

DEUEL COUNTY GROUND WATER MANAGEMENT SUBAREAS
RULES AND REGULATIONS

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Approved by Board of Directors: July 8, 1997
Amended by the Board of Directors: January 13, 2004

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**SOUTH PLATTE NATURAL RESOURCES DISTRICT
DEUEL COUNTY GROUND WATER MANAGEMENT SUBAREAS
RULES AND REGULATIONS
FOR THE ENFORCEMENT OF CONTROLS PURSUANT TO THE
NEBRASKA GROUND WATER MANAGEMENT AND PROTECTION ACT**

1. **AUTHORITY** - These rules and regulations are adopted pursuant to the authority granted in N.R.S. 46-656.08
2. **PURPOSE** - The purpose of these rules and regulations is for the orderly implementation of the Ground Water Management and Protection Act, 46-656 et. seq. N.R.S. in order to stabilize, reduce, and prevent the increase or spread of ground water contamination in portions of the District where available data, evidence, and other information indicates that present or potential ground water conditions dictate such actions.
3. **APPLICABILITY** - These rules and regulations apply to the lands of the District which were designated by the South Platte Natural Resources District Board of Directors as a Ground Water Quality Management Subarea (GWQMS) or what is referred to as the Deuel County Ground Water Management Subareas (DCGWMSs) on November 15, 1994 under the authority granted in Section 46-656.20 N.R.S. For legal descriptions and a map of the land in the DCGWMS refer to Attachments C & D of these Rules and Regulations. The implementation of the Deuel County Ground Water Management Subareas became effective on February 13, 1995 for the 1995 growing season. The controls pursuant to the authority in 46-656.08(1) N.R.S. are stated in Rule 14 of these rules and regulations.
4. **GENERAL PROVISIONS AND PROCEDURES FOR ENFORCEMENT** -

General - The District shall enforce the provisions of the Ground Water Management and Protection Act, Ground Water Quality Management Plan - Chapter 7 of the SPNRD=s Ground Water Management Plan, and all rules and regulations adopted pursuant thereto by the issuance of cease and desist orders in accordance with the procedures hereinafter specified and by bringing appropriate actions in the District Court of Deuel County in which any violations occur for enforcement of such orders. Cease and desist orders may be issued for the following reasons:
 - a. Construction or operation of an illegal well as defined in these rules and regulations.
 - b. Operation of an irrigation system in the DCGWMSs that is in non-compliance with the allocatable use of ground water as set forth in these DCGWMS Rules and Regulations as required by the Board of Directors
 - c. Operation of a cropping system in the designated DCGWMSs in violation of the controls (Best Management Practices) adopted by the Board of Directors in the DCGWMS Rules and Regulations. Refer to Rule 14 for the controls in each phase.
 - d. Operation of a cropping system in the designated DCGWMSs without the appropriate certification of completion of the education programs required by the Board of Directors. Refer to Rule 14 of these Rules and Regulations for the certification education controls.
 - e. Operation of a cropping system in the designated DCGWMSs without submitting such analyses, reports or forms as may be required by the Board of Directors as set forth in Rule

14 of these DCGWMS Rules and Regulations, District's Chapter 7, Ground Water Quality Management Plan, or required by the Board of Directors.

5. **DEFINITIONS** - The following definitions shall be used in the administration of the DCGWMSs:

Acre-inch - shall mean the amount of water necessary to cover an acre of land one inch deep.

Alleged Violator - shall mean the landowner/operator of the land who has failed to comply with any or all the appropriate requirements of these rules and regulations.

Allocation - shall mean the allotment of a specified total number of acre-inches of irrigation water per irrigated acre per year or an average number of acre-inches of irrigation water per irrigated acre over any reasonable period of time not to exceed five years.

Application for a Permit - shall mean a form required to be obtained from the South Platte Natural Resources District before a water well is constructed in the management subarea in accordance with Section 46-656.29 N.R.S. and amendments thereto.

Application for a Late Permit - shall mean a form required to be obtained from the South Platte Natural Resources District after a water well has been constructed without a permit in the management subarea in accordance with Section 46-656.30 N.R.S. and amendments thereto.

Best Management Practices - shall mean schedules of activities, maintenance procedures and other management practices used to prevent or reduce present and future contamination of ground water which may include soil testing, water testing, manure testing, irrigation scheduling, monitoring of irrigation water applications, use of inhibitors, proper timing and rate of fertilizer and pesticide application, and other fertilizer and pesticide management programs as adopted by the Board.

Board or Board of Directors - shall mean the elected Board of Directors of the South Platte Natural Resources District.

Certification - shall mean a current certificate of completion issued by the District to the operator for completion of the necessary educational programs outlined by the District.

Compliance Officer - shall mean an employee or agent of the District authorized by the District Manager to perform the functions assigned thereto by these rules and regulations.

Controls - shall mean any requirements or restrictions placed upon a landowner/operator or on a field. (Controls for each phase of a Management Subarea are identified under Rule 14 of these Rules and Regulations.)

District, SPNRD or NRD - shall mean South Platte Natural Resources District.

Director - Shall mean the Director of the Department of Natural Resources.

Educational Programs - shall mean information and educational training sessions designed to acquaint landowners and operators with best management practices in the operation of their

irrigation and cropping system.

Ground Water - shall mean water which occurs or moves, seeps, filters or percolates through the ground under the surface of the land.

Ground Water User - shall mean a person who at any time extracts, withdraws or confines ground water for any use by himself or herself or allows such use by other persons at a rate in excess of 50 gallons per minute. Whenever the landowner and operator are different, the term ground water user shall mean both the landowner and the operator.

Illegal Water Well - shall mean:

- a. Any water well operated or constructed without or in violation of a permit required by the act,
- b. Any water well not in compliance with the rules and regulations adopted and promulgated pursuant to the act,
- c. Any water well not properly registered in accordance with Sections 46-602 to 46-604,
- d. Any water well not in compliance with any other applicable laws of the State of Nebraska or other rules and regulations of the District,
- e. Any water well in violation of spacing requirements specified in the District's Water Well Permit Restrictions or by Sections 46-609 and 46-651 N.R.S.,
- f. Any water well used for the application of chemical materials in violation of Sections 46-1101 to 46-1148 N.R.S. as such statutes may be amended and supplemented, and such rules and regulations as may be adopted from time to time by the State Department of Environmental Quality.
- g. Any water well located within 50 feet of the bank of any natural stream and used for irrigation purposes without a permit issued pursuant to Sections 46-636, and 46-637 N.R.S.

Irrigated Acre - shall mean any acre that is certified as such pursuant to rules and regulations of the District and that is actually capable of being supplied water through irrigation works, mechanisms, or facilities existing at the time of the allocation.

Landowner - shall mean any person who owns or is in the process of purchasing land.

Management Subarea - shall mean the Deuel County Ground Water Management Subareas (DCGWMS) a subarea so designated by the District pursuant to Section 46-656.20 N.R.S.

Management Plan or Plan - shall mean Chapter Seven, The Ground Water Quality Management Plan, of the South Platte Natural Resources.

Nonpoint Source Contamination - any source of pollution resulting from the dissolution and disbursement of widespread, relatively uniform contaminants of a nonspecific origin.

Operator - shall mean that person who has the most direct control over the day to day farming operations of the land concerned.

Permit – shall mean an approval document that must be obtained from the District in accordance with Neb. Rev. Stat. §§46-656.29 through 46-656.31, and the South Platte Natural Resources District’s Rules and Regulations for the enforcement of the Act.

Person - shall mean a natural person, personal representatives, trustee, guardian, conservator, partnership, association, corporation, limited liability corporation, municipality, irrigation district, and any agency or political subdivision of the State of Nebraska or any department, agency, or a bureau of the United States.

Sampling/Analyzing Organizations for Nitrogen Fertilizer Recommendations - shall mean organizations recognized by the South Platte Natural Resources District that provides services for making recommendations for application of a specific amount of nitrogen calculated in pound per acre to meet the crop yield goal for the field.

Water Well - For purposes of Chapter 46, article 6, water well shall mean any excavation that is drilled, cored, bored, washed, driven, dug, jetted or otherwise constructed for the purpose of exploring for ground water, monitoring ground water, utilizing the geothermal properties of the ground, obtaining hydrogeologic information or extracting water from or injecting water into the underground water reservoir. Water well shall not include any excavation made for obtaining or prospecting for oil or natural gas or for inserting media to repressure oil or natural gas bearing formation regulated by the Nebraska Oil and Gas Commission.

6. **INSPECTIONS** - When the compliance officer determines that an inspection of District records or field activities is necessary to determine whether or not a landowner/operator is in violation of these rules and regulations, the alleged violation will be investigated by the compliance officer within five (5) days after the violation is suspected (excluding Saturdays, Sundays, and legal holidays). If a field inspection is required, the compliance officer upon proper identification and after informing the landowner/operator in control of the land, either in person or by certified return receipt request mail, of the suspected violation(s) and the compliance officer's purpose, is authorized to enter upon the land if necessary for the purpose of making an investigation of the alleged violation (N.R.S 46-656.08(4)). Upon completion of the investigation of records or field activities, the compliance officer shall file a report of his or her findings in the District office and shall deliver a copy of the report to the alleged violator in person or shall transmit the same by certified return receipt request mail.

7. **SUBMISSION OF INSPECTION REPORT ALLEGING VIOLATION AND ALLEGED VIOLATOR'S ALTERNATIVES** - If the compliance officer finds in his or her report that there is reasonable cause to believe that the landowner/operator is, at the time of investigation, in violation of these rules and regulations, then said compliance officer's report, prepared and delivered in accordance with rule 6 of this section, shall be accompanied by a formal notice of the alternative actions available to the alleged violator. Alternative actions shall be:
 - a. Agree with and accept as true and correct the compliance officer's findings that the alleged violation(s) has in fact occurred or is occurring; consent in writing to cease and desist from continuing or allowing the recurrence of such violation; and submit a schedule of compliance in accordance with Rule 8; or
 - b. Reject the findings of the compliance officer's report and request in writing that a formal hearing be scheduled and conducted in accordance with the rules and regulations of the District.

The alleged violator shall be granted not more than seven (7) days (excluding Saturdays, Sundays, and legal holidays) following the date that said report and notice is provided to him or her to respond and to indicate any actions intended.

8. **SCHEDULE OF COMPLIANCE** - If the alleged violator agrees under Rule 7, Part a., he or she shall submit a plan to accomplish compliance with these rules and regulations within ten (10) days (excluding Saturdays, Sundays, and legal holidays) following the written notification which the alleged violator has submitted to the compliance officer in the manner hereinafter provided.
9. **ACTION SUBSEQUENT TO CONSENT TO CEASE AND DESIST** - When an alleged violator has been notified in accordance with Rule 6 of this section and has consented to take corrective action in accordance with Rule 7, Part a., the District compliance officer shall review the investigation report, the schedule of compliance, and any other related or pertinent document.

The compliance officer shall determine whether the actions agreed to by the landowner/operator will, when applied, bring such user into compliance with these rules and regulations. If the compliance officer determines that the proposed actions of the landowner/operator are adequate and will prevent future noncompliance within a reasonable time period, he or she shall approve such action or plan and approve the schedule of compliance, and shall supply written notification to the alleged violator.

If the District compliance officer determines that implementation of the proposed schedule of compliance would be inadequate to prevent violation of the rules and regulations, he or she shall indicate in writing to the alleged violator by certified return receipt mail the additions or changes he or she deems necessary.

The alleged violator shall have five (5) days (excluding Saturdays, Sundays, and legal holidays) from the date of receipt of such notice to consent to such additions or changes, agree to negotiate appropriate changes or reject such changes and request a formal hearing.

10. **FORMAL HEARING GIVEN** - If voluntary measures can not be agreed upon between the compliance officer and the alleged violator, or the violator rejects the findings of the compliance officer's report under Alternative Actions Rule 7, Part b, the alleged violator shall be given an opportunity to contest the investigation report, or the schedule of compliance required by the compliance officer, at a Board hearing or formal public hearing to be held no sooner than fifteen (15) days and not more than forty-five (45) days after receipt of notice. Notice of the hearing shall be given to the alleged violator, the Board of Directors and any other appropriate party. The District's rules for a formal adjudicate hearing shall govern the conduct of all such hearings. The alleged violator shall be further notified that if he or she does not respond to the notice and does not appear at the Board hearing for which notice was given, the Board shall proceed in his or her absence to make a final determination on the existence of the violation of these rule and regulations and shall determine if a formal cease and desist order shall be filed against the alleged violator(s).

The Board may take such actions as it deems necessary, after consideration of the report of the compliance officer, the evidence of the landowner/operator, and any other evidence received at the hearing, to cause the landowner/operator to comply with these rules and regulations. The Board may authorize deviation from the strict provisions of these rules and regulations if

determined to be required because of the uniqueness of the circumstances presented.

Issuance of the cease and desist order may take place after conducting the Board hearing if the alleged violator continues to reject requirements for corrective action and program compliance.

11. **LANDOWNER'S/OPERATOR'S ACTIONS FOLLOWING ISSUANCE OF CEASE AND DESIST ORDER** - Any landowner/operator against which a cease and desist order for a violation has been issued in accordance with these rules and regulations shall within seven (7) days (excluding Saturdays, Sundays, and legal holidays) following receipt of such order, submit a schedule of compliance. The schedule of compliance shall be approved by the District's compliance officer if it is in accordance with said cease and desist order and it will be carried out within a time period determined appropriate.
12. **BOARD AUTHORIZATION TO INITIATE COURT ACTION** - The Board may initiate appropriate legal actions in the District Court of Deuel County in which the violation has occurred whenever necessary to enforce any action or orders of the District in accordance with these rules and regulations.
13. **CEASE AND DESIST ORDER; VIOLATION; PENALTY** - Any violation of a cease and desist order issued by the District pursuant to Section 46-656.10 shall be subject to a civil penalty.
14. **CONTROLS IN GROUND WATER QUALITY MANAGEMENT SUBAREAS** - The following controls apply to operators and landowners of agricultural land that apply fertilizers to irrigated crops.

Phase I Controls: **Established when Nitrate-nitrogen levels exceed 65% of the MCL for three consecutive years.**

1. All operators must maintain certification in the GWQMS Certification Program. This may be accomplished any one of the following options:
 - a. Attending a class and training session on best management practices.
 - b. Successfully completing a written exam as supplied by the University of Nebraska Cooperative Extension Education Program.

For further explanation of these certification options refer to p.7-12 of the Ground Water Quality Management Plan.

2. Operators must apply for well drilling permits for new wells drilled within Management Subareas with a capacity greater than 50 gpm.

Phase II Controls: **Established when Nitrate-nitrogen levels exceed 80% of the MCL for three consecutive years.**

1. In a Phase II Subarea, all requirements in Phase I will be continued.

2. Soil samples will be required annually on Phase II fields on which manure and/or commercial nitrogen fertilizer is applied to crops within the DCGWMS. Soil sampling as described above was implemented in the 1995 crop year. This requirement pertains to all irrigated crops for which fertilizer is applied. All required soil samples will be at the operator's or owner's expense.
 - a. Sampling and analysis shall be performed prior to application of commercial nitrogen fertilizer or manure on each crop for the ensuing year.
 - b. A composite sample is required from each field at two depths. Each composite sample will be collected on a tract of land no larger than 40 acres. Each composite sample will consist of a minimum of eight probes taken at each of the two depths. The depths will be 0-10 inches to determine soil fertility needs including nitrate nitrogen levels, and 10-36 inches to account for the balance of nitrate-nitrogen.
 - c. The composite soil samples shall be sent to a soils lab approved by the South Platte NRD. An annual list of approved laboratories will be made available and kept on file. (Refer to Appendix E)
 - d. The recommended nitrogen application rate will be determined by the nitrogen accounting method in the District's Annual Nitrogen Management Report form.
3. All Phase II fields that are irrigated with ground water will be required to have a water sample collected and analyzed from the supplying well(s) for nitrate-nitrogen levels before the 1996 cropping year, and for each year thereafter. All required water samples will be at the operator's or owner's expense.
 - a. Water samples will be collected and analyzed before application of any commercial nitrogen fertilizer or manure for the following crop year. For convenience of testing, water samples should be taken during the pumping season of the prior crop year. Water samples should be collected the same time each year.
 - b. Water samples shall be sent to testing labs approved by the South Platte NRD. An annual list of approved labs will be made available and kept on file. (Refer to Appendix E)
4. Farm operators that apply manure for fertilizer purposes are required to sample the manure for nitrogen content before application on Phase II fields. The Annual Reporting form will be used to estimate the nitrogen credit given to manure. All required manure samples will be at the operator's or owner's expense.
 - a. Rate (tons manure/acre) of manure to be applied and nitrogen content should be considered in advance to not exceed total nitrogen need of the crop.
5. The filing of annual reports for operators/owners of Phase II fields will be required beginning with the 1995 crop year. The report form serves as a worksheet for the operator to determine how much nitrogen will be needed for the following crop year.
 - a. The reports will be filled out on forms provided by the South Platte NRD requiring the following information:
 1. Water testing results for each irrigation well
 2. Soil testing results for each forty (40) acres

3. Manure application rates and analysis for nitrogen
 4. Crop to be grown and the realistic yield goal
 5. Total nitrogen needed for yield goal
 6. Nitrogen available from water
 7. Residual nitrogen available in three feet of soil
 8. 50% of the pounds of nitrogen per acre available from manure, if applicable
 9. Nitrogen available from past crop
 10. Recommended use of commercial fertilizer to achieve realistic Yield Goal
 11. Actual commercial fertilizer (nitrogen) applied
 12. Beginning and ending flow meter readings, if available
 13. Inches of water applied (actual or estimate)
 14. Irrigation scheduling method used
 15. Actual yield achieved
- b. Annual reports must be submitted to the South Platte NRD twice each year. The top white sheet of the report(s) must be turned into the NRD on or before April 25th of each year with the top portion (Fertilizer Data Information) of the form completed. Following harvest, the bottom portion (Field Data Information) of the report will need to be completed and the yellow copy submitted to the District on or before December 31st of each year. The producer retains the pink copy for his or her files. Copies of applicable water, soil, and manure analyses shall be attached to the completed reporting form. These requirements became effective for the 1995 growing season.
- c. Irrigation wells will be tagged for identification purposes.

Phase III Controls: Established when Nitrate-nitrogen levels exceed 95% of the MCL for three consecutive years.

1. In a Phase III Subarea, all requirements in Phases I & II will be continued.
2. Flow meters or other approved water measuring devices (including surface water flow measuring equipment) will be required to measure the amount of water applied to each irrigated field.
3. Commercial fertilizer application on all soils before March 1st will be banned.
4. Spring applications will either be split by preplant and sidedress applications, split applications through a pivot chemigation system or will be applied with an inhibitor if the split application is not administered.
5. Implementation of an allocation schedule pursuant to NRS SS. 46-656.26(1). Allocation shall mean the allotment of a specified total number of acre-inches of irrigation water per irrigated acre per year or an average number of acre-inches of irrigation water per irrigated acre over any reasonable period of time not to exceed five years (NRS SS. 46-656.07(16))
A public hearing will be held by the South Platte NRD to determine allocation rates when they become necessary. The controls adopted for the ground water quality portion of these rules and regulations will also allow for the beneficial use of the ground water.

The Nebraska Department of Agriculture (1992) reported that in 1991 27,000 acres of land were irrigated in Deuel County. Surface water is available to irrigate a relatively small amount of those acres. Most of the surface water used for irrigation comes from the Western Canal in the South

Platte River Valley. Operators using surface water to irrigate their lands often have to supplement their irrigation needs with ground water because the surface water allocation is insufficient.

APPENDIX A

ALLOCATION CONTROLS

If establishment of a Phase III subarea becomes apparent, an allocation schedule shall be implemented in accordance with N.R.S. 46-656.25(1)(a) on all irrigated cropping system fields to assure irrigation

efficiency and water conservation.

Public hearings will be held by the South Platte NRD to determine allocation rates when they become necessary. Ground water allocations will range between 14 inches/acre/year and 18 inches/acre/year. The controls adopted for the ground water quality portion of this Action Plan will also allow for the beneficial use of the ground water.

A. Phase I Management Subarea:

1. No allocation of irrigation pumpage is required.

B. Phase II Management Subarea:

1. No allocation of irrigation pumpage is required.

C. Phase III Management Subarea:

1. Certify Irrigated Acres On or before the first December 31 following the Boards establishment of a Phase III Program, the number of irrigated acres owned by or under the control of any ground water user within the management subarea must be confirmed by him or her on forms provided by the District. The Board will certify the number of irrigated acres for each ground water user in accordance with subsection (b) of this rule. Failure by a ground water user to report the number of irrigated acres under his/her ownership or control shall be grounds for the Board to deny any ground water allocation to such user.
 - a. Nothing contained herein shall be construed to prohibit the development of new irrigated acres as long as such new development is in conformity with these rules and regulations.
 - b. The number of irrigated acres shall be determined by the Board after considering the following criteria:
 - (i) Local FSA records, if available.
 - (ii) County Assessors records, if available.
 - (iii) Aerial Photographs.
 - (iv) Any relevant information provided by the ground water user.
 - (v) Any relevant information presented by representatives of the District
2. Well Registration and Certification
 - a. Before January 1st of the year immediately following the Board's establishment of a Phase III Program, each ground water user must register each well within the Management Subarea on forms provided by the District. This requirement is in addition to any requirements imposed by the State of Nebraska.
 - b. Failure by the ground water user to register each of the wells under his control may, at the option of the Board, result in the issuance of a cease and desist order by the District preventing the use of such well.
3. Continuous Well Capacity Monitoring In order for the operator to better manage fertilizer applications and control leaching of nutrients below the root zone, continuous monitoring of the inches of water applied per acre on each field shall be required. If establishment of a Phase III subarea becomes apparent no ground water shall be withdrawn from any well located within a Phase III Management Subarea for irrigation use on land growing irrigated crops prior to having in place and operational, an approved method of continuous monitoring. Approved methods of continuous monitoring shall

include:

- A. Request and obtaining certification, from the District, of the well's pumping capacity, and either: 1) utilize the meter on electric pump, or 2) install an approved hour meter, in order to continuously measure the length of time the well operates during each year; or
- B. Installation of an approved flow meter in order to continuously measure the quantity of water pumped during each year.

Any well withdrawing irrigation water for use on land growing irrigated crops which does not have in place and operational, an approved method of continuous monitoring (Method A or Method B above) shall be in violation and deemed to be an illegal well.

- 4. Where Method A (3. above) is selected as the method of continuously monitoring the well, and where it is necessary to install an hour meter, the hour meter installed on any such well within the management subarea must: 1) be of a type approved by the District, and 2) be mounted off the power unit. The District will maintain a list of hour meters which are known to meet District approval.
 - a. All ground water users shall within 30 days of the installation of a new or a different hour meter on any well located within the management subarea, certify such installation on a form supplied by the District.
 - b. The District staff may periodically check hour meters on a random basis for proper operation.
 - c. When hour meters are removed for servicing or replacement, records of the meter reading shall be kept. Meters may be removed for off season storage.
 - d. Any malfunctioning hour meter must be repaired or replaced within 96 hours (four days) after discovery.
- 5. Wherever Method A (3. above) is not selected as the method of continuously monitoring the well, then Method B (above) shall be required.

Any flow meter installed on any such well within the Management Subarea must: 1) meet the specifications for flow meters adopted by the Board (Attachment 8-B and incorporated herein by reference), and 2) be installed according to the manufacturer's specifications. Flow meters installed before the specifications are adopted by the Board which do not comply with such specifications shall be inspected by a representative of the District and approved for use by the District if such meters are accurate. A well which has no flow meter or which is equipped with a flow meter that does not comply with this rule will not receive a water allocation at any time allocations are established. The District will maintain a list of flow meters which are known to meet District specifications.

- a. All ground water users shall within 30 days of the installation of a new or different flow meter on any well located within the Management Subarea certify such installation on a form supplied by the District.

- b. The District staff shall periodically check flow meters on a random basis for readings and proper operation.
 - c. When flow meters are removed for servicing or replacement, records of the flow meter reading shall be kept. Meters may be removed for off season storage.
 - d. Any malfunctioning flow meter must be repaired or replaced within 96 hours (four days) after discovery.
6. Allocation - Allocation of ground water shall become effective on March 1st of the year following the Board's establishment of a Phase III Program, and shall be for a three year period. A new allocation shall be set at the end of each three year period for each following three year period. The following rules shall apply with respect to allocation. If it is determined that Phase III will be implemented, public hearings will be held by the District to determine allocation rates. Ground water allocations will range between 14 inches/acre/year and 18 inches/acre/year.
- a. Each certified irrigated acre shall be entitled to a predetermined amount (acre inches of ground water per year), with a total three year allocation of a predetermined total amount (acre inches per certified irrigated acre) except as provided in (b) below. More than the predetermined annual amount may be used in one year, but in no event will more than the predetermined total amount be used in a three year period except as provided in (c) and (f) below.
 - b. The District will provide the irrigator with a record of his water use at the end of each irrigation season including the remaining balance of his allocation.
 - c. In the event that more than the three (3) year allocation of acre inches is needed in a three year period, then a ground water user may borrow up to three inches per year per certified irrigated acre additional ground water from the next three year allocation at the rate of twice the actual amount borrowed.
 - d. In the event that a ground water user does not use his entire three (3) year allocation of acre inches for the three year period, the ground water user may accumulate such unused amount for the next three year allocation, up to a maximum of a predetermined amount (acre inches).
 - e. Prior to the expiration of the initial first three years allocation, the Board shall determine subsequent three years allocation on the basis of the information that it has accumulated with respect to the rate of decline, average annual rainfall over the period and increased irrigation.
 - f. The Board shall consider individual hardship cases and situations not covered by these rules and regulations on an individual basis. Such cases shall be decided on equitable principles and shall serve as precedent for other cases of a similar nature.
 - g. Any ground water user who installs a new well within the Management Subarea shall receive a prorated allocation for the remainder of the three year period. This allocation will be based on the number of irrigation season days remaining in the

three year period after installation.

APPENDIX B

SPECIFICATIONS FOR SELECTION, INSTALLATION, AND MAINTENANCE OF WATER FLOW METERS

1. Technical Specifications for Selection of Flow Meters - The following specifications pertain to water flow meters installed in irrigation pipelines and utilized for administration of a groundwater allocation program.

- a. All flow meters shall meet American Water Works Association standards C704-70 as well as other technical specifications stated herein. In case of conflict, the specifications herein shall apply.
- b. Meters shall be of the velocity propeller type, and made of noncorrosive materials. The propeller shall rotate on a minimum of two bearings. Bearings shall be made of stainless steel or equivalent noncorrosive material. The propeller should have a diameter not less than 70% of the meter size. With flows of less than 500 gallons per minute, meters with small propellers may not be accurate.
- c. The meter registry shall have a visual, volume recording totalizer which shall record in acre inches or gallons. (An Acre inch is recommended over gallons.) The registry shall be adequately protected from the elements. The totalizer shall have sufficient capacity to record the quantity of water diverted from each well or combination of sources for multiple well installation during the period of one year. The totalizer shall be direct reading and the multiplier shall be clearly indicated. The meter shall also have a rate of flow indicator showing:
 - 1. Instantaneous flow in gallons per minute (GPM), or
 - 2. A sweep hand indicator from which rate of flow can be determined by timing.
- d. The registry shall be provided with a method for sealing with a wire or lead seal to prevent unauthorized tampering or removal.
- e. The meter totalizer shall have a rated accuracy of plus or minus two percent of actual flow for all rates of flow within the range of flow for which the meter is designed when installed in accordance with the manufacturer's specifications. The meter used shall be capable of accurately registering the expected operating range of discharge.
- f. A meter shall have a pressure rating to fit the expected application and shall be used only within its designed pressure range.
- g. The meter size, serial number and 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 one-thousandth (0.001) of an inch.

2. Standard for Flow Meter Installation

- a. The meter shall be installed in accordance with the manufacturer's specifications and in such a manner that there shall be a full pipe flow of water at all times while water is being pumped. Full pipe flow may be obtained by using butterfly valves or by raising the pipe beyond the meter to a point above the level of the meter.
- b. The meter shall be placed in the pipe not less than five pipe diameters downstream from any valves, elbows or other obstructions which might create a turbulent or jetting flow, or as otherwise recommended by the manufacturer. There shall also be at least one pipe diameter of unobstructed flow on the downstream side of the meter. Straightening vanes shall be installed in the pipe in the manner recommended by the manufacturer of the meter, if the above conditions cannot be met.

- c. It is recommended that provisions be made for future testing of meters including such provisions as:
 - 1. Using a uniform or standard weld on saddle mount meter to allow for easy removal and interchange of meters;
 - 2. An open discharge pipe which would allow installing a testing meters; or
 - 3. Any other means which would permit the easy installation of a testing meter or other electronic measuring devices.
 - d. A single meter may be installed in such a manner as to measure the combined flow from two or more wells.
 - e. The meter propeller shaft shall be positioned parallel to the pipe and aligned with the center line of the pipe.
3. Recommended Operation and Maintenance of Flow Meters
- a. Meters should be kept clear of debris, vegetative growth or any other material which could impede proper operation of the meter.
 - b. Meters should be stored in such a manner that will prevent freezing or damage by rodents and livestock.

APPENDIX C

GWMS Designations and Delineation

The Deuel County GWMS is recognized as two separate geographic regions and delineated for various levels of controls or requirements. Based on the average nitrate-nitrogen levels from previous studies and monitoring activities, the entire Lodgepole Creek Valley Subarea is included in Management Phase I, and designated as the "Lodgepole Valley GWMS". The Lodgepole Valley GWMS includes the town of Chappell, Nebraska. Management Phase II encompasses all of the South Platte River Subarea, and is designated as the "South Platte Valley GWMS". Portions of Big Springs, Nebraska is included in this GWMS.

The Ground Water Management Subareas include the following boundaries (Figure 8-28):

1. Geographic Extent:

a. **Lodgepole Valley Ground Water Management Subarea**

Sections: 7, 18; and portions of 19, T12N, R44W, Deuel County, Nebraska.

Sections: 1, 2, 11, 12, 13; and portions of 24, T12N, R45W, Deuel County, Nebraska.

Section: 31, T13N, R44W, Deuel County, Nebraska.

Sections: 7, 15, 16, 17, 18, 20, 21, 22, 23, 24, 25, 26, 36, T13N, R45W, Deuel County, Nebraska.

Sections: 1, 2, 3, 4, 11, 12, 13, T13N, R46W, Deuel County, Nebraska.

Section: 33, T14N, R46W, Deuel County, Nebraska.

b. **South Platte Valley Ground Water Management Subarea**

Sections: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18; and portions of 19, 20, 21, 22, 23, 24, T12N, R42W, Deuel County, Nebraska.

Sections: 12, 13, 14, 15, 16, 17, 18; and portions of 19, 20, 21, 22, 23, 24, T12N, R43W, Deuel County, Nebraska.

Sections: 13; and portions of 24, T12N, R44W, Deuel County, Nebraska.

Section: 31, T13N, R41W, Deuel County, Nebraska.

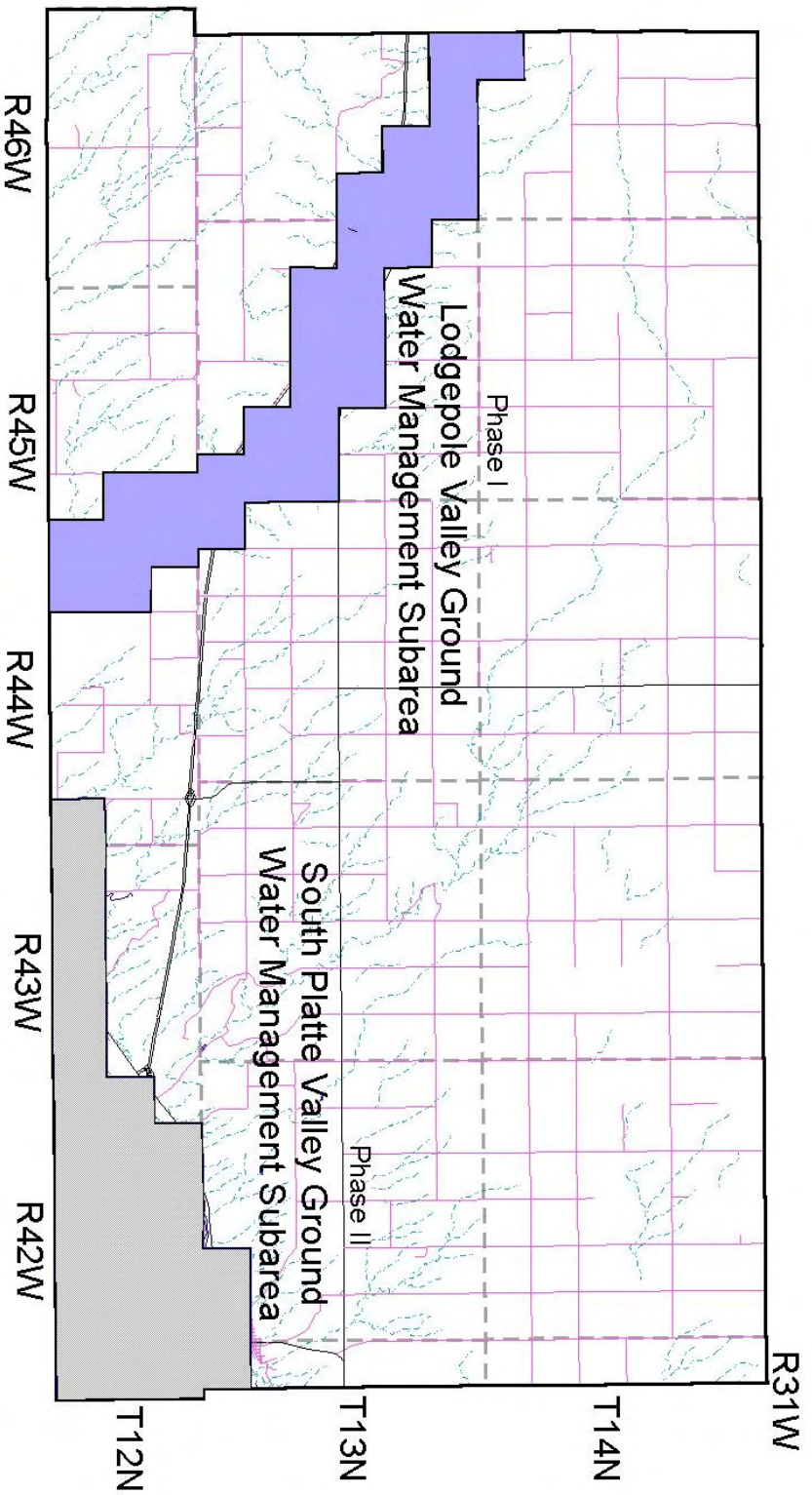
Sections: 35, and 36, T13N, R42W, Deuel County, Nebraska.

2. Stratigraphic Extent: The GWMSs will include all geologic strata within the boundaries, beginning with the sediments from ground surface downward through all aquifer units supplying potable water. This includes Quaternary and Cenozoic deposits as defined by the CSD-UNL.

Deuel County Ground Water Management Subareas

South Platte Natural Resources District

Appendix D



APPENDIX E

WATER, SOIL, AND MANURE SAMPLING/ANALYZING ORGANIZATIONS

Organizations	Water		Soil		Manure		Representative	Comments
	Sample	Analyze	Sample	Analyze	Sample	Analyze		
Midwest Laboratories, Inc. 13611 B St. Omaha, NE 68144-3693 (402)334-7770	S.K.	YES	S.K.	YES	S.K.	YES	Bud Gillespie Route 2 Box 123 Broadwater, NE 69125 308-377-2390	EPA Approved. Sample kits available.
	F.S.	NO	F.S.	NO	F.S.	NO		
Servi-Tech Laboratory 1602 Park W. Dr. P.O. Box 169 Hastings, NE 68902 (402)463-3522	S.K.	YES	S.K.	YES	S.K.	YES	Jim Motzkus Field Representative P.O. 373 Chappell, NE 69129 (308)874-2711 (308)249-3167- Mobile	EPA Approved Consultant. Does get into Chappell area.
	F.S.	YES	F.S.	YES	F.S.	YES		
Far-Mor COOP Inc 1433 Illinois St Sidney, NE 69162 (308)254-5541	S.K.	YES	S.K.	YES	S.K.	YES	Jack Gabel, Fert.Mgr 1433 Illinois St. Sidney, NE 69162 (308)254-2563	Utilizes Midwest Labs
	F.S.	NO	F.S.	YES	F.S.	NO		
UNL-Agronomy Dept. Soil Testing 139 Keim Hall Lincoln, NE 68583-0916 (402)472-1571	S.K.	YES	S.K.	YES	S.K.	YES	Kenneth D Frank Director of Soil and Plant Analytical Lab 139 Keim Hall Lincoln, NE 68583-0916 (402)472-1571	Servicing Lab.
	F.S.	NO	F.S.	NO	F.S.	NO		
NE Dept of Health Laboratories 3701 S. 14th St P.O. Box 2755 Lincoln, NE 68502 (402)471-2122	S.K.	YES	S.K.	NO	S.K.	NO	Howard Isaac, Spvsr of Env. Health Sec. P.O. Box 2755 Lincoln, NE 68502 (402)471-2122	Contact lab to obtain sampling kits.
	F.S.	NO	F.S.	NO	F.S.	NO		
HWS Technologies, Inc. Lincoln Office 825 J St, Box 80358 Lincoln, NE 68501 (402)479-2200	S.K.	YES	S.K.	YES	S.K.	YES	Paul K Mignon, Mgr Analytical Lab Lincoln Office 825 J St, Box 80358 Lincoln, NE 68501 (402)479-2200	EPA Approved.
	F.S.	NO	F.S.	NO	F.S.	NO		
Olson's Agricultural Laboratory Inc. 210 East 1st St P.O. Box 370 McCook, NE 69001 (308)345-3670	S.K.	YES	S.K.	YES	S.K.	YES	Bob Olson, Pres. 210 East 1st St P.O. Box 370 McCook, NE 69001 (308)345-3670	Servicing Lab. Knows Agronomists in area.
	F.S.	NO	F.S.	NO	F.S.	NO		

Ward Labs Inc 4007 Cherry Avenue P.O. Box 788 Kearney, NE 68848-0788 (308) 234-2418	S.K. F.S.	YES NO	S.K. F.S.	YES. NO	S.K. F.S.	YES NO	Raymond C. Ward, President 4007 Cherry Avenue P.O. Box 788 Kearney, NE 68848-0788 (308) 234-2418	Servicing Lab Works with several dealers & crop consultants in Panhandle.
Inter-American Laboratories P.O. Box 94 W. Hwy 30 Cozad, NE 69130 1-800-658-3146	S.K. F.S.	YES YES	S.K. F.S.	YES YES	S.K. F.S.	YES YES	E.C. Cherian, Ph.D President P.O. Box 94 W. Hwy 30 Cozad, NE 69130 (308) 784-4011	Consultants in Ogallala. Can go to Big Springs Area EPA Approved
Harris Laboratories 624 Peach St Lincoln, NE 68502 (402)476-2811	S.K. F.S.	YES NO	S.K. F.S.	YES NO	S.K. F.S.	NO NO	Jeff Frack, Sprvsr 624 Peach St Lincoln, NE 68503 (402) 476-2811	EPA Approved.
Farmers COOP Big Springs Box 476, 105 Pine St Big Springs, NE 69122 (308)889-3461	S.K. F.S.	YES YES	S.K. F.S.	YES YES	S.K. F.S.	YES NO	Randy Shaw Farmers COOP Box 476, 105 Pine Big Springs, NE 69122 (308)889-3461	Utilizes Ward Labs.
Platte Valley Crop Consulting 1105 W 10th St Ogallala, NE 69153 (308)284-2757 (308)289-0469 Mobile	S.K. F.S.	YES YES	S.K. F.S.	YES YES	S.K. F.S.	YES YES	Dave DeVries 1105 W 10th St Ogallala, NE 69153 (308)284-2757 (308)289-0469 Mobile	Utilizes Olson Labs
Farmers Elevator Co. P.O. Box 526 Chappell, NE 69129 (308)874-2245 (800)633-5803	S.K. F.S.	NO NO	S.K. F.S.	YES YES	S.K. F.S.	NO NO	Ervin Wilds Farmers Elevator PO Box 526 Chappell, NE 69129 (800)633-5803	Utilizes Servi- Tech Labs.
Farmers Elevator Co. 701 S. Pacific Ovid, CO 80744 (303)463-5484 (800)633-5805	S.K. F.S.	NO NO	S.K. F.S.	YES YES	S.K. F.S.	NO NO	Greg Jones Farmers Elevator 701 S. Pacific Ovid, CO 80744 (800)633-5805	Utilizes Servi- Tech Labs
Hall County Health Dept. Lab 105 East 1st St. Grand Island, NE 68801-6093 (308) 385-5175	S.K. F.S.	YES NO	S.K. F.S.	NO NO	S.K. F.S.	NO NO	Water sampling kits available from local County Extension Office.	