being removed from any retirement program shall be granted a base allocation prorated to the years remaining in the current allocation period. In addition, upon removal from the land or irrigation retirement program, each certified irrigated acre shall receive the total of the carryforward accumulated at the time of enrollment in the program.
- 8.02.03 On or before March 1, 2006, the Board of Directors shall commence deliberations concerning ground water base allocations for the next allocation period, to start January 1, 2008. Such deliberations shall be completed before August 31, 2006, and a base allocation for the succeeding allocation period shall be established.
- 8.03 All industrial wells shall have an allocation prior to operation. The owner of each industrial well shall, on or before January 15 of each year, apply for an allocation for that calendar year on forms provided by the District.
- 8.04 Commercial livestock wells may be allocated an annual maximum of 22 acre-feet per 1000 animal units designated for an approved capacity.
- 8.05 Each municipality is hereby granted without further application, an annual allocation computed as designated in Rule 8.05.01.
- 8.05.01 An allocation in gallons equal to the number produced by multiplying the population of the municipality, as determined by the most recent Federal Census or any other Board approved population estimate by 91,250, and an additional allocation 125,000 gallons per non-agricultural acre of land within the municipality. Each municipality shall report the total number of non-agricultural acres within its limits to the Board at the time of any annexation or elimination of territory to or from its limits.

- 8.06 Allocations for any and all wells may be amended, reduced, increased, or made subject to limitations or conditions by the Board upon notice and hearing.
- 8.07 The District shall institute formal adjudicatory proceedings and initiate any action provided by law to prohibit further withdrawal of ground water in the event any ground water user shall exhaust or exceed his allocation prior to the termination of the applicable allocation period or shall in any other manner violate the amount, limitation, or any other conditions as established by these rules and regulations or by order of the District.

Rule 9. REPUBLICAN RIVER COMPACT COMPLIANCE

- 9.01 **Water Short Year Determination:** No later than the 1st day of October of each year, the Nebraska Department of Natural Resources shall inform the District of a potential designation of a water short year for the upcoming irrigation season. Upon receipt of such determination, the District shall provide notice of such designation to irrigators and all other interested parties, as provided by these rules and regulations and Nebraska law. The Board shall consider and adopt any additional action necessary to meet the District's proportional responsibility for maintaining Nebraska's compliance with the Republican River Compact.
- 9.02 Additional controls may consist of, but are not limited to incentive programs, regulations, management practices, and any other relevant practice deemed appropriate by the Board to achieve adequate administration.
- 9.02.01 Municipal and other public water system, industrial, and commercial livestock allocations shall be exempt from additional water short year controls.

Rule 10. POOLING

- 10.01 The Board may approve pooling of ground water allocations.
- 10.01.01 Pooling contracts approved prior to the adoption of these rules and regulations will remain in force, unless the owner requests the pool be dissolved, and shall be subject to the following stipulations:
- (a) A pooling contract shall not result in more ground water being withdrawn from the aquifer within a township or floating township than the ground water user has been allocated for certified irrigated acres in certified irrigated tracts within that township or floating township.
- 10.01.02 Pooling contracts approved after the adoption of these rules (Order 28) will remain in force, unless the owner requests the pool be dissolved, and shall be subject to the following stipulations:
- (a) A pooling contract shall not result in more ground water being withdrawn from the aquifer within a floating township than the ground water user has been allocated for certified irrigated acres in certified irrigated tracts within that floating township.
 - (b) A floating township shall include all certified irrigated tracts watered by wells located within the floating township, except those tracts included in another floating township in the case where floating townships overlap.

- (c) Certified irrigated tracts will not be eligible to be moved from one floating township to any other floating township within a pooling contract, except when the change is the result of adding or removing tracts from the contract due to change of ownership.
 - (d) The pooling contract application shall be denied or conditioned to the extent that it is necessary to (1) ensure the consistency of the contract with the purpose or purposes for which the Management Area was designated, (2) prevent adverse effects on other ground water users or on surface water appropriators, (3) meet the District's proportional responsibility for maintaining Nebraska's compliance with the Republican River Compact, and (4) otherwise protect the public interest and prevent detriment to the public welfare.
 - (e) The District shall review such pooling contract applications at the April Board meeting and shall approve, with or without conditions, or deny the pooling contract application within thirty (30) days of the April Board meeting. An incomplete pooling contract application shall be returned for correction. If correction is not made within sixty (60) days, the application shall be cancelled.
- 10.01.03** No new pooling contract shall be approved which contains any certified irrigated tract with no available allocation or carryforward.
 - 10.01.04** Pooling contracts between individuals, partnerships and corporations and other owners of certified irrigated tracts require the signature of the owner or a party with appropriate power of attorney, together with proof of ownership for each irrigated tract included in the pooling contract.
 - 10.01.05** Proof of ownership for each irrigated tract must be provided prior to termination of any pooling contract.
 - 10.01.06** New pooling contract applications or modifications to pooling contracts, must be submitted in writing, with all required signatures, to the District on or before March 31 of the year the proposed contract would commence and must be approved by the Board.
 - 10.01.07** Certified irrigated acres enrolled in any land or irrigation retirement program including, but not limited to Federal Conservation Reserve Program, EQIP, or CREP shall not be included in a pooling contract.
 - 10.01.08** A certified irrigated tract removed from enrollment in any land or irrigation retirement program described in Rule 10.01.07 may not be included in a pooling contract within five (5) years of the date said tract is removed from the program.
 - 10.01.09** If a change of ownership of any certified irrigated tract in a pooling contract occurs, a pool is dissolved, or a tract is removed from a pool the unused ground water allocation for the certified irrigated tracts shall remain with each tract. The Board may, upon the written request of the owner or owners of the tracts, remove the tract(s) from the pool at the average unused allocation, equalizing the change in unused allocation on the certified irrigated acres remaining in the pool.
 - 10.01.10** Purchased certified irrigated tracts will not be eligible to be pooled with any other certified irrigated tract or tracts for a period of three (3) irrigation seasons from the date of purchase.

Purchased tracts may continue to be pooled in the same pooling contract, if those tracts had originally been pooled together.

Rule 11. TRANSFERS

- 11.01** Board approval must be received prior to the transfer of all or a portion of any ground water allocation or acres to another tract or use.
- 11.02** No transfer may occur without the knowledge and consent of the owners of all lands involved, including any lands over which the ground water is transported.
- 11.03** Transfers shall be denied or conditioned to the extent that it is necessary to (1) ensure the consistency of the contract with the purpose or purposes for which the Management Area was designated, (2) prevent adverse effects on other ground water users or on surface water appropriators, (3) meet the District's proportional responsibility for Nebraska's compliance with the Republican River Compact, and (4) otherwise protect the public interest and prevent detriment to the public welfare.
- 11.04** In making its decision, the Board may use the following information obtained by application of the annual allowable withdrawal model, as described in Technical Manual 28 (Attachment 1). The Board may consider relevant information, including, but not limited to:
 - 11.04.01** The trend of change in the level of the aquifer over time from District records;
 - 11.04.02** Other transfers into the area in proximity to the receiving well;
 - 11.04.03** The total usage in proximity to the receiving well; and
 - 11.04.04** Other factors that would increase the rate of consumptive use in the area of the receiving well in making its decision.
- 11.05** Expedited transfers of acres may be made upon approval of the Board provided the following conditions are met:
 - 11.05.01** All acres transferred are within a township or floating township.
 - 11.05.02** The transfer does not result in a net increase in certified or irrigated acres.
 - 11.05.03** The tract receiving any acres must have been previously irrigated.
 - 11.05.04** A purchased tract shall not be involved in a transfer for a period of three (3) irrigation seasons from the date of purchase.
 - 11.05.05** Only existing wells shall be used to irrigate the resulting tracts.
 - 11.05.06** Upon the recommendation for approval by the manager and two (2) Board members, the application for expedited transfer shall be submitted to the Board for official action.
 - 11.05.07** Nothing set forth in this section (Rule 11.05) shall be construed as allowing development of any new wells or prohibiting a person seeking a transfer from pursuing a variance from these rules and regulations, as provided herein.

- 11.06** Applications may be made to the Board to withdraw ground water from a well within the District, transport that water off the overlying land and use it to augment water supplies in any stream or wetland within the District for the purpose of benefiting fish or wildlife or producing other environmental or recreational benefits. Any such application shall be evaluated in consideration of all the factors described in this section and of those considerations described in Neb. Rev. Stat. § 46-691.03 (Reissue 2004). Any permit authorizing a transfer for such purposes shall be subject to conditions imposed by the Board and to all requirements of Neb. Rev. Stat. § 46-691.03 (Reissue 2004).

Rule 12. GROUND WATER QUALITY

- 12.01** The Board shall implement procedures to monitor and protect the quality of the aquifers underlying the District. All areas in the District shall be considered as Phase I areas unless and until designated as Phase II or Phase III areas.

12.02 Implementation Processes and Procedures:

- 12.02.01** Deep soil testing, ground water well testing and standard soil sampling will be used to determine contaminant levels throughout the District and to determine the geographic and stratigraphic boundaries of any territory for which controls for ground water quality may be proposed.
- 12.02.02** Controls, rules, and regulations that may be proposed for ground water quality will be based on a three (3) phase program consisting of Phase I, Phase II and Phase III areas, as defined in Rule 1 of these rules and regulations.
- 12.02.03** In Phase I areas, annual monitoring of ground water samples will be conducted by the District.
- 12.02.04** When there is reasonable cause to believe that an identified ground water contamination is the result of one or more point source contaminants, the District will request the Nebraska Department of Environmental Quality to make a determination of whether the contamination is point source contamination.
- 12.02.05** The District will take ground water and deep soil samples to determine whether ground water is contaminated. Ground water samples will be taken in not less than fifty (50) locations throughout the District. If a particular sample indicates contamination in excess of the levels established for Phase II or Phase III areas, the District will take a minimum of twelve (12) additional ground water samples in a radius of three (3) miles of the identified contamination. The District will map the 3-mile subject area, divided into four (4) equal quadrants radiating from the location of the initial ground water sample source showing contamination. The total area of said map shall be approximately seven (7) miles square. If twenty-six (26) percent of the samples taken indicate contamination of more than forty (40) percent of the allowable level as established by the Nebraska Department of Environmental Quality, the subject area shall be designated a Phase II area. If twenty-six (26) percent of the samples taken indicate contamination of sixty (60) percent or more of the allowable level, as established by the Nebraska Department of Environmental Quality, the subject area shall be designated a Phase III area. If villages, cities or towns lie within

said 3-mile radius, water samples shall be taken from the public water system wells as at least one of the required twelve (12) samples.

- 12.02.06 The District will initiate education programs for ground water users regarding non-point and point source pollution.
- 12.02.07 The District will initiate a ground water quality study which will include deep soil testing and ground water sampling to identify types of contamination, and will identify the best management practices to control contamination, and perform other research as funds become available.

Rule 13. MORATORIUM

- 13.01 Pursuant to Neb. Rev. Stat. §46-739(1) (Reissue 2004), to achieve the purposes for which the Management Area was designated, there shall be no additional permits to construct a new water well issued nor shall there be an increase of irrigated acres within the entirety of the District.
 - 13.01.01 Industrial, public water system wells, and all wells that do not require a permit are exempt from Rule 13.01.
 - (a) Exemption under Rule 13.01.01 does not imply exemption from well spacing requirements (Rule 6), nor imply a new allocation will be granted (Rule 8).

Rule 14. GENERAL ENFORCEMENT PROVISIONS

- 14.01 The District may at any time order the District staff to investigate any matter within the jurisdiction of the Board or may order any hearing which the Board is authorized either by law or inherent power to conduct. The Board may require the attendance of any person at such hearing.
- 14.02 The Board, at its discretion, may grant variances from the strict application of these rules and regulations upon good cause shown.
- 14.03 Owners or operators of wells shall allow the District staff to enter upon any land, after requiring notice as provided by law, for the following purposes:
 - 14.03.01 To determine the amount of ground water withdrawn by any well;
 - 14.03.02 To inspect any flowmeter to insure proper installation, operation, and maintenance;
 - 14.03.03 To inspect any chemigation system to insure proper installation, operation, registration, and maintenance; and
 - 14.03.04 For any other reason necessary to implement, administer and discharge the duty of the District, as mandated by order, rule, regulation, control or statute.
- 14.04 The District shall enforce the provisions of the Ground Water Management and Protection Act, the Chemigation Act, and its own orders, rules, and regulations by the issuance of cease and desist orders and by bringing or defending appropriate legal actions, in the district court of the county where the violations occur, for enforcement of such orders. Such enforcement actions may consist of, but are not limited to, any one or more of the following sanctions:

- 14.04.01 Issuance of a cease and desist order pursuant to the Ground Water Management and Protection Act;
 - 14.04.02 Reduction of allocation, in whole or in part, for a period to be specified by the Board, but not limited to the current allocation period;
 - 14.04.03 Reduction of carryforward allocation carried forward from previous allocation periods, in whole or in part;
 - 14.04.04 Reduction in the number of certified irrigated acres on the tract, in whole or in part; and
 - 14.04.05 Revocation of a chemigation applicator's permit.
- 14.05 Any person who increases irrigated acres without consent of the Board, or who fails to comply with conditional requirements of any variances granted, shall be subject to one or any combination of the sanctions set forth in Rule 14.04.
- 14.06 Any person who chemigates without either an applicator's certificate or proper chemigation equipment pursuant to the Chemigation Act shall be subject to one or any combination of the sanctions set forth in Rule 14.04.
- 14.07 Owners of irrigated tracts receiving an allocation on certified irrigated acres are responsible for installing, inspecting, and maintaining the proper installation and operation of flowmeter(s) pursuant to these rules. Failure to do so shall subject the owner to one or any combination of the sanctions set forth in Rule 14.04.
- 14.08 Any person who tampers, obstructs, modifies or takes any action for the purpose of producing an inaccurate or incorrect flowmeter reading or who takes any other action that would prevent the District from obtaining an accurate estimate of actual water use shall be subject to one or any combination of the sanctions set forth in Rule 14.04.
- 14.09 In assessing a sanction, the District shall consider the degree and extent of the violation, the size of the operation, whether the violator has been previously determined to have violated a cease and desist order, controls, rules, or regulations of the District, the urgency of remedial action, and any economic benefit derived from noncompliance.
- 14.10 Any person within the District, or the Board on its own motion, may file a written complaint alleging violations of these rules and regulations, or of Board orders or controls, or of any provision for enforcement committed to Natural Resource Districts by State statute. Complaints shall be filed at the District office, 135 West 5th Street, Imperial, Nebraska, 69033.
- 14.11 The District shall investigate potential violations. In the event a violation is discovered by the staff or resulting from a complaint under Rule 14.10, upon completion of the investigation, the District staff shall file a report with the Board and deliver copies of the report to the alleged violator and to the complainant, if other than the Board, in person or by certified mail.
- 14.12 If the District staff finds there is reasonable cause to believe that a ground water user is, at the time of investigation, or was, at the time specified in the complaint, in violation of District rules, regulations or orders, then said staff report shall be accompanied by a formal notice of the alternative actions available to the alleged violator. Alternative actions available to the alleged violator shall be:

- 14.12.01 Agree with and consent to the District staffs' findings that the alleged violation has occurred or is occurring, consent to cease and desist from continuing or allowing the recurrence of such violation, and submit a plan and schedule of compliance. The District shall determine whether the plan and schedule will bring the user into compliance with District rules and regulations. If the Board determines that the proposed plan and schedule are adequate, it shall approve it. Alternatively, the Board may require the alleged violator to revise his plan and schedule of compliance to address any inadequacies.
- 14.12.02 Reject the findings of the report, and request a formal adjudicatory hearing within thirty (30) days.
- 14.13 The Board shall notify the person who filed the complaint of any action it proposes to take. If the complainant fails to object to the action of the Board within 30 days of such notification, the action of the Board on the complaint shall be considered final.
- 14.14 If the person filing the complaint objects to the Board action, he may request a formal adjudicatory hearing within thirty (30) days of the Board action.
- 14.15 When an alleged violator has been notified of Board action and has failed to respond to, or has failed to appear at any properly scheduled formal adjudicatory hearing, the Board shall:
 - 14.15.01 Review the complaint and the report, as well as any other pertinent information; and
 - 14.15.02 Issue such order or orders as it deems appropriate in accordance with these rules and regulations.

Rule 15. FORMAL ADJUDICATORY HEARINGS

- 15.01 Formal Adjudicatory Hearings will be conducted by the District for the following purposes:
 - 15.01.01 Any purpose set out in these rules and regulations.
 - 15.01.02 On request of any person aggrieved by a final action of the Board. Any request for a formal adjudicatory hearing pursuant to this subsection must be made within thirty (30) days of the Board's action.
 - 15.01.03 On approval of the Board, to resolve disputes between ground water users and others pertaining to allegations of illegal irrigation ground water run off or any other matter governed by these rules and regulations and delegated to the District by state statute.
- 15.02 The District shall appoint a hearing examiner who shall conduct the contested case hearing in accordance with Nebraska's Administrative Procedures Act.
- 15.03 The District or the hearing examiner shall prepare a notice setting the time and place of the formal hearing.
- 15.04 - The District or the hearing examiner may grant continuances and the Board may at any time order a continuance on its own motion.
- 15.05 The District or the hearing examiner may require stipulations on procedure to define the issues, or for any purpose designed to expedite the matter or to insure substantial due process or fairness.

- 15.06 The District or hearing examiner may request or permit the submission of briefs.
- 15.07 A record of any hearing conducted pursuant to statute or the rules and regulations of the District shall be preserved. The record shall include all testimony and exhibits presented at the hearing. Such record shall be made in the manner provided in the Administrative Procedures Act. Such record or a copy thereof shall be kept on file in the office of the District. The costs of creating the record, of the hearing examiner, and of other hearing expenses may be assessed against the unsuccessful party or parties in whole or in part, at the discretion of the Board, upon issuance of its final decision.
- 15.08 The Board may vote to deliberate and make its decision during a closed session as provided by Neb. Rev. Stat. § 84-1409(1)(ii) (Cum. Supp. 2004).
- 15.09 All orders and decisions of the Board shall be transmitted to the parties directly involved in the hearing by certified mail.
- 15.10 Any person aggrieved by an order or action taken by the Board following an formal adjudicatory hearing may appeal in accordance with the Administrative Procedures Act.

Rule 16. ADDITIONAL CONSIDERATIONS

- 16.01 The Board shall authorize the exploration of alternative means of supplying additional water to the Republican River Basin and, if warranted, any necessary research, investigation, or other activities necessary to pursue alternatives determined by the Board to be plausible, efficient, and feasible. Areas of such additional supply to be investigated include, but are not limited to:
 - 16.01.01 Transbasin diversions and transport of water from sources outside the Republican River Basin for the benefit of the District; and
 - 16.01.02 Augmentation of water supplies to the Republican River Basin through the mechanical, chemical, or other removal of trees and other phreatophytes depleting the ground water or surface water flows to the Republican River Basin.

Rule 17. GENERAL PROVISIONS

- 17.01 If any rule or any part of any rule herein and/or any portion of the District Technical Manual (Appendix 1) shall be declared invalid or unconstitutional, such declaration shall not affect the validity or constitutionality of the remaining portions thereof.
- 17.02 These rules and regulations may be amended following proper notice and hearing.
- 17.03 These amended rules and regulations replace all prior orders.

SURFACE WATER CONTROLS – Nebraska Department of Natural Resources (NDNR)

The authority for the surface water component of this IMP is Neb. Rev. Stat. §§ 46-715 and 46-716 (Reissue 2004). The surface water controls that will be continued and/or begun by the NDNR are as follows:

1. The NDNR will do the following additional surface water administration as required by the Settlement Agreement:
 - To provide for regulation of natural flow between Harlan County Lake and Superior-Courtland Diversion Dam, Nebraska will recognize a priority date of February 26, 1948 for Kansas Bostwick Irrigation District, the same priority date as the priority date held by the Nebraska Bostwick Irrigation District's Courtland Canal water right.
 - When water is needed for diversion at Guide Rock and the projected or actual irrigation supply is less than 130,000 acre-feet of storage available for use from Harlan County Lake as determined by the Bureau of Reclamation using the methodology described in Harlan County Lake Operation Consensus Plan attached as Appendix K to the Settlement Agreement, Nebraska will close junior, and require compliance with senior, natural flow diversions of surface water between Harlan County Lake and Guide Rock.
 - Nebraska will protect storage water released from Harlan County Lake for delivery at Guide Rock from surface water diversions.
 - Nebraska, in concert with Kansas and in collaboration with the United States, and in the manner described in Appendix L to the Settlement Agreement, will take actions to minimize the bypass flows at Superior-Courtland Diversion Dam.
2. Metering of all surface water diversions at the point of diversion from the stream will continue to be required. For surface water canals that are not part of a Bureau of Reclamation project, farm turnouts will be required to install and maintain a NDNR approved measuring device by the start of the 2005 irrigation season. All measuring devices shall meet the NDNR standards for installation, accuracy and maintenance. All appropriators will be monitored to ensure that neither the rate of diversion nor the annual amount diverted exceeds that allowed by the applicable permit or by statute.
3. The NDNR's moratorium on the issuance of new surface water permits was made formal by Order of the Director dated July 14, 2004. Exceptions may be granted by the NDNR to the extent permitted by Neb. Rev. Stat. § 46-714(3) (Reissue 2004) or to allow issuance of permits for existing reservoirs that currently do not now have such permits. Such reservoirs are limited to those identified through the Settlement Agreement required inventory of reservoirs with over 15 acre-feet capacity.
4. All proposed transfers of surface water rights shall be subject to the criteria for such transfers as found in Neb. Rev. Stat. §§ 46-290 to 46-294.04 (Reissue 2004) and related NDNR rules or the criteria found in Neb. Rev. Stat. §§ 46-2,120 to 46-2,130 (Reissue 2004) and related NDNR rules.
5. The NDNR completed adjudicated individual appropriators in the Republican River Basin upstream of Guide Rock in 2004. The results of that adjudication provided up-to-date records of the number and location of acres irrigated with surface water by such appropriators. Those records will be used by the NDNR to monitor use of surface water and to make sure that unauthorized irrigation is not occurring. The NDNR will also be proactive in initiating

subsequent adjudications whenever information available to the NDNR indicates the need for adjudication as outlined by state statutes.

6. At this time, due to the already limited availability of surface water supplies, the NDNR will not require that surface water appropriators apply or utilize additional conservation measures or that they be subject to other new restrictions on surface water use. However, the NDNR reserves the right to request, in the future, that this IMP be modified to require any such additional measures. In the event such a request is made, the NDNR will "allow the affected surface water appropriators and surface water project sponsors a reasonable amount of time, not to exceed one hundred eighty (180) days, unless extended by the NDNR, to identify the conservation measures to be applied or utilized, to develop a schedule for such application and utilization, and to comment on any other proposed restrictions." Neb. Rev. Stat. § 46-716(2) (Reissue 2004).

INCENTIVE PROGRAMS

Subject to the provisions of paragraph 5 under "Ground Water Regulations," above, the URNRD and the NDNR intend to establish and implement financial or other incentive programs to reduce beneficial consumptive use of water within the URNRD. As a condition for participation in an incentive program, water users, landowners or the URNRD may be required to enter into and perform such agreements or covenants concerning the use of land or water as are necessary to produce the benefits for which the incentive program is established.

Such incentive programs may include any program authorized by state law and/or Federal programs such as, but not limited to, the Conservation Reserve Enhancement Program (CREP) and Environmental Quality Incentives Program (EQIP) operated by the United States Department of Agriculture.

INFORMATION CONSIDERED

Information used in the preparation and to be used in the implementation of this IMP can be found in the simulation runs of the Republican River Compact Administration Ground Water Model, the formulae and data compliance tables of the Final Settlement Stipulation for the Compact, the URNRD's Rules, the URNRD's Ground Water Management Plan and additional data on file with the URNRD or the NDNR.

APPENDIX 1

UPPER REPUBLICAN NATURAL RESOURCES DISTRICT TECHNICAL MANUAL TM-28

PART I

LEGISLATION ESTABLISHING NATURAL RESOURCES DISTRICTS

Section 2-3201: Natural Resources, Declaration of Intent.

The Legislature hereby recognizes and declares that it is essential to the health and welfare of the people of the State of Nebraska to conserve, protect, develop and manage the natural resources of this state. The Legislature further recognizes the significant achievements that have been made in the conservation, protection, development and management of our natural resources and declares that the most efficient and economical method of accelerating these achievements is by creating natural resources districts encompassing all of the area of the state.

The Legislature further declares that the functions performed by soil and water conservation districts, watershed conservancy districts, watershed districts, advisory watershed improvement boards, and watershed planning boards shall be consolidated and made functions of natural resources district., Tthe governing boards of such districts and boards shall complete, before July 1, 1972, the necessary transfers and other arrangements so that such boards may on that date, begin the operation of natural resources districts.

This legislation created twenty-four Natural Resources Districts (NRDs) in the State of Nebraska. The initial twenty-four (24) (now twenty-three (23)) NRD District boundaries were based on the approximate hydrologic boundaries of the recognized river basins of the State.

The Upper Republican Natural Resources District, which encompasses Dundy, Perkins, and Chase Counties, began operations on July 1, 1972. On that date, the District accepted the assets, liabilities, and obligations of the Dundy, Chase, and Perkins County Soil and Water Conservation Districts.

PART II

GOVERNANCE OF THE URNRD

An eleven (11) member Board of Directors governs the Upper Republican Natural Resources District. All eligible electors of the District may vote for Board members at general elections. The District is divided into ten (10) sub-districts. One (1) Board member is elected from each sub-district and one (1) at-large member is elected.

Candidates for sub-district Board positions must reside in the sub-district for which they are elected. The at-large Board member must reside within the boundaries of the Upper Republican Natural Resources District. The Board of Directors will appoint an eligible person to fill any unexpired term.

Board of Directors

The Board is responsible for establishing District policies, programs, rules and regulations, and adopting the necessary budget, in order to fulfill the responsibilities of the District as authorized and required by law. The Board is also responsible for overseeing management to insure that the policies, programs, regulations, and budget are carried out as intended, and for approving District expenditures. The day-to-day management is the General Manager's responsibility. In general, the Board sets policy and the staff carries it out.

The Board holds regularly scheduled monthly meetings on the first Tuesday of each month, at which time the Board shall take action and make determinations as necessary and required by law. These meetings shall comply with the Open Meetings Law, and each Director shall receive a copy of meeting notices and agendas.

A majority of the voting members of the Board shall constitute a quorum, and the concurrence of a majority of the Directors present at any regular or special meeting at which such quorum is present shall constitute official action of the entire Board. If less than a quorum is present at a meeting, no official action shall be taken, and the presiding officer shall adjourn the meeting. If a quorum cannot convene for any reason, the General Manager shall have the authority to approve recurring bills and salaries, and forward them to the District Secretary-Treasurer for his/her signature, as funds are available in the District treasury.

Each Director present at regular or special meetings shall be entitled to one vote upon each matter submitted to a vote, including the Chairperson if he/she chooses to vote. The Board shall follow Robert's Rules of Order in conducting District business. Action taken on any question or motion, duly moved and seconded, shall be by roll call vote of the Board in open session, and the record shall state how each member voted, or if the member was absent or abstaining.

OFFICERS OF THE BOARD

Officers of the Board shall include Chairperson, Vice Chairperson, and Secretary-Treasurer. The officers of the Board are elected by majority vote of Board members present.

The officers shall hold office for a one (1) year term and until his/her successor has been duly elected and qualified, or until he/she vacates the office due to death, disability resignation, relocation, removal, or other disqualification. A vacancy in any office on the Board due to death, disability, resignation, removal, or other disqualification shall be filled by election of the Board for the unexpired term of the office.

Duties

- A. Chairperson shall be the principal officer of the Board and subject to the control of the Board. The Chairperson shall be empowered to make non-policy decisions between meetings in carrying out the works, policies, and intents of the District. He/she will preside at all meetings of the Board of Directors. He/she may sign, with any proper officer, any agreements, contracts, or other instruments, which the Board has authorized to be executed. Exceptions would be in cases when the signing and execution shall be expressly delegated by the District Board, or by the bylaws, to some other officer of the Board, or shall be required by law to be otherwise signed and executed. The Chairperson shall perform all duties incident to the office of Chairperson, and the Board may prescribe such other duties.
- B. Vice Chairperson, in the absence of the Chairperson or in the event of his/her inability to act, shall perform the duties of the Chairperson. When so acting, he/she will have all the powers of, and be subject to all the restrictions upon, the Chairperson. The Vice Chairperson shall perform other duties from time to time that may be assigned to him/her by the Chairperson or by the Board.
- C. Secretary-Treasurer shall keep the minutes of the Board, see that all notices are given in accordance with Board policies or as required by law. In general, the incumbent will perform all the duties incident to the office of Secretary-Treasurer and such other duties from time to time that may be assigned to him/her by the Chairperson or by the Board. He/she shall keep an accurate account of all funds received and expended by the District, be bonded in the amount required by statutes, and see that all approved bills payable are paid and receipts received, and be empowered to sign checks on the District's account to retire approved bills and debts of the District.

In case of temporary absence of any officer for any reason that the Board may deem sufficient, the Board may delegate the powers and duties of such officer to any other officer, or to any other Director of the Board, for the time of the temporary absence, provided a majority of the Board concurs.

COMMITTEE RESPONSIBILITIES

Committee Responsibilities are divided into different sections represented by five (5) standing Board Committees. The Executive Committee shall appoint membership to the other four (4) standing committees. The committees shall have and exercise duties in the best interests of the District. The committees have individual responsibilities of overseeing District functions and activities and making recommendations to the Board of Directors as necessary to carry out the responsibilities of the District. The Chairperson or the Board, may, from time to time, assign additional duties to specific committees.

- A. Executive Committee: The Executive Committee, consisting of the Chairperson, the Vice Chairperson, and the Secretary-Treasurer, is responsible for Board organization, functions, ethics, and discipline. The Committee oversees personnel (including salary, wages, and benefits), buildings, and equipment needs, as well as general management of the District, and makes recommendations to the Board regarding these responsibilities.
- B. Budget Committee: The Budget Committee oversees the financial management and long range planning of the District. The annual budget of all the District's activities are reviewed and approved by this Committee which then makes recommendations to the Board, prior to Board consideration of approval of the budget.
- C. Variance Committee: The Variance Committee meets with all individuals who request a variance from the rules and regulations of the Board. The Committee reports to the Board at a regular Board meeting. The variance requests are reviewed by the Board and placed on the agenda for the next regular Board meeting for decision.
 - 1. All information for a variance request should be brought to the District Office at Imperial and discussed with the Manager.
 - 2. The Manager will distribute all information concerning the variance to the Variance Committee, all other Board members, and person(s) requesting the variance.
 - 3. The Variance Committee will meet with person(s) requesting a variance at the time set by the Manager to hear the variance request.
 - 4. The Variance Committee will report to the Board at a regular or special Board meeting the information received for the variance requested.
 - 5. The variance request will be voted on at the next regular Board meeting. At that time the Variance Committee will make a recommendation to the Board concerning the variance request.
- D. Ground Water Control Committee: The Ground Water Control Committee reviews all information received from the staff, and state and federal agencies. The Committee shall make recommendations to the full Board on needed studies and research projects; amendments to the Ground Water Control Rules and Regulations; date, time, and place to hold information meetings and public hearings; and material that should be made available to the public at information meetings and public hearings.
- E. Education and Information Committee: The Committee oversees both the education and information dissemination activities of the Board, which include the following: habitat, tree planting, public relations, education, and informing the public of District activities.

Standing Committee Membership

Executive Committee

Greg Pelster, Chairperson
Tom Terryberry, Vice Chairperson
Kenny Owens, Secretary-Treasurer

Information and Education Committee

Jerry Kuenning, Chairperson
Mike Mosel
Terry Martin
Michael Strand

Budget Committee

Donn Gengenbach, Chairperson
Jerry Kuenning
Kerry Bernhardt
Kenny Owens

Variance Committee

Kenny Owens, Chairperson
Terry Martin
Donn Gengenbach
Michael Strand
Tim Schilke

Ground Water Control Committee

Dean Large, Chairperson
Tom Terryberry
Kerry Bernhardt
Terry Martin

EOIP Local Work Group

Terry Martin, Dundy
Greg Pelster, Perkins
Jerry Kuenning, Chase

Building Committee

Donn Gengenbach, Chairperson
Terry Martin
Tim Schilke
Kenny Owens

URNRD Special Assignments 2005

Republican River Basin Coalition

Greg Pelster
Dean Large

NARD

Mike Mosel, Delegate
Terry Martin, Alternate

Negotiating Committee

Greg Pelster
Tom Terryberry
Kenny Owens
Dean Large
Terry Martin

Upper Republican NRD Staff

Imperial Office

308-882-5173

Jasper Fanning, General Manager
Debra Hayes, Administrative Assistant
Mike Nesbitt, Conservation Programs Coordinator
Heather Francis, Conservation & Information Specialist
John Lemon, Conservation Technician
Todd Burrell, Conservation Technician
Sid Bartels, Water Quality Conservation Technician

URNRD Field Office Secretaries

Located in NRCS Offices

Wilma Zimbelman, Benkelman
308-423-2696
Rebecca Spady, Imperial
308-882-4263
Patty Clough, Grant
308-352-4776

PART III
CONVERSION TABLES
And
ANNUAL ALLOWABLE WITHDRAWAL FORMULA

WATER EQUIVALENTS

1 acre-foot	326,850 gallons
1 acre-inch	27,154 gallons
1 acre-foot covers 1 acre of land 1 foot deep	
1 acre-inch covers 1 acre of land 1 inch deep	
10.833 acre-feet	1 in./ac. on 130 acres
157.08 acre-feet	14.5 in./ac. on 130 acres
98.05 hr. @ 600 gpm	1 in./ac. on 130 acres
73.54 hr. @ 800 gpm	1 in./ac. on 130 acres
58.83 hr. @ 1000 gpm	1 in./ac. on 130 acres

ANIMAL UNIT EQUIVALENTS

Slaughter Steer/Heifer	1.0
Cow - 1000 Pounds	1.0
Dairy Cow	1.4
Cow/Calf Pair	1.4
Sheep (Ewe)	0.1

Swine - Under 55 pounds	0.05
Swine - Over 55 pounds	0.4
Horse - {Medium Size}	1.0

PART IV

ANNUAL ALLOWABLE WITHDRAWAL FORMULA

In the evaluation of the annual allowable withdrawal for any purpose, the following three-mile radius circle formula shall be used:

$$A = \frac{640(D)(S.Y.) 3.1416 R^2 H}{(1.0 - Ir)t} + \frac{640(f)(Pr) 3.1416 R^2}{12(1.0 - Ir)}$$

where,

A = Annual allowable withdrawal within the circle being evaluated in acre-feet per year

D = Allowable depletion (expressed as a decimal)

S.Y. = Specific yield (dimensionless)

R = Radius of circle (miles)

H = Average saturated thickness within the circle (feet)

t = Time period during which depletion, **D**, occurs (years)

Pr = Precipitation recharge (inches/yr.)

f = Fraction of **Pr** that is available for appropriation in the circle (dimensionless)

Ir = Fraction of **A** that returns to the aquifer as deep percolation, i.e., irrigation return (dimensionless)

The constants in the above equation are:

$$D = 0.26, R = 3 \text{ miles}, t = 100 \text{ years}, f = 0.2 \text{ and } Ir = 0.15$$

Saturated thickness, H, shall be determined by evaluation of the three (3) year average contour maps developed from spring well measurements conducted by the NRD as well as other pertinent available water level data.

Specific yield, S.Y., and **Precipitation Recharge, Pr**, will be determined from Figure 19, page 34 and Figure 20, Page 40, respectively, "Simulated Response of the High Plains Aquifer to Ground-Water Withdrawals, Upper Republican Natural Resources District, Nebraska," Water-Resources Investigations Report 95-4014, USGS, 1995, as well as other pertinent available water level data.

Definitions

Unless expressly stated otherwise the following terms when used in this technical manual shall have the meaning indicated in Part IV.

Annual Allowable Withdrawal (AAW) means the average amount of water in acre-feet that a permittee may withdraw from a well in a calendar year.

Saturated Aquifer Material(s) means those aquifer materials containing sufficient water that can be drained by gravity and placed to beneficial use.

Specific Yield means the volume of water which can be drained by gravity from a saturated volume of aquifer material divided by the volume of material. This ratio can be expressed as a percentage.

Three-Mile Circle or Circle means a circle with a radius of three (3) miles centered at the location of the well or proposed well used to appropriate water from the Highplains Aquifer.

An example calculation using the AAW Formula to solve for -

A = Annual allowable withdrawal within the circle being evaluated in acre-feet per year

where,

D	=	.26	Allowable depletion (expressed as a decimal)
S.Y.	=	0.2	Specific yield (dimensionless)
R	=	3	Radius of circle (miles)
H	=	200	Average saturated thickness within the circle (feet)
t	=	100	Time period during which depletion, D, occurs (years)
Pr	=	2	Precipitation recharge (inches/yr.)
f	=	0.2	Fraction of Pr that is available for appropriation in the circle (dimensionless)
Ir	=	0.15	Fraction of A that returns to the aquifer as deep percolation, i.e., irrigation return (dimensionless)

$$A = \frac{640(D)(S.Y.) 3.1416 R^2 H}{(1.0 - Ir)t} + \frac{640(f)(Pr) 3.1416 R^2}{12(1.0 - Ir)}$$
$$A = \frac{(640)(.26)(0.2)(3.1416)(3^2)(200)}{(1.0 - 0.15)100} + \frac{(640)(0.2)(2)(3.1416)(3^2)}{12(1.0 - 0.15)}$$
$$A = \frac{(904.78)(200)}{85} + \frac{804.26(9)}{10.2}$$

A = 2838.53 Acre-Feet of annual allowable withdrawal

This number is compared to the total acre-feet of allocated water for all the certified irrigated acres contained within the circle as part of the evaluation of the impact of any proposed transfers or other water management techniques.

PART V

WELL SPACING REQUIREMENTS

Table 1. Well spacing requirements.

Minimum Spacing Requirements for Wells Drilled After June 2, 2005			
	New Wells	Replacement Wells	
		Well to be replaced is not within 1320 ft. of another land owner's domestic or livestock well or 5280 ft. of any other well	Well to be replaced is within 1320 ft. of another land owner's domestic or livestock well or 5280 ft. of any other well
Domestic	Not regulated	Not regulated	Not regulated
Livestock	Not regulated	Not regulated	Not regulated
Commercial Livestock	1320 ft. from domestic and livestock wells & 5280 ft. from all other well(s) owned by others	1320 ft. from domestic and livestock wells & 5280 ft. from all other well(s) owned by others	Replacement well must be drilled within 150 ft. of well to be replaced
Irrigation	1320 ft. from domestic and livestock wells & 5280 ft. from all other well(s) owned by others	1320 ft. from domestic and livestock wells & 5280 ft. from all other well(s) owned by others	Replacement well must be drilled within 150 ft. of well to be replaced
Industrial	1320 ft. from domestic and livestock wells & 5280 ft. from all other well(s) owned by others	1320 ft. from domestic and livestock wells & 5280 ft. from all other well(s) owned by others	Replacement well must be drilled within 150 ft. of well to be replaced
Municipal	1320 ft. from domestic and livestock wells & 5280 ft. from all other well(s) owned by others	1320 ft. from domestic and livestock wells & 5280 ft. from all other well(s) owned by others	Replacement well must be drilled within 150 ft. of well to be replaced

Upper Republican NRD

