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CHARLES S. MUSSON
W. RANDALL JONES
CHRISTIAN L. JUCKETT

PARALEGAL
MARY M. EMBRY

July 27, 2005

Ms. Beth O'Donnell
Executive Director
Public Service Commission
P.O. Box 615
Frankfort, Kentucky 40602

RECEIVED

JUL 28 2005

PUBLIC SERVICE
COMMISSION

Re: Todd County Water District - Public Service Commission Application for the Water
System Improvements Project

Case No. 2005-00316

Dear Ms. O'Donnell:


Enclosed please find the original and ten (10) copies of the Application of the Todd County Water District for a Certificate of Public Convenience and Necessity to construct and finance a water improvement project pursuant to KRS 278.023.

Also enclosed are eleven (11) copies of the exhibits required, with the exception of the Preliminary and Final Engineering Reports two (2) are enclosed.

If you need any additional information or documentation, please let us know.

Sincerely,

Rubin & Hays

By 
W. Randall Jones

WRJ:ilm
Enclosures
cc: Distribution List

DISTRIBUTION LIST

Account No. 404.0000

Re: Todd County Water District Waterworks Revenue Bonds, Series 2005

Mr. Kenneth Slone
State Director
Rural Development
771 Corporate Drive, Suite 200
Lexington, Kentucky 40503-5477

Telephone: (859) 224-7336

Mr. Jerry M. Cloyd
Rural Development
320 B Traylor Street
Princeton, Kentucky 42445

Telephone: (270) 365-6530
Fax: (270) 365-7842

Ms. Kathy Conyey
Todd County Water District
P.O. Box 520
Elkton, Kentucky 42220

Telephone: (270) 265-2229
Fax: (270) 265-2035

Mr. Chris Wilcutt
McGhee Engineering, Inc.
202 Ewing Street
P.O. Box 267
Guthrie, Kentucky 42234-0267

Telephone: (270) 483-9985
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Harold M. Johns, Esq.
12 Public Square
P.O. Box 746
Elkton, Kentucky 42220-0746

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W. Randall Jones, Esq.
Rubin & Hays
Kentucky Home Trust Building
450 South Third Street
Louisville, Kentucky 40202

Telephone: (502) 569-7534
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COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

RECEIVED

JUL 28 2005

PUBLIC SERVICE
COMMISSION

In the Matter of:

**THE APPLICATION OF TODD COUNTY)
WATER DISTRICT FOR A CERTIFICATE OF)
PUBLIC CONVENIENCE AND NECESSITY)
TO CONSTRUCT AND FINANCE PURSUANT)
TO KRS 278.023.)**

Case No. 2005-00316

A P P L I C A T I O N

This Application of the Todd County Water District ("Applicant"), respectfully shows:

1. That Applicant is a water district created and existing under and by virtue of Chapter 74 of the Kentucky Revised Statutes.
2. That the post office address of Applicant is:

Todd County Water District
c/o Dr. George Brown, Chairman
P.O. Box 520
Elkton, Kentucky 42220
3. That Applicant, pursuant to the provisions of KRS 278.020 and 278.023, seeks (i) a Certificate of Public Convenience and Necessity permitting Applicant to construct a water project, consisting of extensions, additions, and improvements (the "Project") to the existing water system of Applicant; and (ii) an Order approving the proposed plan of financing said Project.
4. That the Project consists of the construction and installation of (i) approximately 24 miles of water line on 11 rural roadway; (ii) a 250,000 gallon elevated water storage tank; (iii) a new booster pump and meter station; and (iv) telemetry upgrades and additions.
5. That Applicant proposes to finance the construction of the Project through (i) the issuance of \$1,100,000 of its Waterworks Revenue Bonds; and (ii) a Rural Development ("RD") Grant in the amount of \$700,000. Applicant has a commitment from RD to purchase said \$1,100,000 of bonds maturing over a 40-year period, at an interest rate of not exceeding 4.375% per annum, as set out in the RD Letter of Conditions filed herewith as an Exhibit.

6. That Applicant does not contemplate having the Project constructed with any deviation from minimum construction standards of this Public Service Commission.

7. That Applicant files herewith the following Exhibits pursuant to 807 KAR 5:069 in support of this Application:

- A. Copy of RD Letter of Conditions.
- B. Copy of RD Letter of Concurrence in Contract Award.
- C. Copy of Preliminary and Final Engineering Reports.
- D. Certified statement from the Chairman of Applicant, based upon statements of the Engineers for Applicant, concerning the following:
 - (1) The proposed plans and specifications for the Project have been designed to meet the minimum construction and operating requirements set out in 807 KAR 5:066, Section 4(3) and (4); Section 5(1); Sections 6 and 7; Section 8(1) through (3); Section 9(1) and Section 10;
 - (2) All other state approvals or permits have already been obtained;
 - (3) The existing rates of Applicant shall produce the total revenue requirements set out in the engineering reports; and
 - (4) Setting out the dates when it is anticipated that construction will begin and end.

8. That the foregoing constitutes the documents necessary to obtain the approval of the Kentucky Public Service Commission in accordance with Section 278.023 of the Kentucky Revised Statutes and in accordance with the "Filing Requirements" specified in 807 KAR 5:069.

WHEREFORE, Applicant, the Todd County Water District, asks that the Public Service Commission of the Commonwealth of Kentucky grant to Applicant the following:

- a. A Certificate of Public Convenience and Necessity permitting Applicant to construct a water project consisting of extensions, additions, and improvements to the water system of Applicant.
- b. An Order approving the financing arrangements made by Applicant, viz., the issuance of (i) \$1,100,000 of Todd County Water District Waterworks Revenue Bonds at an interest rate of not exceeding 4.375% per annum; and (ii) a Rural Development grant in the amount of \$700,000.

TODD COUNTY WATER DISTRICT

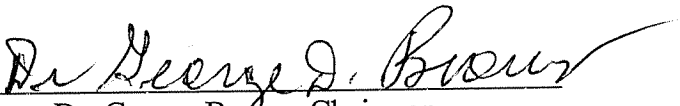
By: *Dr. George D. Brou*
Chairman
Board of Water Commissioners

W. Randall Jones
W. Randall Jones, Esq.
Rubin & Hays
Counsel for Applicant
Kentucky Home Trust Building
450 South Third Street
Louisville, Kentucky 40202
(502) 569-7525

COMMONWEALTH OF KENTUCKY)
) SS:
COUNTY OF TODD)

The undersigned, Dr. George Brown, being duly sworn, deposes and states that he is the Chairman of the Board of Commissioners of the Todd County Water District, Applicant, in the above proceedings; that he has read the foregoing Application and has noted the contents thereof; that the same is true of his own knowledge, except as to matters which are therein stated on information or belief, and as to those matters, he believes same to be true.


IN TESTIMONY WHEREOF, witness the signature of the undersigned on this July 26, 2005.



Dr. George Brown, Chairman
Todd County Water District

Subscribed and sworn to before me by Dr. George Brown, Chairman of the Board of Commissioners of the Todd County Water District, on this July 26, 2005.

My Commission expires: March 8, 2009.



Notary Public
In and for said County and State



JUN 9 2004

**United States Department of Agriculture
Rural Development
Kentucky State Office**

June 7, 2004

Dr. George Brown, Chairman
Todd County Water District
P.O. Box 520
Elkton, Kentucky 42220

Dear Dr. Brown:

This letter establishes conditions which must be understood and agreed to by you before further consideration may be given to the application. The loan and/or grant will be administered on behalf of the Rural Utilities Service (RUS) by the State and Area office staff of USDA Rural Development. Any changes in project cost, source of funds, scope of services or any other significant changes in the project or applicant must be reported to and approved by USDA Rural Development, by written amendment to this letter. Any changes not approved by Rural Development shall be cause for discontinuing processing of the application. It should also be understood that Rural Development is under no obligation to provide additional funds to meet an overrun in construction costs.

This letter is not to be considered as loan and/or grant approval or as a representation as to the availability of funds. The docket may be completed on the basis of a RUS loan not to exceed \$1,100,000 and a RUS grant not to exceed \$700,000.

If Rural Development makes the loan, the interest rate will be the lower of the rate in effect at the time of loan approval or the rate in effect at the time of loan closing, unless the applicant otherwise chooses. The loan will be considered approved on the date a signed copy of Form RD 1940-1, "Request for Obligation of Funds," is mailed to you.

Please complete and return the attached Form RD 1942-46, "Letter of Intent to Meet Conditions," if you desire that further consideration be given to your application.

The "Letter of Intent to Meet Conditions" must be executed within three weeks from the date of this letter or it becomes invalid unless a time extension is granted by Rural Development.

If the conditions set forth in this letter are not met within 240 days from the date hereof, Rural Development reserves the right to discontinue the processing of the application.

In signing Form RD 1942-46, "Letter of Intent to Meet Conditions," you are agreeing to complete the following as expeditiously as possible:

771 Corporate Drive • Suite 200 • Lexington, KY 40503
Phone: (859) 224-7300 • Fax: (859) 224-7425 • TDD: (859) 224-7422 • Web: <http://www.rurdev.usda.gov/ky>

Committed to the future of rural communities.

"USDA is an equal opportunity provider, employer and lender."
To file a complaint of discrimination write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice or TDD).

1. Number of Users and Their Contribution:

There shall be 2,910 water users, of which 2,850 are existing users and 60 are new users. The Area Director will review and authenticate the number of users prior to advertising for construction bids. No contribution is required from the Water District.

1a. Grant Agreement:

Attached is a copy of RUS Bulletin 1780-12, "Water and Waste System Grant Agreement," for your review. You will be required to execute a completed form at the time of grant closing.

1b. Drug-Free Work Place:

Prior to grant approval, the Water District will be required to execute Form AD-1049, "Certification Regarding Drug-Free Workplace Requirements (Grants) Alternative I - For Grantees Other Than Individuals."

2. Repayment Period:

The loan will be scheduled for repayment over a period not to exceed 40 years from the date of the bond. Principal payment will not be deferred for a period in excess of two years from the date of the bond. Payments will be in accordance with applicable KRS, which requires interest to be paid semi-annually (January 1st and July 1st) and principal will be due on or before the first of January. Rural Development may require the Water District to adopt a supplemental payment agreement providing for monthly payments of principal and interest so long as the bond is held or insured by RUS. Monthly payments will be approximate amortized installments.

3. Recommended Repayment Method:

Payments on this loan can be made using the Preauthorized Debit (PAD) payment method. This procedure eliminates the need for paper checks and ensures timely receipt of RD loan payments. To initiate PAD payments, Form SF 5510, "Authorization Agreement for Preauthorized Payments," should be signed by the District to authorize the electronic withdrawal of funds from your designated bank account on the exact installment payment due date. The Area Director will furnish the necessary forms and further guidance on the PAD procedure.

4. Funded Depreciation Reserve Account:

The Water District will be required to deposit \$500.00 per month into a "Funded Depreciation Reserve Account" until the account reaches \$60,000. The deposits are to be resumed any time the account falls below the \$60,000.

The required monthly deposits to the Reserve Account and required Reserve Account levels are in addition to the requirements of the Water District's prior bond resolutions.

The monthly deposits to the Reserve Account are required to commence with the first month of the first full fiscal year after the facility becomes operational.

5. Security Requirements:

A pledge of gross water revenue will be provided in the Bond Resolution. Bonds shall rank on a parity with existing bonds.

6. Land Rights and Real Property:

The Water District will be required to furnish satisfactory title, easements, etc., necessary to install, maintain and operate the facility to serve the intended users. The pipelines will be on private rights-of-way where feasible. Easements and options are to be secured prior to advertising for construction bids.

7. Organization:

The Water District will be legally organized under applicable KRS which will permit them to perform this service, borrow and repay money.

8. Business Operations:

The Water District will be required to operate the system under a well-established set of resolutions, rules and regulations. A budget must be established annually and adopted by the Water District after review by Rural Development. At no later than loan pre-closing, the Water District will be required to furnish a prior approved management plan to include, as a minimum, provisions for management, maintenance, meter reading, miscellaneous services, billing, collecting, bookkeeping, making and delivering required reports and audits.

9. Accounts, Records and Audits:

The Water District will be required to maintain adequate records and accounts and submit annual budgets and year-end reports (annual audits) in accordance with subsection 1780.47 of RUS Instruction 1780 and RUS Staff Instruction 1780-4, a copy of which is enclosed.

10. Accomplish Audits for Years in Which Federal Financial Assistance is Received:

The Water District will accomplish audits in accordance with OMB Circular A-133, during the years in which federal funds are received. The Water District will provide copies of the audits to the Area Office and the appropriate Federal cognizant agency as designated by OMB Circular A-133.

11. Insurance and Bonding:

The following insurance and bonding will be required:

- A. Adequate Liability and Property Damage Insurance including vehicular coverage, if applicable, must be obtained and maintained by the Water District. The Water District should obtain amounts of coverage as recommended by its attorney, consulting engineer and/or insurance provider.

- B. Worker's Compensation - The Water District will carry worker's compensation insurance for employees in accordance with applicable state laws.
- C. Fidelity Bond - The Water District will provide Fidelity Bond Coverage for all persons who have access to funds. Coverage may be provided either for all individual positions or persons, or through "blanket" coverage providing protection for all appropriate employees and/or officials. The amount of coverage required for all RUS loans is \$332,000.
- D. Real Property Insurance - The Water District will obtain and maintain adequate fire and extended coverage on all structures including major items of equipment or machinery located in the structures. The amounts of coverage should be based on recommendations obtained by the Water District from its attorney, consulting engineer and/or insurance provider. Subsurface lift stations do not have to be covered except for the value of electrical and pumping equipment therein.
- E. Flood Insurance - The Water District will obtain and maintain adequate coverage on any facilities located in a special flood and mudslide prone areas.

12. Planning and Performing Development:

- A. The engineer should not be authorized to commence work on final plans and specifications until a determination has been made that the project can be planned and constructed within the estimated cost shown in paragraph "22" of this letter. The engineer may then proceed to develop final plans and specifications to be completed no later than 210 days from this date, and prepare bid documents. The Area Director is prepared to furnish the necessary guide to follow so as to keep the project plans and documents within our guidelines and requirements. The project should not be advertised for construction bids until all easements and enforceable options have been obtained, and total funds are committed or available for the project.
- B. The following documents will be submitted to Rural Development for review and must be concurred in by Rural Development prior to advertisement for construction bids:
 - 1. Final plans, specifications and bid documents.
 - 2. Applicant's letter on efforts to encourage small business and minority-owned business participation.
 - 3. Legal Service Agreements.
 - 4. Engineering Agreements.

Revision in these documents will be subject to Rural Development concurrence. Any agreements, contracts, etc. not reviewed and approved by Rural Development will not be eligible for payment from project funds or revenues from facilities financed by this Agency.

Prior to receipt of an authorization to advertise for construction bids, the Water District will obtain advance clearance from Bond Counsel regarding compliance

with KRS 424 pertaining to publishing of the advertisement for construction bids in local newspapers and the period of time the notice is required to be published.

13. Compliance with Section 504 of the Rehabilitation Act of 1973:

The Water District will be required to comply with Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), in order to make sure no handicapped individual, solely by reason of their handicap, is excluded from participation in the use of the water system, be denied the benefits of the water system, or be subjected to discrimination.

14. Closing Instructions:

The Office of General Counsel, our Regional Attorney, will be required to write closing instructions in connection with this loan. Conditions listed therein must be met by the Water District.

15. Compliance with Special Laws and Regulations:

The Water District will be required to conform with any and all state and local laws and regulations affecting this type project.

16. System Operator:

The Water District is reminded that the system operator must have an Operator's Certificate issued by the State.

17. Prior to Pre-Closing the Loan, the Water District Will Be Required to Adopt:

- A. Form RUS Bulletin 1780-27, "Loan Resolution (Public Bodies)."
- B. Form RD 400-1, "Equal Opportunity Agreement."
- C. Form RD 400-4, "Assurance Agreement."
- D. Form AD-1047, "Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transaction."
- E. Form RD 1910-11, "Applicant Certification Federal Collection Policies for Consumer or Commercial Debts."
- F. RD Instruction 1940-Q, Exhibit A-1, "Certification for Contracts, Grants and Loans."

The Water District must offer the opportunity for all residents in the service area to become users of the facilities regardless of race, creed, color, religion, sex, national origin, marital status, physical or mental handicap or level of income.

18. Refinancing and Graduation Requirements:

The Water District is reminded that if at any time it shall appear to the Government that the Water District is able to refinance the amount of the RUS indebtedness then outstanding, in whole or in part, by obtaining a loan from commercial sources at reasonable rates and terms, upon the request of the Government, the Water District will apply for and accept such loan in sufficient amount to repay the Government.

19. Commercial Interim Financing:

The Water District will be required to use commercial interim financing for the project during construction for the RUS loan portion of the financing, if available at reasonable rates and terms.

Before the loan is closed, the Water District will be required to provide Rural Development with statements from the contractor, engineer and attorneys that they have been paid to date in accordance with their contract or other agreements and, in the case of the contractor, that he has paid his suppliers and sub-contractors.

20. Disbursement of Project Funds:

A construction account for the purpose of disbursement of project funds (RUS) will be established by the Water District prior to start of construction. The position of officials entrusted with the receipt and disbursement of RUS project funds will be covered by a "Fidelity Bond," with USDA Rural Development as Co-Obligee, in the amount of construction funds on hand at any one time during the construction phase.

During construction, the Water District shall disburse project funds in a manner consistent with subsection 1780.76 (e) of RUS Instruction 1780. Form RD 1924-18, "Partial Payment Estimate," or similar form approved by Rural Development, shall be used for the purpose of documenting periodic construction estimates, and shall be submitted to Rural Development for review and acceptance. Prior to disbursement of funds by the Water District, the Board of Directors shall review and approve each payment estimate. All bills and vouchers must be approved by Rural Development prior to payment by the Water District.

Form RD 440-11, "Estimate of Funds Needed for 30-Day Period Commencing _____," will be prepared by the Water District and submitted to Rural Development in order that a periodic advance of federal cash may be requested.

Monthly audits of the Water District's construction account records shall be made by Rural Development.

21. Disbursement of Grant Funds:

The RUS funds will be advanced as they are needed in the amount(s) necessary to cover the RUS proportionate share of obligations due and payable by the Water District. Grant funds, upon receipt, must be deposited in an interest bearing account in accordance with 7 CFR part 3016 (as applicable). Interest earned on grant funds in excess of \$100 (as applicable) per year will be submitted to RUS at least quarterly.

22. Cost of Facility:

Breakdown of Costs:

Development	\$ 1,420,000
Land and Rights	5,000
Legal and Administrative	25,000
Engineering	188,000
Interest	20,000
Contingencies	<u>142,000</u>
TOTAL	\$ 1,800,000

Financing:

RUS Loan	\$ 1,100,000
RUS Grant	<u>700,000</u>
TOTAL	\$ 1,800,000

23. Debt Collection Improvement Act (DCIA) of 1996:

The Debt Collection Improvement Act (DCIA) of 1996 requires that all federal payments after January 1, 1999, must be made by Electronic Funds Transfer/Automated Clearing House (EFT/ACH). Borrowers receiving payments by EFT will have funds directly deposited to a specified account at a financial institution with funds being available to the recipient on the date of payment. The borrower should complete Form SF-3881, "Electronic Funds Transfer Payment Enrollment Form," for each account where funds will be electronically received. The completed form(s) must be received by Rural Development at least thirty (30) days prior to the first advance of funds.

24. Use of Remaining Project Funds:

After providing for all authorized costs, any remaining project funds will be considered to be RUS grant funds and refunded to RUS. If the amount of unused grant funds exceeds the grant, that part would be RUS loan funds.

25. Rates and Charges:

Rates and charges for facilities and services rendered by the Water District must be at least adequate to meet cost of maintaining, repairing and operating the water system and meeting required principal and interest payments and the required deposits to debt service and/or depreciation reserve.

Water rates will be at least:

First	2,000	gallons @ \$	17.90 - Minimum Bill.
Next	8,000	gallons @ \$	9.38 - per 1,000 gallons.
Next	10,000	gallons @ \$	8.35 - per 1,000 gallons.
Next	20,000	gallons @ \$	7.33 - per 1,000 gallons.
All Over	40,000	gallons @ \$	5.89 - per 1,000 gallons.

26. Water Purchase Contract:

The Water District will submit a Water Purchase Contract for approval by Rural Development before advertising for construction bids. If the contract is not on Form RD 442-30, "Water Purchase Contract," the contract will require approval by our Regional Attorney. The contract must meet the requirements of subsection 1780.62 of RUS Instruction 1780.

27. Floodplain Construction:

The Water District will be required to pass and adopt a Resolution or amend its By-Laws whereby the Water District will deny any water service to any future customer wishing to build on or develop property located within a designated floodplain. If a customer or developer requests service for construction in a designated floodplain, the customer or developer must provide evidence and a justification for approval by the Water District and Rural Development officials that there are no other alternatives to construction or development within the designated floodplain. The community must be a participant in the National Flood Insurance Program (NFIP) and the customer or developer must obtain the required permits prior to the tap on restrictions being waived.

28. Mitigation Measures:

- A. The project shall be in compliance with all requirements noted in the Kentucky Department for Local Government letter dated June 4, 2003, from Mr. Ronald A. Cook, Manager.
- B. The design and construction shall be in compliance with the requirements of the U.S. Fish and Wildlife Service as requested by letter dated November 30, 2003, and signed by Virgil Lee Andrews, Jr., Field Supervisor.
- C. The line design and construction shall be accomplished in a way that will leave flood plains and farmland without affect after construction is complete. The Army Corps of Engineers Nationwide Permit No. 12 applies to all floodplain and wetland utility line construction.
- D. The design and construction shall be in compliance with all local, state and federal environmental statutes, regulations and executive orders applicable to the project.

29. Final Approval Conditions:

Final approval of this assistance will depend on your willingness, with the assistance of all your co-workers, to meet the conditions of this letter in an orderly and systematic manner. Then too, final approval will depend on funds being available.

If you desire to proceed with your application, the Area Director will allot a reasonable portion of time to provide guidance in application processing.

Sincerely,


KENNETH SLONE
State Director

Enclosures

cc: Area Director - Princeton, Kentucky
Rural Development Manager - Elkton, Kentucky
Pennyrile ADD - Hopkinsville, Kentucky
Harold M. Johns - Elkton, Kentucky
✓Rubin and Hays - Louisville, Kentucky
McGhee Engineering, Inc. - Guthrie, Kentucky
PSC - ATTN: Bob Amato - Frankfort, Kentucky



United States Department of Agriculture
Rural Development
Kentucky State Office

July 27, 2005

SUBJECT: Todd County Water District
Clifty Tank and System Extensions
Contract Award Concurrence


TO: Area Director
Princeton, Kentucky

Based on the bids received and the recommendation of the consulting engineer along with the actions of the Water District Board, Rural Development concurs in the award of the selected bidder for Contract 1, Ross Construction, in the amount of \$896,199.68, and the selected bidder for Contract 2, Caldwell Tanks, in the amount of \$388,369.00.

If you have any questions, please contact Julie Anderson, State Engineer, at (859) 224-7348.

for 
KENNETH STONE
State Director
Rural Development

cc: McGhee Engineering, Inc.
Cuthire, Kentucky

 Randy Jones
Louisville, Kentucky

771 Corporate Drive • Suite 200 • Lexington, KY 40503
Phone: (859) 224-7300 • Fax: (859) 224-7425 • TDD: (859) 224-7422 • Web: <http://www.rurdev.usda.gov/ky>

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**CERTIFICATE OF CHAIRMAN OF THE TODD COUNTY WATER DISTRICT,
AS TO STATEMENT REQUIRED BY SECTION 1(5)(a) OF 807 KAR 5:069**

I, Dr. George Brown, hereby certify that I am the duly qualified and acting Chairman of the Todd County Water District, and that said District is in the process of arranging to finance the construction of extensions, additions and improvements to the water system of the District (the "Project"), in cooperation with McGhee Engineering, Inc., Guthrie, Kentucky, the Engineers for the District (the "Engineers").

Based on information furnished to me by said Engineers for the District, I hereby certify as follows:

1. That the proposed plans and specifications for the Project have been designed to meet the minimum construction and operating requirements set out in 807 KAR 5:066 Section 4(3) and (4); Section 5(1); Sections 6 and 7; Section 8(1) through (3); Section 9(1) and Section 10.
2. That all other state approvals and/or permits have already been obtained.
3. That the existing rates of the District are contemplated to produce total revenue requirements set out in the Engineering Reports prepared by such Engineers and filed with the Public Service Commission.
4. That it is now contemplated that construction of the Project will begin on or about September 6, 2005, and will end on or about September 1, 2006.

IN TESTIMONY WHEREOF, witness my signature this July 26, 2005.



Chairman
Todd County Water District

STATE OF KENTUCKY)
) SS
COUNTY OF TODD)

Subscribed and sworn to before me by Dr. George Brown, Chairman of the Board of Commissioners of the Todd County Water District, on this July 26, 2005.



Notary Public
In and For Said State and County

RECEIVED

JUL 28 2005

PUBLIC SERVICE
COMMISSION

Case No. 2005-00316

**FINAL ENGINEERING REPORT
TODD COUNTY WATER DISTRICT**

SYSTEM EXTENSION PROJECT

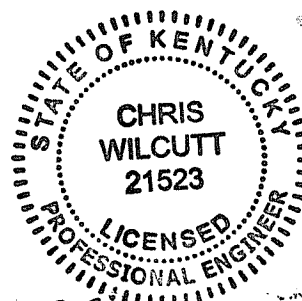
Todd County, Kentucky

prepared for the:

Todd County Water District
P.O. Box 520
Elkton, KY 42220
(270) 265-2229

prepared by:

McGhee Engineering, Inc.
202 Ewing Street
P.O. Box 267
Guthrie, KY 42234
(270) 483-9985



Chris Wilcutt
7-8-05

July 2005

Final Engineering Report
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Todd County Water District System Extension Project

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1.0 INTRODUCTION

The Todd County Water District (TCWD) was chartered in 1971 to supply potable water to rural residents of Todd County, Kentucky. The District is governed by five board members, and is regulated by the Kentucky Public Service Commission. The Board includes three members from Todd County and two from Logan County because of the significant number of customers served by the TCWD in the Lake Malone area of Logan County. Todd County has authority to plan, design, finance, construct, operate, replace and maintain the distribution facilities within its service area.

The Todd County water system is comprised of over 362 miles of water distribution lines and four water storage tanks with a total capacity of 530,800 gallons, all of which serves approximately 2,787 customers in rural Todd County. As of Spring 2003, the Todd County Water District began to purchase all of its treated water from the recently completed water system of the Logan Todd Regional Water Commission (LTRWC). The Commission's water treatment facility is rated at 10 million gallons per day, and its distribution system consists of nearly 85 miles of pipeline and three storage tanks totaling 3,500,000 gallons in capacity. Since going online with the Commission, the average daily wholesale water demand within the Todd County system has averaged 545,000 gallons per day, which is considerably above the 406,000 gpd projected by LTRWC on the basis of historical data. Todd County has three meter stations with the Commission, one located in the southern part of the county, one in the north and one at Allensville.

The TCWD is a relatively large water system covering approximately 80% of the Todd County area. With the exception of the southwestern part of the county, most of the roads within the county have water service, with only short extensions needed from time to time to accommodate new development.

The main problems that faced the TCWD are its long-term supply of treated water, low pressure in certain areas of the system, extending water service to unserved areas, and installing lines for improved hydraulic performance. The water supply issue has been resolved with their transition to the Logan Todd Regional system. The remaining problems will be alleviated by the intended system extension project.

The proposed project involves construction of nearly 24 miles of water line on 11 rural roadways. Most of these lines are being planned primarily to serve new customers in need of a safe supply of drinking water, while others are being built to improve hydraulic performance of the existing distribution system.

The higher elevations in the northern part of Todd County experience low pressure during high demand periods. This problem is most acute during the summer when high demand from the Lake Malone area, which is relatively low in elevation, strains the distribution system. This problem will be corrected by the construction of a new 250,000-gallon elevated water tank at Clifty and a new, higher capacity pumping station to feed the northern part of the county. Other low-pressure areas will be assisted by building interconnecting lines to complete hydraulic circuits or "loops". The loops will also improve the water quality by cutting down on the

stagnant water in dead-end lines. Also included in the project is an up-to-date telemetry system to allow for the monitoring and control of the system in greater detail. The total estimated cost of the proposed project is \$1,800,000.

2.0 EXISTING FACILITIES

2.1 History and Assets

The Todd County Water District (TCWD) was formed by Todd County Court order in 1971 to supply potable water to rural residents of Todd County, Kentucky. There are four public water systems in Todd County, those being Elkton, Guthrie, Trenton and the TCWD. The Elkton and Guthrie systems serve the incorporated areas of those communities and only limited areas adjacent to town. The Trenton system serves the town's incorporated area, and a portion of the rural area south of town along Highway 104.

The TCWD water system is comprised of approximately 362 miles of water line and a total water storage capacity of 530,800 gallons. The existing distribution system consists of 10", 8", 6", 4", and 3" PVC lines. The general service area is depicted in Exhibit 1, which illustrates the general distribution layout. The existing transmission and distribution lines generally radiate from the recently decommissioned water treatment plant located near the Allegre community in northern Todd County. The system is well laid out with many loops. However, there are some dead end and low-flow lines within the system that require frequent flushing.

TCWD has four water storage structures to serve the water system and one primary pumping station that boosts water into the higher-pressure north zone. Only three of the four existing water storage tanks provide useful storage for the TCWD system. The existing Clifty standpipe, and the Coal Bank Road tank provide 63,000 and 150,000 gallons of storage respectively to the northern pressure zone. The Allensville standpipe has a storage capacity of 67,800 gallons and provides pressure to the southeastern part of the County. The fourth tank located on Allender's Hill acts as a pump tank for the Logan Todd Regional Water Commission's booster pump station at that location. The southern part of the county is served directly from an existing 1,500,000 gallon elevated tank owned by the LTRWC.

The Logan Todd Regional system supplies water to the TCWD system in three locations. The southern feed point is located at the base of the LTRWC tank described above, while the others are located at the Allender's Hill tank in northern Todd County, and at Allensville. Flow through each of these metering points is controlled by the LTRWC SCADA system. The northern pressure zone is controlled by level in the Coal Bank Road tank, the southern pressure zone is fed directly from the LTRWC tank and the Allensville system is controlled by the level in the Allensville tank.

2.2 Regulatory Compliance

According to the Division of Water's remarks within the Clearinghouse Comments, the Todd County water system is currently in compliance with

appropriate regulatory agencies. No other remarks were given to suggest that the water system was in or near a noncompliance status.

3.0 NEED FOR PROJECT

3.1 Health and Safety

The majority of the water lines are proposed to bring water service to 75 potential customers that currently rely on groundwater sources or hauled water. Providing water to these potential residences is consistent with Todd County's approved Water Supply Plan as well as former Governor Paul Patton's initiative to provide adequate and potable water to all homes by the year 2020.

The proposed elevated water storage tank and booster pumping station will relieve the low pressure concerns experienced in the higher elevations of the northern pressure zone. During the especially high demand events, residential pressures in this area drop to and below 30 psi, which is a minimum requirement according to the Ten State Standards. A new tank will place an ample amount of water storage within the area of these high demands, thus reducing the large head loss values which are currently creating the inadequate pressures.

3.2 System O&M

There are two primary reasons for the District's proposed project. The first is to provide a reliable and potable water source to approximately 75 total residences as described in the preceding section. The second reason is to improve the operation and maintenance of the system by expanding the storage capacity and hydraulic capacity of the northern portion of the system. As previously stated, the water system includes several dead end or low flow lines. Some of the proposed line extensions will connect dead end lines to loop water flow, which reduces the need for frequent flushing to rid the line of stagnant water.

3.3 Growth

As mentioned in the previously published Preliminary Engineering Report, the population of Todd County and the rural areas should grow by an average of 4% every five years over the next 30 years based upon census records and expected growth. The proposed project is necessary to provide water service to 75 new customers. Overall, the proposed project is being designed to ultimately improve water service to all 2,787 customers. The new infrastructure will ensure the District's ability to properly serve the existing customer base plus future growth in the area.

4.0 ALTERNATIVES CONSIDERED

A resolution to the problems faced by the Todd County Water District is a relatively simple project with two alternatives.

4.1 Alternative 1

The first obvious alternative is to do nothing or a smaller variation of the project. However, the District would continue their current endurance of operation, maintenance and water pressure problems plus approximately 75 residences would remain unserved. Therefore, the 'do nothing' alternative is not a viable option as it would only prolong the problems.

4.2 Alternative 2

The second alternative is one that offers several advantages and resolves the three critical deficiencies in the water system. This alternative provides water service to unserved residences; eliminates some dead end lines that suffer with water quality problems and require frequent flushing; and provides a water storage structure in a high demand community, which will stabilize pressure conditions. The project adheres with the Commonwealth's drive to provide a reliable and potable water source to all families by the year 2020. Also, the project provides a solution to Todd County's inability to provide at least 30-psi pressure during all demand times.

4.2.1 *Description*

The project involves construction of approximately 24 miles of water line on eleven rural roads in various parts of Todd County. Some of these lines are being built primarily to serve new customers in need of a safe supply of drinking water, while others are being built to improve the hydraulic performance of the existing distribution system. The higher elevations around the Clifty community in northern Todd County experience low pressure during high demand periods. This is worst in the summer months when high demand from the Lake Malone area pushes the distribution system to capacity. This will be corrected by the construction of a 250,000-gallon water storage tank (O.F. = ~921') and a booster pumping station. Other low-pressure areas can be corrected by building interconnecting lines to complete hydraulic circuits or "loops". These loops will also improve the water quality by cutting down on the stagnant water in dead-end lines.

In a further attempt to improve service to customers, Todd County is also proposing to install an up-to-date telemetry system to allow the operators to monitor the performance of the system in greater detail, and to identify problems earlier. The layout of the proposed lines is illustrated in Exhibit 1.

4.2.2 *Environmental Impacts and Land Requirements*

The alternative has little to no impact upon the environment and land resources because the proposed construction will be done along existing easements and highways. The line extensions and upgrades are proposed for construction in existing pipeline easements where possible or in county/state right-of-way and easements as necessary. Todd County has secured a land in the Clifty community for the proposed elevated water tank. This site is immediately adjacent to the existing Clifty standpipe, that will be taken out of service and dismantled upon completion of the new tank. As

mentioned earlier, the project will affect four main land resources during construction: residential, agriculture, grazing and transportation. The general construction effect to the resources is the disturbances associated with building the facilities. No other effect to the resources is expected after construction of the facilities is complete.

4.2.3 *Construction Problems*

There are no severe construction problems foreseen for the project. The Todd County service area has varying soil conditions ranging from near ideal in some of the southern parts of the county, to sporadic instances of rock outcrops in the north. All of the pipeline routes and the proposed tank site are very accessible, and there is little evidence of a high water table. However, mobilization will be significant during the project since all of the proposed water lines are spread out throughout the service area. Also, several of the waterline extensions will require creek crossings, but none of which should be unmanageable or exceptionally costly.

4.2.4 *Cost Estimates*

The Todd County Water District's System Extension Project is estimated to have a total cost of \$1,800,000. The project cost consists of construction, non-construction and contingency costs, which are \$1,284,569, \$228,400 and \$287,031 respectively. The project is anticipated to be funded in part by a \$700,000 grant and \$1,100,000 loan from Rural Development

5.0 PROPOSED PROJECT

5.1 Project Design

5.1.1 *Water Supply*

The Logan Todd Regional Water Commission's plant will serve the proposed project. Based upon figures from LTRWC, the newly completed plant is producing approximately 4,300,000 gallons per day, which is approximately 43% of the design capacity. Therefore, sufficient capacity exists to serve the Todd County project since the estimated 75 new customers should, based on average usage, only add an additional 15,000 gallon per day total demand.

5.1.2 *Storage*

The proposed project will involve the construction of a new 250,000-gallon elevated storage tank (OF = ~921'). This new tank will be constructed in the Clifty community, which experiences periods of unacceptable low pressure during seasonal high demands. The new tank will place a sufficient water storage supply at the primary problem point producing a steady pressure environment of at least 40 psi in the higher elevations of the community. Overall, the water system's total

storage capacity will increase to 717,800 gallons or approximately 1.3 times the current daily demand. The proposed tank site is illustrated in Exhibit 1.

5.1.3 *Distribution Layout*

The waterline construction of the Todd County Water District's system extension project will be spread out along nearly 24 miles of rural roadways. The affected roadways are not clustered together as typical in most system upgrades, but they are rather "fill-in" lines to serve new customers and hydraulic improvements for water quality and flow. The line portion of the project involves the new construction of approximately 13,400 LF of 3" PVC treated water line, 39,581 LF of 4" PVC and DIP treated water line, and 70,417 LF of 6" PVC and DIP treated water line. In addition to the waterlines, a booster pumping station will be constructed to control the filling of the proposed water tank. Also, in an attempt to improve service to customers, Todd County is proposing to install an up-to-date telemetry system to allow the operators to monitor the performance of the new system components in greater detail, and to identify problems earlier.

The proposed line extensions, tank, and proposed booster pump station locations are illustrated in Exhibits 1.

5.2 Cost Estimate

The proposed itemized cost estimate of the Todd County Water District's System Extension Project is shown in Table 1.

Table 1
Project Cost Estimate

Construction			
No.	Item	Bid Price	Total
1	Contract No. 1 - <i>Ross Construction Co., Inc.</i>		\$896,199.68
	Water Line Extensions, SCADA & Pump	\$698,815.50	
	New 320-gpm Pump Station	\$90,000.00	
	New LTRWC Meter Station in Trenton	\$53,786.00	
	LTRWC & TCWD Telemetry Upgrades & Additions	\$53,598.18	
2	Contract No. 2 - <i>Caldwell Tanks, Inc.</i>		\$388,369.00
	Water Tank Addition - 250,000 gal Elevated Tank	\$381,369.00	
	Water Tank Demolition - Existing 63,000 gal Standpipe	\$7,000.00	
	Subtotal - Construction		\$1,284,568.68
Non-Construction			
1	Administrative & Legal		\$25,000.00
2	Land & Right-of-way		\$5,000.00
3	Geotechnical & Archaeological Investigation		\$6,000.00
4	Preliminary Engineering & Environmental		\$13,400.00
5	Engineering Design		\$82,400.00
6	Construction Phase Engineering		\$20,600.00
7	Resident Inspection		\$56,000.00
8	Interest During Construction		\$20,000.00
	Subtotal - Nonconstruction		\$228,400.00
	Contingency		\$287,031.32
	TOTAL ESTIMATED PROJECT COST		\$1,800,000.00

5.3 Project Funding

The proposed project will be funded by two different funding agencies. The breakdown of funding is as follows:

Rural Development Grant	\$700,000.00
Rural Development Loan	<u>\$1,100,000.00</u>
Total Project Cost	\$1,800,000.00

5.4 Annual Operating Budget

The proposed annual operating budget for the Todd County Water District's Clifty Tank and System Extension Project is shown in Table 2.

Table 2
Proposed Operating Budget

Operating Income	Existing ⁽¹⁾	Extension	
		Only	Future
Water Sales	\$1,478,736	\$41,355 ⁽²⁾	\$1,520,091 ⁽⁶⁾
Late Charges & Reconnection Fees	\$26,163	\$733 ⁽³⁾	\$26,896
Other Income	\$22,019	\$617 ⁽³⁾	\$22,636
Total Operating Income	\$1,526,918	\$42,704	\$1,569,622
Operating and Maintenance Expense			
Payroll Expense	\$278,428	\$0	\$278,428
Purchased Water	\$596,713	\$13,095 ⁽⁵⁾	\$609,808
Distribution Expense	\$21,700	\$608 ⁽³⁾	\$22,308
Contract Services	\$30,585	\$0	\$30,585
Utilities	\$18,754	\$525 ⁽³⁾	\$19,279
Administrative Expense	\$21,929	\$0	\$21,929
Office Expenses	\$25,096	\$703 ⁽³⁾	\$25,799
Insurance	\$28,216	\$790 ⁽³⁾	\$29,006
Travel	\$17,391	\$0	\$17,391
Bad Debts	\$28,115	\$0	\$28,115
Miscellaneous	\$8,184	\$0	\$8,184
Total Operating Expenses	\$1,075,111	\$15,720	\$1,090,831
Net Operating Income	\$451,807	\$26,984	\$478,791
Non-Operating Income (Expense)			
Interest Income	\$8,793	\$0	\$8,793
RUS Interest	(\$179,862)	(\$45,375) ⁽⁴⁾	(\$225,237) ⁽⁷⁾
RUS Principal	(\$95,193)	(\$12,425) ⁽⁴⁾	(\$107,618) ⁽⁷⁾
Debt Service Reserves	(\$26,963)	(\$5,800) ⁽⁴⁾	(\$32,763) ⁽⁷⁾
Debt Service - City of Elkton	\$57,640	\$0	\$57,640
Total Non-Operating Income	(\$235,585)	(\$63,600)	(\$299,185)
Net for Coverage & Depreciation	\$216,222	(\$36,616)	\$179,606
Notes:			
1. Based on the FY2004 Financial Statement.			
2. Based on 75 new customers connecting and using 5,000 gallons per month at current rates.			
3. Based on a 2.8% increase in water sales			
4. Based on a \$1,100,000 RUS Loan at 4.125% & 38 year term with 10% coverage.			
5. Based on an increased water demand of 4,500,000 gallons per year at \$2.91 wholesale rate.			
6. Estimated Water Sales per Forecast with Existing Customer Base, 2004 Usage & current rates.			
7. Estimated Debt Service for 2005			

Based on these projections and assumptions, the commitment of a \$700,000 Rural Development Grant along with the added revenues from recently increased rates, and higher water sales are expected to produce an adequate fund for coverage and depreciation. Without securing the referenced grant, we estimate that an additional 4.5% increase to the retail rates would be required to offset the

increase in debt service and maintain the equivalent fund for coverage and depreciation. Table 3 illustrates the current rate schedule.

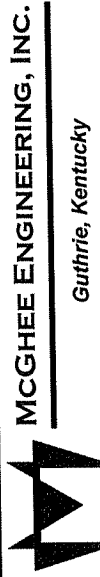
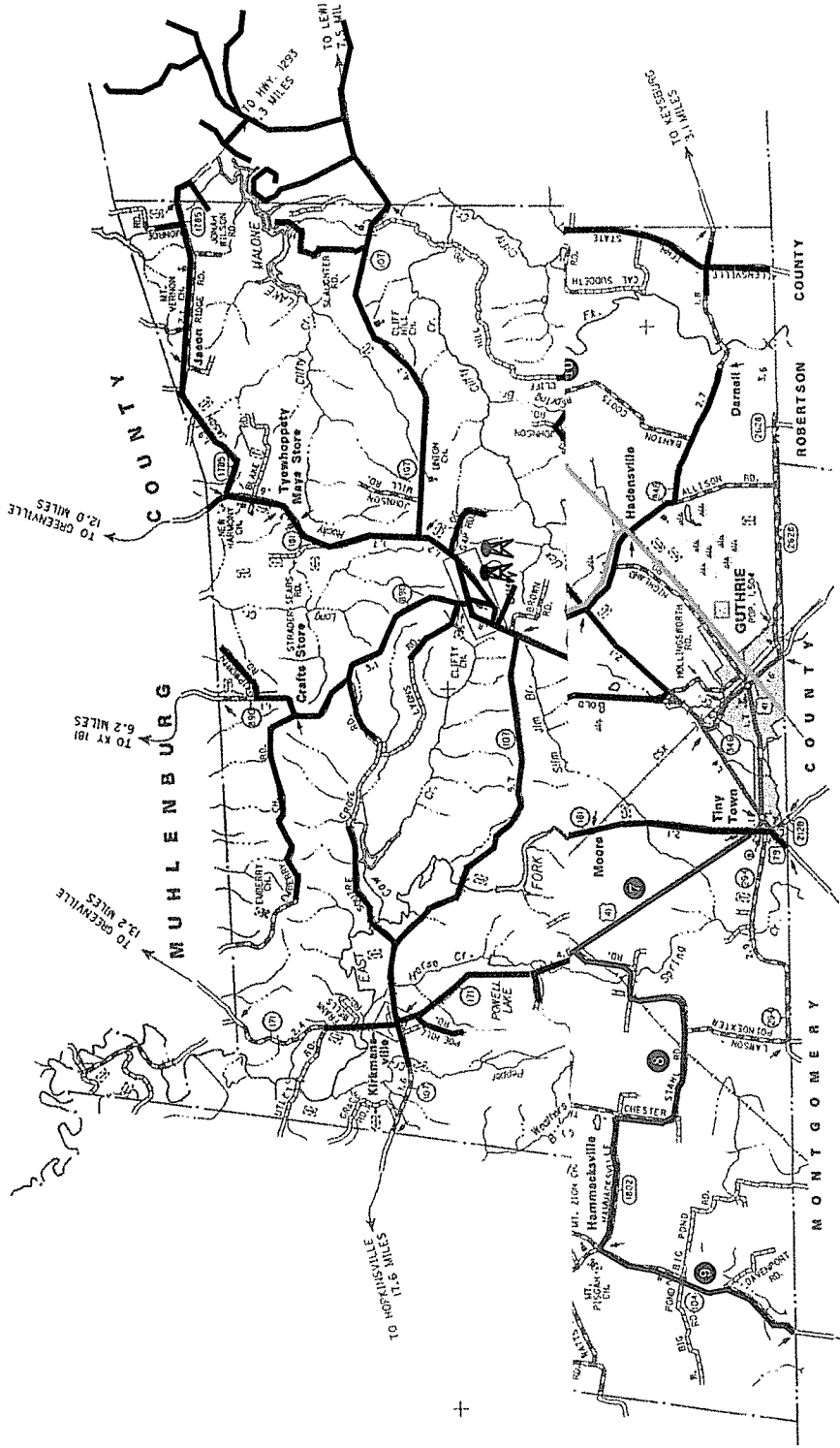
Table 3
Current Rate Schedule

First	<u>2,000</u>	Gallons @	<u>\$ 17.90</u>	Minimum
Next	<u>8,000</u>	Gallons @	<u>\$ 9.38</u>	per 1,000 Gallons
Next	<u>10,000</u>	Gallons @	<u>\$ 8.35</u>	per 1,000 Gallons
Next	<u>20,000</u>	Gallons @	<u>\$ 7.33</u>	per 1,000 Gallons
All Over	<u>40,000</u>	Gallons @	<u>\$ 5.89</u>	per 1,000 Gallons

6.0 RECOMMENDED SOLUTION

In order to address the problems and needs of the water system, the Todd County Water District should do the following:

- Construct a 250,000-gallon elevated water storage tank (OF = ~921') at Clifty to serve the northern part of Todd County.
- Construct approximately 26 miles of new waterline to serve an estimated 88 residences plus improve the system's hydraulics and water quality.
- Construct a booster pumping station to control the flow and filling of the proposed Clifty tank.



MCGHEE ENGINEERING, INC.

Guthrie, Kentucky

Todd County Water District
Clifty Tank & System Extension Project
OVERALL PROJECT LAYOUT

By: **McGhee**

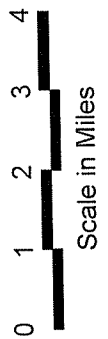
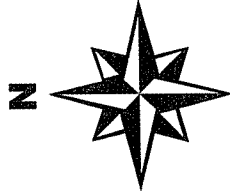
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Date: **9-19-2003**

Page: **E-1**

LEGEND

- Existing Water Line—TCWD
- Proposed Water Line—TCWD
- Existing Water Line—LTRWC
- Line Reference Number
- Existing Water Storage Tank
- Proposed Water Storage Tank
- Existing Pump Station
- Proposed Pump Station



Background Map: KYDOT Todd County General Highway Map—1988

Appendix A

Bid Tabulation – June 23, 2005

Todd County Water District
Water System Extension Project
TABULATION OF BIDS: Contract No. 1 - Water Lines & Booster Pump
Bids Received: June 23, 2005 @ 10:00 a.m.

No.	BASE BID ITEMS	QUANTITY	Stotts Construction Columbia, KY		Ross Construction Hartford, KY		Garrison Construction Greensburg, KY		Cleary Construction Tompkinsville, KY		Salmon Construction Mt. Washington, KY	
			UNIT \$	TOTAL	UNIT \$	TOTAL	UNIT \$	TOTAL	UNIT \$	TOTAL	UNIT \$	TOTAL
01	320-gpm Booster Pump	1 LS	\$ 95,000.00	\$ 95,000.00	\$ 90,000.00	\$ 90,000.00	\$ 84,855.00	\$ 84,855.00	\$ 100,000.00	\$ 100,000.00	\$ 92,062.00	\$ 92,062.00
02	6-inch Class 200 PVC water line	69,617 LF	\$ 4.90	\$ 341,123.30	\$ 4.50	\$ 313,276.50	\$ 6.00	\$ 417,702.00	\$ 5.70	\$ 396,816.90	\$ 5.40	\$ 375,931.80
03	6-inch Class 350 DIP water line	800 LF	\$ 12.50	\$ 10,000.00	\$ 17.50	\$ 14,000.00	\$ 14.60	\$ 11,680.00	\$ 16.00	\$ 12,800.00	\$ 17.83	\$ 14,264.00
04	4-inch Class 200 PVC water line	38,931 LF	\$ 3.60	\$ 140,151.60	\$ 4.00	\$ 155,724.00	\$ 4.25	\$ 165,456.75	\$ 4.55	\$ 177,136.05	\$ 5.15	\$ 200,494.65
05	4-inch Class 350 PVC water line	650 LF	\$ 14.00	\$ 9,100.00	\$ 17.50	\$ 11,375.00	\$ 13.92	\$ 9,048.00	\$ 16.00	\$ 10,400.00	\$ 17.40	\$ 11,310.00
06	3-inch Class 200 PVC water line	13,400 LF	\$ 3.10	\$ 41,540.00	\$ 4.25	\$ 56,950.00	\$ 3.75	\$ 50,250.00	\$ 3.75	\$ 50,250.00	\$ 7.56	\$ 101,304.00
07	Steel, cased railroad bore; 10"cs/6"cr	120 LF	\$ 75.00	\$ 9,000.00	\$ 70.00	\$ 8,400.00	\$ 75.00	\$ 9,000.00	\$ 60.00	\$ 7,200.00	\$ 62.00	\$ 7,440.00
08	Steel, cased road bore; 10"cs/6"cr	260 LF	\$ 70.00	\$ 18,200.00	\$ 65.00	\$ 16,900.00	\$ 70.00	\$ 18,200.00	\$ 60.00	\$ 15,600.00	\$ 62.50	\$ 16,250.00
09	Steel, cased road bore; 8"cs/4"cr	180 LF	\$ 60.00	\$ 10,800.00	\$ 40.00	\$ 7,200.00	\$ 65.00	\$ 11,700.00	\$ 25.00	\$ 4,500.00	\$ 30.00	\$ 5,400.00
10	Uncased driveway bore	215 LF	\$ 25.00	\$ 5,375.00	\$ 35.00	\$ 7,525.00	\$ 35.00	\$ 7,525.00	\$ 45.00	\$ 9,675.00	\$ 15.00	\$ 3,030.00
11	Creek Crossing; all sizes	202 LF	\$ 65.00	\$ 13,130.00	\$ 35.00	\$ 7,070.00	\$ 65.00	\$ 13,130.00	\$ 45.00	\$ 9,090.00	\$ 15.00	\$ 3,030.00
12	16"x6" tapping sleeve, valve & box	1 EA	\$ 4,500.00	\$ 4,500.00	\$ 5,000.00	\$ 5,000.00	\$ 4,988.07	\$ 4,988.07	\$ 4,300.00	\$ 4,300.00	\$ 4,493.00	\$ 4,493.00
13	6"x6" tapping sleeve, valve & box	3 EA	\$ 1,000.00	\$ 3,000.00	\$ 1,400.00	\$ 4,200.00	\$ 1,500.00	\$ 4,500.00	\$ 1,350.00	\$ 4,050.00	\$ 1,150.00	\$ 3,450.00
14	6"x4" tapping sleeve, valve & box	1 EA	\$ 1,050.00	\$ 1,050.00	\$ 1,200.00	\$ 1,200.00	\$ 1,350.00	\$ 1,350.00	\$ 1,100.00	\$ 1,100.00	\$ 1,150.00	\$ 1,150.00
15	4"x4" tapping sleeve, valve & box	2 EA	\$ 990.00	\$ 1,980.00	\$ 1,100.00	\$ 2,200.00	\$ 1,300.00	\$ 2,600.00	\$ 1,000.00	\$ 2,000.00	\$ 1,000.00	\$ 2,000.00
16	3"x3" tapping sleeve, valve & box	1 EA	\$ 970.00	\$ 970.00	\$ 1,100.00	\$ 1,100.00	\$ 1,200.00	\$ 1,200.00	\$ 1,065.00	\$ 1,065.00	\$ 1,000.00	\$ 1,000.00
17	Remove Blowoff & Connect to Exist. 4"	4 EA	\$ 700.00	\$ 2,800.00	\$ 900.00	\$ 3,600.00	\$ 800.00	\$ 3,200.00	\$ 600.00	\$ 2,400.00	\$ 200.00	\$ 800.00
18	Remove Blowoff & Connect to Exist. 3"	1 EA	\$ 600.00	\$ 600.00	\$ 600.00	\$ 600.00	\$ 750.00	\$ 750.00	\$ 600.00	\$ 600.00	\$ 200.00	\$ 200.00
19	Remove Flush Hydrant from service	1 EA	\$ 550.00	\$ 550.00	\$ 500.00	\$ 500.00	\$ 550.00	\$ 550.00	\$ 500.00	\$ 500.00	\$ 200.00	\$ 200.00
20	Flush Hydrant w/ valve	8 EA	\$ 1,400.00	\$ 11,200.00	\$ 1,800.00	\$ 14,400.00	\$ 1,675.00	\$ 13,400.00	\$ 1,700.00	\$ 13,600.00	\$ 1,850.00	\$ 14,800.00
21	6" Gate Valve and box	13 EA	\$ 575.00	\$ 7,475.00	\$ 660.00	\$ 8,580.00	\$ 550.00	\$ 7,150.00	\$ 500.00	\$ 6,500.00	\$ 540.00	\$ 7,020.00
22	4" Gate Valve and box	6 EA	\$ 540.00	\$ 3,240.00	\$ 575.00	\$ 3,450.00	\$ 500.00	\$ 3,000.00	\$ 440.00	\$ 2,640.00	\$ 460.00	\$ 2,760.00
23	3" Gate Valve and box	1 EA	\$ 480.00	\$ 480.00	\$ 500.00	\$ 500.00	\$ 450.00	\$ 450.00	\$ 420.00	\$ 420.00	\$ 419.00	\$ 419.00
24	Air Release Valve & Box	9 EA	\$ 525.00	\$ 4,725.00	\$ 535.00	\$ 4,815.00	\$ 635.00	\$ 5,715.00	\$ 475.00	\$ 4,275.00	\$ 555.00	\$ 4,995.00
25	New Meter Service, far side	35 EA	\$ 650.00	\$ 22,750.00	\$ 550.00	\$ 19,250.00	\$ 500.00	\$ 17,500.00	\$ 600.00	\$ 21,000.00	\$ 600.00	\$ 21,000.00
26	New Meter Service, near side	40 EA	\$ 460.00	\$ 18,400.00	\$ 425.00	\$ 17,000.00	\$ 375.00	\$ 15,000.00	\$ 400.00	\$ 16,000.00	\$ 500.00	\$ 20,000.00
27	Reconnect Meter Service, near side	5 EA	\$ 350.00	\$ 1,750.00	\$ 300.00	\$ 1,500.00	\$ 400.00	\$ 2,000.00	\$ 450.00	\$ 2,250.00	\$ 300.00	\$ 1,500.00
28	Reconnect Meter Service, far side	5 EA	\$ 300.00	\$ 1,500.00	\$ 175.00	\$ 875.00	\$ 325.00	\$ 1,625.00	\$ 250.00	\$ 1,250.00	\$ 100.00	\$ 500.00
29	Trenton Meter Station Equipment	1 LS	\$ 45,286.00	\$ 45,286.00	\$ 45,286.00	\$ 45,286.00	\$ 45,286.00	\$ 45,286.00	\$ 45,286.00	\$ 45,286.00	\$ 45,286.00	\$ 45,286.00
30	Trenton Meter Station Installation	1 LS	\$ 9,000.00	\$ 9,000.00	\$ 8,500.00	\$ 8,500.00	\$ 6,380.00	\$ 6,380.00	\$ 15,000.00	\$ 15,000.00	\$ 10,000.00	\$ 10,000.00
31	Installation of new LTRWC SCADA	1 LS	\$ 31,200.00	\$ 31,200.00	\$ 31,200.00	\$ 31,200.00	\$ 31,200.00	\$ 31,200.00	\$ 31,200.00	\$ 31,200.00	\$ 31,200.00	\$ 31,200.00
32	Reinstallation/Upgrade of TCWD SCADA	1 LS	\$ 22,398.18	\$ 22,398.18	\$ 22,398.18	\$ 22,398.18	\$ 22,398.18	\$ 22,398.18	\$ 22,398.18	\$ 22,398.18	\$ 22,398.18	\$ 22,398.18
33	Unclassified Undercut	100 CY	\$ 10.00	\$ 1,000.00	\$ 5.00	\$ 500.00	\$ 15.00	\$ 1,500.00	\$ 7.00	\$ 700.00	\$ 1.00	\$ 100.00
34	No. 57 Aggregate refill	50 Ton	\$ 18.00	\$ 900.00	\$ 15.00	\$ 750.00	\$ 15.00	\$ 750.00	\$ 20.00	\$ 1,000.00	\$ 14.00	\$ 700.00
35	Class "B" concrete refill	50 CY	\$ 70.00	\$ 3,500.00	\$ 70.00	\$ 3,500.00	\$ 75.00	\$ 3,750.00	\$ 75.00	\$ 3,750.00	\$ 100.00	\$ 5,000.00
Total Amount of Bid			\$ 893,974.08		\$ 896,199.68		\$ 994,789.00		\$ 999,002.13		\$ 1,039,947.63	

No.	ALTERNATE BID ITEMS	QUANTITY	Caldwell Tanks Louisville, KY		Phoenix Fabricators Avon, IN		McGhee Engineering, Inc. Guthrie, Kentucky		Owner: Todd County Water District	
			UNIT \$	TOTAL	UNIT \$	TOTAL	UNIT \$	TOTAL	UNIT \$	TOTAL
A01	Steel, cased road bore; 8"cs/3"cr	1 LF	\$ 65.00	\$ 65.00	\$ 66.00	\$ 66.00	\$ 60.00	\$ 60.00	\$ 60.00	\$ 60.00
A02	Open-cut, road crossing; 10"cs/6"cr	1 LF	\$ 55.00	\$ 55.00	\$ 40.00	\$ 40.00	\$ 38.00	\$ 38.00	\$ 30.00	\$ 30.00
A03	Open-cut, road crossing; 8"cs/4"cr	1 LF	\$ 50.00	\$ 50.00	\$ 37.50	\$ 37.50	\$ 36.00	\$ 36.00	\$ 30.00	\$ 30.00
A04	Remove Blowoff & Connect to Exist. 4"	1 EA	\$ 725.00	\$ 725.00	\$ 825.00	\$ 825.00	\$ 850.00	\$ 850.00	\$ 300.00	\$ 300.00
A05	New Meter Service, far side w/ PRV	1 EA	\$ 700.00	\$ 700.00	\$ 550.00	\$ 550.00	\$ 750.00	\$ 750.00	\$ 600.00	\$ 600.00
A06	New Meter Service, near side w/ PRV	1 EA	\$ 600.00	\$ 600.00	\$ 450.00	\$ 450.00	\$ 575.00	\$ 575.00	\$ 500.00	\$ 500.00
Total Amount of Bid			\$ 385,450.00		\$ 388,369.00		\$ 654,654.00		\$ 660,154.00	

TABULATION OF BIDS: Contract No. 2 - Water Tank & Demo
Bids Received: June 23, 2005 @ 10:00 a.m.

No.	BASE BID ITEMS	QUANTITY	Pittsburg Tank Sebree, KY		Caldwell Tanks Louisville, KY		Phoenix Fabricators Avon, IN	
			UNIT \$	TOTAL	UNIT \$	TOTAL	UNIT \$	TOTAL
01	250,000 Gallon Elevated Water Tank	1 LS	\$ 375,650.00	\$ 375,650.00	\$ 381,369.00	\$ 381,369.00	\$ 654,654.00	\$ 654,654.00
02	Demolition of Existing Standpipe	1 LS	\$ 9,800.00	\$ 9,800.00	\$ 7,000.00	\$ 7,000.00	\$ 5,500.00	\$ 5,500.00
Total Amount of Bid			\$ 385,450.00		\$ 388,369.00		\$ 660,154.00	

Appendix B

Engineer's Recommendation Letter to the Water District

MCGHEE ENGINEERING, INC.

202 Ewing Street, P. O. Box 267
Guthrie, Kentucky 42234
www.mcgheeengineering.com

Phone: (270) 483-9985
Fax: (270) 483-9986

July 5, 2005

Dr. George Brown
Todd County Water District
P.O. Box 520
Elkton, Kentucky 42220

RE: 2005 Water System Extension
Contracts No. 1 & 2
Recommendation of Award

Dear Dr. Brown:

Bids for the referenced project were received June 23, 2005 at the office of the Todd County Water District, opened and read aloud. At such time that the bids were read aloud, the apparent low bidders were Stotts Construction Co., Inc. for Contract No. 1 (Line Extensions) and Pittsburg Tank & Tower for Contract No. 2 (Tank Addition). The bids were tabulated and reviewed for the referenced project, and a tabulation of the bids is enclosed.

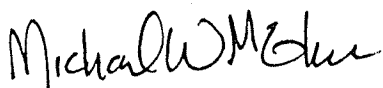
Shortly after the bids were received, a listing of experience and references as well as a list of subcontractors were evaluated for both contracts. Notes from these respective evaluations are attached. Based on our assessment of the bids, review of supporting references, and our past work experience with the other bidders, we recommend award of the construction contracts as follows:

Line Contract (#1):	Ross Construction, Inc. 421 East Union Street Hartford, Kentucky 42347 (270) 298-7424	\$896,199.68
Tank Contract (#2):	Caldwell Tanks 4000 Tower Street Louisville, Kentucky 40219 (502) 964-3361	\$388,369.00

Upon your approval, we will proceed with preparation of contract documents. Please contact me if you have any questions.

Sincerely,

MCGHEE ENGINEERING, INC.



Michael W. McGhee, PE
President

Enclosures

cc: Jerry Cloyd – Rural Development

Todd County Water District
Clifty Tank & System Extension
Summary of References

Stotts Construction
July 5, 2005

References Provided by Stotts:

1. Crittenden Livingston Water District, Donnie Beavers, Manager. Has worked with Stotts on projects. Stotts does a good job. Subcontracted some work to Crider. Crider works hard, but lacks the organizational ability to manage the project himself. Overall evaluation is positive and would work with them again.
2. Meade County Water District, Tim Osbourne. One of the best they have worked with. Very happy and impressed.
3. Lyon County Water District, Jimmy Duncan. Third project with Stotts. Professional people. Very satisfied.
4. City of Marion, Garry Barber. Did a good job, would hire them again. No experience with Crider.
5. Bullock Penn Water District, Bill Catlette. Outstanding. Good cleanup. On time. Very pleased.
6. Christian County Water District, James Owen. Overall good project. Had to watch them.

We also attempted to contact Barkley Lake Water District, Caldwell County Water District, McCreary County Water District and Grant County Water District without success.

Stotts Construction informed us by memo dated 6/27/05 that they intended to subcontract line work on the Todd County project to Wayne Crider & Sons Construction. We requested references for Crider, but have not yet received them.

Todd County Water District
Clifty Tank & System Extension
Summary of References

Pittsburg Tank & Tower Company
July 5, 2005

References Provided by Pittsburg:

1. Muhlenberg County Water District – Tommy Woodruff, Manager 500,000 gallon tank, 2004. Engineer: Joe Henry, GRW (out of office until 7/12/05) Woodruff's comments: Went perfect, no problems, everything agreed on, on time. Tank not yet in service.
2. Carter & Mullings, Columbia, MS. Jeff Pennington listed as reference. Pennington actually works for Grading Services (601) 444-0220. Spoke with Pennington 7/5/05, Comments: Worked with Pittsburg as a subcontractor doing foundation and line work, and subcontracted tank work to them. No project within last 2-3 years, but several jobs before that. Qualified tank contractor, good experience.
3. Western Kentucky Regional Development, Henderson, KY. Called the number listed on the reference – disconnected. Contacted Luke Miracle, DLZ Kentucky (formerly Brighton Engineering). Built 1M gal tank in Sebree, KY about 2002, good experience. (May be called 4-Star Industrial Park.)
4. City of Russell Springs, KY, Joel Wolford, Mayor (out of office). 100,000 gal., 1999. Spoke with Terry Russell, Manager. Comments: Not manager at time tank was built, but familiar with project. No major problems. Erection went well, had too small compressor for painting, but corrected. Tank has been in service for several years, good service.
5. City of Tompkinsville, KY. Todd Spangler, GRW Engineers. 300,000 gal, 2004. Overall good experience, some issues with painting, but resolved amicably. Just completed 1-year warranty inspection, doesn't have results yet.
6. City of Dyer, TN. Ed Hargraves, Project Engineer. 100,000 gal, 2003. Went OK, first project with them. Good experience.

We attempted to contact references in Grand Rivers, KY; Redfield AR; and Camdenton, MO without success, and did not contact 5 other listed references.

References not provided by Pittsburg

Smokey Smotherman, Chairman of the North Logan Water District, recommended strongly against award to Pittsburg based on prior experience.

An anonymous fax provided contact information for the Carolina Water Service in Charlotte, NC. I spoke with Mr. Martin Lashua, who gave a very negative report on Pittsburg's performance on a tank project for them in 1998.

Other Information

Pittsburg sent a letter to our office dated June 27, 2005 regarding the project. In this letter, they stated that they were already working on the project "predicated on their quotation," and that they would be sending an invoice along with their submittal package. The letter referred to the client as the "City of Clifty," and asked permission to deviate from the specifications with regard to the welding procedures.

We interpret this letter as demonstrating a disturbing lack of familiarity with the bidding documents and with proper contract administration procedures.

Appendix C

Drinking Water Branch – DOW's Approval of Plans and Specs



ERNIE FLETCHER
GOVERNOR

ENVIRONMENTAL AND PUBLIC PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
14 REILLY ROAD
FRANKFORT, KENTUCKY 40601-1190
www.kentucky.gov

LAJUANA S. WILCHER
SECRETARY

January 30, 2005

Dr. George D Brown, Chairman
Todd County Water District
PO Box 520
617 West Main Street
Elkton, Kentucky 42220

RE: Todd County
AI No: 34111
DW No: 1100944-05-001
Clifty Tank and System Extension Project
Activity ID: APE 20050001

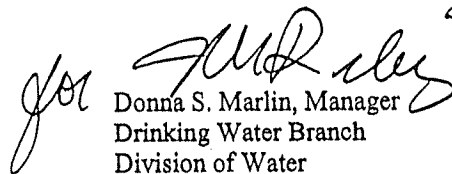
Dear Dr. Brown:

We have reviewed the plans and specifications for the above referenced project. The plans include the construction of approximately 6,475 feet of 3-inch PVC, 48,974 feet of 4-inch PVC and 68,863 feet of 6-inch PVC water line. Also, it include 320 gpm / 40 hp booster pump station on KY Highway 181 and 250,000 gallons elevated tank at Clifty. This is to advise that plans and specifications for the above referenced project are APPROVED with respect to sanitary features of design, as of this date with the requirements contained in the attached construction permit.

Based on the hydraulic analysis/data submitted, the areas served by the following extension(s) are considered to be underserved: (a) Smith Road (b) KY HWY 507 (c) KY HWY 189. This designation indicates that without improvements to the existing infrastructure, future extensions may not be able to provide the required minimum pressure of 30 psi on the discharge side of customers' meters. Without improvements to the infrastructure, future extensions may be denied.

If you have any questions concerning this project, please contact Solitha Dharman, P.E., at (502) 564-2225, extension 572.

Sincerely,


Donna S. Marlin, Manager
Drinking Water Branch
Division of Water

DSM: SWD
Enclosures

C: Todd County Health Department
Eric T. Harris, P.E., McGhee Engineering, Inc.
Logan/Todd Regional Water Commission



Distribution-Major Construction

Todd Co Water District

Subject Item Inventory

Activity ID No.: APE20050001

Subject Item Inventory:

ID	Designation	Description
AIO034111		
PORT5	Water Line Ext. / Repl	6,475 feet of 3-inch PVC, 48, 974 feet of 4-inch PVC and 68,863 feet of 6-inch PVC
PORT6	Booster Pump Station	320 gpm / 40 hp/ 250 TDH Underground Booster Pump Station
STOR1	Water Storage Tank	250,000 gallons Elevated Storage Tank

Subject Item Groups:

ID	Description	Components
GACT5	124,312 feet of Water Line, 320 gpm Booster Pump Station and 250, 000 Gallons Water Storage Tank	PORT6 320 gpm / 40 hp/ 250 TDH Underground Booster Pump Station STOR1 250,000 gallons Elevated Storage Tank PORT5 6,475 feet of 3-inch PVC, 48, 974 feet of 4-inch PVC and 68,863 feet of 6-inch PVC

KEY

ACTV = Activity

AREA = Area

EQPT = Equipment

PERS = Personnel

STOR = Storage

AIOO = Agency Interest

COMB = Combustion

MNPT = Monitoring Point

PORT = Transport

STRC = Structure

Distribution-Major Construction

Todd Co Water District

Subject Item Inventory

Activity ID No.: APE20050001

KEY

TRMT = Treatment

Distribution-Major Construction

Todd Co Water District
Facility Requirements

Activity ID No.: APE20050001

Page 1 of 21

GACT5 (Clifty Tank and Sys. Ext.) 124,312 feet of Water Line, 320 gpm Booster Pump Station and 250, 000 Gallons Water Storage Tank:

Monitoring Requirements:

Condition No.	Parameter	Condition
M-1	Coliform	The presence or absence of total Coliform monitored by sampling and analysis as needed shall be determined for the new or relocated water line(s). Take samples at connection points to existing lines, at 1 mile intervals, and at dead ends without omitting any branch of the new or relocated water line. Sample bottles shall be clearly identified as "special" construction tests. [401 KAR 8:100 Section 1(7), 401 KAR 8:150 Section 4, Recommended Standards for Water Works 8.5.6] This requirement is applicable during the following months: All Year. Statistical basis: Instantaneous determination.
M-2	Coliform	The presence or absence of total Coliform monitored by sampling and analysis as needed shall be determined for the new storage structure(s). With at least 1 sample taken at least 24 hours after the first construction complete sample(s), take 2 or more samples from the yard hydrant, the outlet piping from the storage structure, or a sample tap directly connected to the storage structure. Sample bottles shall be clearly identified as "special" construction tests. [Recommended Standards for Water Works 7.0.18, 401 KAR 8:150 Section 4] This requirement is applicable during the following months: All Year. Statistical basis: Instantaneous determination.

Submittal/Action Requirements:

Coliform:

Condition No.	Condition
S-1	Coliform For new construction projects, the distribution system, using the most expedient method, shall submit Coliform test results to the Cabinet: Due immediately following disinfection and flushing. [401 KAR 8:150 Section 4(2)]

Distribution-Major Construction

Todd Co Water District
Facility Requirements

Activity ID No.: APE20050001

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Submittal/Action Requirements:

Condition No.	Condition
S-2	For proposed changes to the approved plan, submit information: Due prior to any modification to the Cabinet for approval. Changes to the approved plan shall not be implemented without the prior written approval of the Cabinet. [401 KAR 8:100 Section 1(8)]
S-3	The person who presented the plans shall submit the professional engineer's certification: Due when construction is complete to the Division of Water. The certification shall be signed by a registered professional engineer and state that the water project has been constructed and tested in accordance with the approved plans, specifications, and requirements. [401 KAR 8:100 Section 1(8)]

Narrative Requirements:

Additional Limitations:

Condition No.	Condition
T-1	Additional Limitations: Chlorinated water resulting from disinfection of project components shall be disposed in a manner which will not violate 401 KAR 5:031. [401 KAR 8:020 Section 2(20)]

Condition No.	Condition
T-2	This project has been permitted under the provisions of KRS Chapter 224 and regulations promulgated pursuant thereto. Issuance of this permit does not relieve the applicant from the responsibility of obtaining any other approvals, permits or licenses required by this Cabinet and other state, federal and local agencies. Further, this permit does not address the authority of the permittee to provide service to the area to be served. [401 KAR 8:100 Section 1(7)]
T-3	Unless construction of this project is begun within 1 year from the issuance date of this permit, the permit shall expire. If requested prior to the permit expiration, an official extension from the Division of Water may be granted. If this permit expires, the original plans and specifications may be resubmitted for a new comprehensive review. If you have any questions concerning this project, please contact the Drinking Water Branch at 502/564-3410. [401 KAR 8:100 Section 1(9)]

Distribution-Major Construction

Todd Co Water District
Facility Requirements

Activity ID No.: APE20050001

Narrative Requirements:

Condition No.	Condition
T-4	During construction, a set of approved plans and specification shall be available at the job site at all times. All work shall be performed in accordance with the approved plans and specifications. [401 KAR 8:100 Section 1(7)(a)]

Distribution-Major Construction

Todd Co Water District
Facility Requirements

Activity ID No.: APE20050001

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PORT5 (Water Line Ext. / Repl.) 6,475 feet of 3-inch PVC, 48, 974 feet of 4-inch PVC and 68,863 feet of 6-inch PVC:

Limitation Requirements:

Condition No.	Parameter	Condition
L-1	Depth	A continuous and uniform bedding shall be provided in the trench for all buried pipe. Backfill material shall be tamped in layers around the pipe and to a sufficient height above the pipe to adequately support and protect the pipe. Stones found in the trench shall be removed for a Depth ≥ 6 in below the bottom of the pipe. [Recommended Standards for Water Works 8.5.2] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.
L-2	Depth	All water lines shall be covered to a Depth ≥ 30 in to prevent freezing. [Recommended Standards for Water Works 8.5.3, 401 KAR 8:100 Section 1(7)] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-3	Diameter	All water lines shall have Diameter ≥ 3 in. [Recommended Standards for Water Works 8.1.4] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-4	Diameter	Water lines with Diameter < 6 in shall not have fire hydrants. [Recommended Standards for Water Works 8.1.5] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-5	Diameter	All new and existing water lines serving fire hydrants or where fire protection is provided shall have Diameter ≥ 6 in. [Recommended Standards for Water Works 8.1.2] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-6	Distance	Water lines shall have a sufficient quantity of valves so that inconvenience and sanitary hazards will be minimized during repairs. A valve spacing Distance ≤ 1.0 mi should be utilized. [Recommended Standards for Water Works 8.2] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.
L-7	Distance	Hydrant drains shall not be connected to sanitary sewers or storm drains and shall be located a Distance > 10 ft from sanitary sewers and storm drains. [Recommended Standards for Water Works 8.3.4] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.

Distribution-Major Construction

Todd Co Water District
Facility Requirements

Activity ID No.: APE20050001

Page 5 of 21

Limitation Requirements:

Condition No.	Parameter	Condition
L-8	Distance	<p>Except when not practical, water lines shall be laid a horizontal Distance \geq 10 ft from any existing or proposed sewer. The distance shall be measured edge to edge.</p> <p>In cases where it is not practical to maintain a 10 foot separation, water lines may be installed closer to a sewer provided that the water lines shall be laid in a separate trench or on an undisturbed shelf located on one side of the sewer at such an elevation that the bottom of the water line is at least 18 inches above the top of the sewer. [Recommended Standards for Water Works 8.6.2] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.</p>
L-9	Distance	<p>When water lines and sewers cross,</p> <ol style="list-style-type: none">1) water lines shall be laid such that the bottom of the water line is a vertical Distance \geq 18 in above the top of the sewer line,2) 1 full length of the water pipe shall be located so that both joints of the water pipe will be as far from the sewer as possible, and3) special structural support for the water and sewer pipes may be required. [Recommended Standards for Water Works 8.6.3] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable. <p>The open end of an air relief pipe from automatic valves shall be extended a Distance \geq 1.0 ft above grade and provided with a screened, downward-facing elbow. The pipe from a manually operated valve shall be extended to the top of the pit. Use of manual air relief valves is recommended wherever possible. [Recommended Standards for Water Works 8.4.2] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.</p>
L-10	Distance	<p>Pipes shall not be installed unless all points of the distribution system remain designed for ground level Pressure \geq 20 psi under all conditions of flow. [Recommended Standards for Water Works 8.1.1] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.</p>
L-11	Pressure	<p>Pressure \geq 30 psi must be available on the discharge side of all meters. [401 KAR 8:100 Section 4(2)] This requirement is applicable during the following months: All Year. Statistical basis: Instantaneous determination.</p>
L-12	Pressure	

Distribution-Major Construction

Todd Co Water District
Facility Requirements

Activity ID No.: APE20050001

Limitation Requirements:

Condition No.	Parameter	Condition
L-13	Residual Disinfection	<p>New or relocated water lines shall be thoroughly disinfected (in accordance with AWWA Standard C651) upon completion of construction and before being placed into service. To disinfect the new or relocated lines use chlorine or chlorine compounds in such amounts as to produce an initial disinfectant concentration of at least 50 ppm and a Residual Disinfection ≥ 25 ppm at the end of 24 hours. Follow the line disinfection with thorough flushing and place the lines into service if, and only if, Coliform monitoring applicable to the line does not show the presence of Coliform.</p> <p>If Coliform is detected, repeat flushing of the line and Coliform monitoring. If Coliform is still detected, repeat disinfection and flushing as if the line has never been disinfected. Continue the described process until monitoring does not show the presence of Coliform. [401 KAR 8:150 Section 4(1), Recommended Standards for Water Works 8.5.6] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.</p>
L-14	Velocity	<p>Except in underserved areas, each fire or flush hydrant shall be sized so that Velocity ≥ 2.5 ft/sec can be achieved in the water main served by the hydrant during flushing.</p> <p>Based on the hydraulic analysis/data submitted, the areas served by the following extension(s) are considered to be underserved:</p> <ul style="list-style-type: none"> a) Smith Road , b) KY HWY 507 c) KY HYW 189 . <p>This designation indicates that without improvements to the existing infrastructure, future extensions may not be able to provide the required minimum pressure of 30 psi on the discharge side of customers' meters. Without improvements to the infrastructure, future extensions may be denied. The underserved designation may be used to help prioritize areas under the Governor's 2020 plan for funding future infrastructure improvements. [Recommended Standards for Water Works 8.1.6.b, 401 KAR 8:100 Section 1(7)] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.</p>
L-15	Velocity	<p>Except in underserved areas, each fire or flush hydrant shall be sized so that Velocity ≥ 2.5 ft/sec can be achieved in the water main served by the hydrant during flushing.</p> <p>Based on the hydraulic analysis/data submitted, the areas served by the following extension(s) are considered to be underserved:</p> <ul style="list-style-type: none"> a) , b) . <p>This designation indicates that without improvements to the existing infrastructure, future extensions may not be able to provide the required minimum pressure of 30 psi on the discharge side of customers' meters. Without improvements to the infrastructure, future extensions may be denied. The underserved designation may be used to help prioritize areas under the Governor's 2020 plan for funding future infrastructure improvements. [Recommended Standards for Water Works 8.1.6.b, 401 KAR 8:100 Section 1(7)] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.</p>

Distribution-Major Construction

Todd Co Water District
Facility Requirements

Activity ID No.: APE20050001

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Monitoring Requirements:

Condition No.	Parameter	Condition
M-1	leaks	The presence or absence of leaks monitored by physical testing as needed shall be determined in all types of installed pipe. Pressure testing and leakage testing shall be in accordance with the latest edition of AWWA Standard C600. [Recommended Standards for Water Works 8.5.5] This requirement is applicable during the following months: All Year. Statistical basis: Instantaneous determination.

Narrative Requirements:

Additional Limitations:

Condition No.	Condition
T-1	Additional Limitations: Water line installation shall be in accordance with AWWA standards or manufacturer recommendations. [Recommended Standards for Water Works 8.5.1]
T-2	Additional Limitations: Pipes, fittings, valves and fire hydrants shall conform to the latest standards issued by the AWWA or NSF (if such standards exist). PVC and PE piping used must be certified to ANSI/NSF Standard 61. [Recommended Standards for Water Works 8.0.1]
T-3	Additional Limitations: At high points in water lines, where air can accumulate, provisions shall be made to remove the air by means of hydrants or air relief valves. Automatic air relief valves shall not be used in situations where manhole or chamber flooding may occur. [Recommended Standards for Water Works 8.4.1]
T-4	Additional Limitations: All tees, bends, plugs and hydrants shall be provided with reaction blocking, tie rods or joints designed to prevent movement. [Recommended Standards for Water Works 8.5.4]
T-5	Additional Limitations: For lines that dead end, a fire hydrant shall be required at the end of each 6 inch or larger diameter line and a flush hydrant shall be required at the end of each line that is less than 6 inches in diameter. [Recommended Standards for Water Works 8.1.6]
T-6	Additional Limitations: For each fire or flush hydrant, auxiliary valves shall be installed in the hydrant lead pipe. [Recommended Standards for Water Works 8.3.3]

Distribution-Major Construction

Todd Co Water District
Facility Requirements

Activity ID No.: APE20050001

Page 8 of 21

Narrative Requirements:

Additional Limitations:

Condition No.	Condition
T-7	<p>Additional Limitations: No flushing device, blow-off, or air relief valve shall be directly connected to any sewer. Chambers, pits or manholes containing valves, blow-offs, meters, or other such appurtenances shall not be directly connected to any storm drain or sanitary sewer. Such chambers, pits or manholes shall be drained to absorptions pits underground or to the surface of the ground where they are not subject to flooding by surface water. [Recommended Standards for Water Works 8.1.6, Recommended Standards for Water Works 8.4.3]</p>
T-8	<p>Additional Limitations: If water lines are installed or replaced in areas of organic contamination or in areas within 200 ft of underground or petroleum storage tanks, ductile iron or other nonpermeable materials shall be used in all portions of the water line installation or replacement. [401 KAR 8:100 Section 1(5)(d)6, Recommended Standards for Water Works 8.0.2]</p>
T-9	<p>Additional Limitations: No water pipe shall pass through or come in contact with any part of a sewer manhole. [Recommended Standards for Water Works 8.6.6]</p>
T-10	<p>Additional Limitations: If a fire sprinkler system is to be installed, a double check detector assembly approved for backflow prevention shall be utilized. The double check detector assembly of the system shall be accessible for testing. [401 KAR 8:100 Section 1(7)]</p>
T-11	<p>Additional Limitations: If water lines cross a stream or wetland, the provisions in the attached Water Quality Certification shall apply. If you have any questions please contact John Dovak of the Water Quality Branch at (502) 564-2225, extension 485. [401 KAR 8:100 Section 1(7)]</p>

Distribution-Major Construction

Todd Co Water District
Facility Requirements

Activity ID No.: APE20050001

Narrative Requirements:

Subfluvial Pipe Crossings:

Condition No.	Condition
T-12	<p>Subfluvial Pipe Crossings: For subfluvial pipe crossings, a floodplain construction permit will not be required pursuant to KRS 151.250 if the following requirements of 401 KAR 4:050 Section 2 are met.</p> <ol style="list-style-type: none">1) No material may be placed in the stream or in the flood plain of the stream to form construction pads, coffer dams, access roads, etc. during construction of pipe crossings.2) Crossing trenches shall be backfilled as closely as possible to the original contour.3) All excess material resulting from construction displacement in a crossing trench shall be disposed of outside the flood plain.4) For erodible channels, there shall be at least 30 inches of backfill on top of all pipe or conduit points in the crossing.5) For nonerodible channels, pipes or conduits in the crossing shall be encased on all sides by at least 6 inches of concrete with all pipe or conduit points in the crossing at least 6 inches below the original contour of the channel. [401 KAR 8:100 Section 1(7)]
T-13	<p>Subfluvial Pipe Crossings: For subfluvial pipe crossings greater than 15 feet in width,</p> <ol style="list-style-type: none">1) the pipe shall be of special construction, having flexible, restrained, or welded watertight joints, and2) valves shall be provided at both ends of water crossings so that the section can be isolated for testing or repair. <p>Valves shall</p> <ol style="list-style-type: none">a) be easily accessible,b) not be subject to flooding, andc) if closest to the supply source, be in a manhole with permanent taps made on each side of the valve to allow insertion of a small meter to determine leakage and for sampling purposes. [Recommended Standards for Water Works 8.7.2]

Distribution-Major Construction

Todd Co Water District
Facility Requirements

Activity ID No.: APE20050001

PORT6 (Booster Pump Station) 320 gpm / 40 hp/ 250 TDH Underground Booster Pump Station:

Limitation Requirements:

Condition No.	Parameter	Condition
L-1	Pressure	Pump stations shall be located or controlled so that intake Pressure \geq 20 psi is maintained during normal pump operation. [Recommended Standards for Water Works 6.4.b] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-2	Pressure	Pump stations shall be located or controlled so that an automatic cutoff or a low pressure controller maintains a Pressure \geq 10 psi in the suction line under all operating conditions. [Recommended Standards for Water Works 6.4.c] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-3	Residual Disinfection	New pumps shall be thoroughly disinfected (in accordance with AWWA Standard C651) upon completion of construction and before being placed into service. To disinfect new pumps use chlorine or chlorine compounds in such amounts as to produce an initial disinfectant concentration of at least 50 ppm and a Residual Disinfection \geq 25 ppm at the end of 24 hours. Follow the disinfection with thorough flushing and place each pump into service if, and only if, Coliform monitoring applicable to the pump does not show the presence of Coliform. If Coliform is detected, repeat flushing of the pump and Coliform monitoring. If Coliform is still detected, repeat disinfection and flushing as if the pump has never been disinfected. Continue the described process until monitoring does not show the presence of Coliform. [401 KAR 8:100 Section 1(7)] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-4	Slope	Pumping facilities shall be located and designed to maintain the sanitary quality of pumped water. As part of this, all pump station floors shall have Slope \geq 3 in per 10 ft to a suitable drain. [Recommended Standards for Water Works 6.2.e, Recommended Standards for Water Works 6.0, Recommended Standards for Water Works 6.1] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-5	Air Change Rate	Ventilation shall conform to existing local and/or state codes. At a minimum forced ventilation shall produce an Air Change Rate \geq 6 air change(s)/hr. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 6.2.5] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.

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Limitation Requirements:

Condition No.	Parameter	Condition
L-6	Height	<p>Pumping stations shall not be subject to flooding. To this end,</p> <ol style="list-style-type: none"> 1) grading around stations shall lead surface drainage away and 2) stations shall be elevated or protected to a Height ≥ 3 ft above the highest of the following: <ol style="list-style-type: none"> a) the 100-year flood elevation, or b) the highest recorded flood elevation. [Recommended Standards for Water Works 6.1.1, Recommended Standards for Water Works 6.0] <p>This requirement is applicable during the following months: All Year. Statistical basis: Minimum.</p>
L-7	Height	<p>When a pump station has pits or compartments which must be entered, stairways or ladders shall be provided between all floors. Stairs shall have risers with a Height ≤ 9 in, handrails on both sides, and treads with non-slip material wide enough for safety. [Recommended Standards for Water Works 6.2.3] This requirement is applicable during the following months: All Year. Statistical basis: Maximum.</p>

Narrative Requirements:

Additional Limitations:

Condition No.	Condition
T-1	<p>Additional Limitations: Pumping stations shall be so located that the proposed site will meet the requirements for hydraulics of the system. [Recommended Standards for Water Works 6.1]</p>
T-2	<p>Additional Limitations: Pumping stations shall be readily accessible at all times for servicing and repairs. [Recommended Standards for Water Works 6.1.1.b, Recommended Standards for Water Works 6.4.3]</p>
T-3	<p>Additional Limitations: Pumping stations shall be designed to prevent vandalism and protect against entrance of animals or unauthorized persons. [Recommended Standards for Water Works 6.1.1.d]</p>
T-4	<p>Additional Limitations: Pumping stations shall be of durable construction with outward-opening doors. [Recommended Standards for Water Works 6.2.b]</p>

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Additional Limitations:

Condition No.	Condition
T-5	<p>Additional Limitations: Pumping stations shall be fire and weather resistant. [Recommended Standards for Water Works 6.2.b]</p>
T-6	<p>Additional Limitations: Pumping stations shall have suitable pump gland discharges so that drainage from the glands is not onto the floor. [Recommended Standards for Water Works 6.2.f]</p>
T-7	<p>Additional Limitations: If underground structures are present at pumping stations, they shall waterproofed. [Recommended Standards for Water Works 6.2.d]</p>
T-8	<p>Additional Limitations: Pumping stations shall have adequate space for the installation of additional pumps. [Recommended Standards for Water Works 6.2.a]</p>
T-9	<p>Additional Limitations: Pumping stations shall have adequate space for the safe servicing of all equipment. [Recommended Standards for Water Works 6.2.a]</p>
T-10	<p>Additional Limitations: Pump stations shall have crane-ways, hoist beams, eyebolts, or other adequate facilities for servicing or removal of pumps, motors or other heavy equipment. [Recommended Standards for Water Works 6.2.2.a]</p>
T-11	<p>Additional Limitations: Pump stations shall have openings as needed for removal of heavy or bulky equipment. [Recommended Standards for Water Works 6.2.2.b]</p>
T-12	<p>Additional Limitations: Pump stations shall have a convenient tool board, or other facilities as needed, for proper maintenance of equipment. [Recommended Standards for Water Works 6.2.2.c]</p>
T-13	<p>Additional Limitations: In areas where excess moisture could cause safety hazards or damage to equipment, dehumidification shall be provided. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 6.2.6]</p>
T-14	<p>Additional Limitations: Electrical controls shall be located above grade. [Recommended Standards for Water Works 6.6.5]</p>

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Narrative Requirements:

Additional Limitations:

Condition No.	Condition
T-15	<p>Additional Limitations: All electrical equipment and work shall conform with the applicable state and local electrical codes and the National Electrical Code. [Recommended Standards for Water Works 6.5, Recommended Standards for Water Works 6.2.7]</p>
T-16	<p>Additional Limitations: Pump stations shall be adequately lighted throughout. [Recommended Standards for Water Works 6.2.7]</p>
T-17	<p>Additional Limitations: All automatic pump stations shall be provided with automatic signaling apparatus which will report when the station is out of service. All remote controlled stations shall be electrically operated and controlled and shall have signaling apparatus of proven performance. [Recommended Standards for Water Works 6.5]</p>
T-18	<p>Additional Limitations: Automatic or remote control pump stations shall be located or shall have control devices setup so that the range between start and cutoff pressure prevents excessive pump cycling. [Recommended Standards for Water Works 6.4.d]</p>
T-19	<p>Additional Limitations: Equipment shall be provided or other arrangements made to prevent surge pressures from activating controls which switch on pumps or activate other equipment outside the normal design cycle of operation. [Recommended Standards for Water Works 6.6.5]</p>
T-20	<p>Additional Limitations: Provisions shall be made to prevent energizing the motor in the event of a backspin cycle. [Recommended Standards for Water Works 6.6.5]</p>
T-21	<p>Additional Limitations: Pump stations shall be provided with enough heat to prevent freezing of equipment or treatment processes. [Recommended Standards for Water Works 6.2.4]</p>
T-22	<p>Additional Limitations: Pump stations shall have at least 2 pumps. Pumps shall be sized so that if any single pump is out of service, the remaining pump or pumps shall be capable of providing the peak demand on the station. [Recommended Standards for Water Works 6.3, Recommended Standards for Water Works 6.4.1]</p>
T-23	<p>Additional Limitations: Provisions shall be made for pump alternation. [Recommended Standards for Water Works 6.6.5]</p>

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Additional Limitations:

Condition No.	Condition
T-24	<p>Additional Limitations: Pumps shall</p> <ol style="list-style-type: none">have ample capacity to supply the peak demand against the required distribution system pressure without dangerous overloading,be driven by prime movers able to meet the maximum horsepower condition of the pumps,be provided readily available spare parts and tools, andbe served by control equipment that is properly protected against temperatures to be encountered. [Recommended Standards for Water Works 6.3]
T-25	<p>Additional Limitations: Pumps, their prime movers and accessories shall be controlled in such a manner that they will operate at rated capacity without dangerous overload. [Recommended Standards for Water Works 6.6.5]</p>
T-26	<p>Additional Limitations: Pump stations shall be located or controlled so that a bypass is available. [Recommended Standards for Water Works 6.4.e]</p>
T-27	<p>Additional Limitations: Pump stations shall contain indicating and totalizing metering of the total water pumped. Each pump shall have</p> <ol style="list-style-type: none">a standard pressure gauge on its discharge line anda compound gauge on its suction line. <p>Each pump should have a means for measuring the instantaneous volume per time discharge. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 6.4.2, Recommended Standards for Water Works 6.6.3]</p>
T-28	<p>Additional Limitations: Pumps shall be adequately valved to permit satisfactory operation, maintenance and repair of the equipment. Each pump shall have a positive-acting check valve on the discharge side between the pump and the shut-off valve. [Recommended Standards for Water Works 6.6.1]</p>
T-29	<p>Additional Limitations: Piping for pumps shall, in general,</p> <ol style="list-style-type: none">be designed so that the friction losses will be minimized,not be subject to contamination,have watertight joints,be protected against surge or water hammer,be provided with restraints where necessary, anda) be such that each pump has an individual suction line orb) be manifolded such that the lines insure similar hydraulic and operating conditions. [Recommended Standards for Water Works 6.6.2]

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Narrative Requirements:

Additional Limitations:

Condition No.	Condition
T-30	<p>Additional Limitations: To ensure continuous service when the primary power is interrupted, power supplied to pump stations shall be</p> <ul style="list-style-type: none">a) from at least 2 independent sources orb) from a primary source with a standby or auxiliary source provided. <p>If standby power is provided by onsite generators or engines, the fuel storage and fuel line must be designed to protect the water supply from contamination. [Recommended Standards for Water Works 6.6.6]</p>

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STOR1 (Water Storage Tank) 250,000 gallons Elevated Storage Tank:

Limitation Requirements:

Condition No.	Parameter	Condition
L-1	Depth	High and low level Depth ≥ 30 ft apart should not be allowed in storage structures providing pressure to a distribution system. [Recommended Standards for Water Works 7.3.2] This requirement is applicable during the following months: All Year. Statistical basis: Maximum.
L-2	Distance	To prevent excessive erosion of storage structure foundations, the overflow and main drain shall either a) discharge to concrete or other stable surfaces (splash pads) which extend a Distance ≥ 10 ft away from the base of the storage structure or b) discharge directly into a crushed stone pit that is at least 2' x 2' x 2' which is a Distance ≥ 10 ft away from the base of the storage structure. [401 KAR 8:100 Section 1(7)] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-3	Height	Tanks shall have an overflow which is a) brought down to a Height ≥ 12 and ≤ 24 in above the ground surface, b) of sufficient diameter to permit waste of water in excess of the filling rate, c) open downward, d) screened with twenty-four mesh noncorrodible screen installed within the pipe at a location least susceptible to damage by vandalism, and e) when not internal, e) i) located on the outside of the tank so that any discharge is visible, when internal, e) ii) located in the access tube. [Recommended Standards for Water Works 7.0.7] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.
L-4	Height	Tanks shall have manholes that are a) framed a Height ≥ 4 in above the surface of the roof at the opening and b) fitted with a solid watertight cover which overlaps the framed opening and extends down around the frame at least 2 inches. Manholes should be hinged at one side and shall have a locking device. [Recommended Standards for Water Works 7.0.8] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.

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Narrative Requirements:

Additional Limitations:

Condition No.	Condition
T-1	<p>Additional Limitations: The materials and designs used for storage structures shall provide stability and durability as well as protection for the quality of the stored water. Steel structures shall follow the AWWA standards wherever they are applicable. Other materials of construction are acceptable when properly designed to meet the requirements in this permit. [Recommended Standards for Water Works 7.0]</p>
T-2	<p>Additional Limitations: The safety of employees must be considered in the design of any tank. The design of tanks shall</p> <ol style="list-style-type: none">meet or exceed the minimum requirements of pertinent safety laws and regulations in the areas where the tanks are constructed,include ladders, ladder guards and balcony railings (where applicable),locate entrance hatches in safe places,provide railings or handholds where persons must transfer from an access tube to the water compartment, andconsider confined space entry requirements. <p>Additionally, if tanks have riser pipes over 8 inches in diameter, the tanks shall have protective bars over the riser openings inside of the tank. [Recommended Standards for Water Works 7.0.12]</p>
T-3	<p>Additional Limitations: Storage structures shall be designed with reasonably convenient access to the interior for cleaning and maintenance. Where space permits, at least 2 manholes shall be provided above the waterline at each water compartment. [Recommended Standards for Water Works 7.0.8]</p>
T-4	<p>Additional Limitations: Fencing, locks on access manholes, and other necessary precautions shall be provided to prevent trespassing, vandalism, and sabotage. [Recommended Standards for Water Works 7.0.4]</p>
T-5	<p>Additional Limitations: All storage structures and their appurtenances, especially the riser pipes, overflows, and vents, shall be designed to prevent freezing. [Recommended Standards for Water Works 7.0.13]</p>
T-6	<p>Additional Limitations: Tanks shall be constructed with no openings except properly constructed vents, manholes, overflows, risers, drains, control ports, and piping for inflow and outflow. Any pipes running through the roof or sidewall must be welded or properly gasketed. [Recommended Standards for Water Works 7.0.10]</p>
T-7	<p>Additional Limitations: All finished water storage structures shall have suitable watertight roofs and sidewalls which exclude birds, animals, insects, and excessive dust. [Recommended Standards for Water Works 7.0.3, Recommended Standards for Water Works 7.0.10]</p>

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Additional Limitations:

Condition No.	Condition
T-8	<p>Additional Limitations: The roof of each storage structure shall be well drained. Downspout pipes shall not enter or pass through storage structures. Parapets or similar structures which would tend to hold water and snow on a storage structure roof shall not be approved unless adequate waterproofing and drainage are provided. [Recommended Standards for Water Works 7.0.11]</p>
T-9	<p>Additional Limitations: Storage structures shall be designed so they can be isolated from the distribution system and drained for cleaning or maintenance without necessitating loss of pressure in the distribution system. [Recommended Standards for Water Works 7.3.2, Recommended Standards for Water Works 7.0.5]</p>
T-10	<p>Additional Limitations: Storage structure drains shall discharge to the ground surface at a drainage structure inlet or splash plate. [Recommended Standards for Water Works 7.3.2, Recommended Standards for Water Works 7.0.7]</p>
T-11	<p>Additional Limitations: No drain on a storage structure may have a direct connection to a sewer or storm drain. [Recommended Standards for Water Works 7.0.5, Recommended Standards for Water Works 7.0.7, Recommended Standards for Water Works 7.3.2]</p>
T-12	<p>Additional Limitations: Main drains from storage structures shall have a twenty-four mesh noncorrodible screen installed within the drain pipe at a location least susceptible to damage by vandalism. [401 KAR 8:100 Section 1(7)]</p>
T-13	<p>Additional Limitations: Storage structures shall be designed to facilitate turn over of water. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 7.0.6]</p>
T-14	<p>Additional Limitations: Storage structures shall have sufficient capacity, as determined from engineering studies, to meet domestic demands. Additionally, if fire protection is provided, capacity shall also be sufficient to meet fire flow demands. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 7.0.1]</p>
T-15	<p>Additional Limitations: Storage structure discharge pipes shall be located in a manner that will prevent the flow of sediment into the distribution system. Additionally, removable silt stops should be provided. [Recommended Standards for Water Works 7.0.15]</p>

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Additional Limitations:

Condition No.	Condition
T-16	<p>Additional Limitations: Appropriate sampling tap(s) shall be provided to facilitate collection of water samples for both bacteriologic and chemical analyses. [Recommended Standards for Water Works 7.0.19]</p>
T-17	<p>Additional Limitations: Storage structures shall be vented. Overflows shall not be considered as vents. Open construction between the sidewall and roof is not permitted. Vents shall</p> <ul style="list-style-type: none">a) prevent the entrance of rainwater,b) exclude birds and animals, andc) exclude insects and dust (as much as compatible with effective venting). <p>Vents may use four-mesh noncorrodible screen. [Recommended Standards for Water Works 7.0.9]</p>
T-18	<p>Additional Limitations: Adequate controls shall be provided to maintain levels in storage structures. The level controls shall be acceptable to the Division of Water. Level indicating devices should be provided at a central location. Overflow and low-level warnings or alarms should be located at places in the community where they will be under responsible surveillance 24 hrs a day. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 7.3.3]</p>
T-19	<p>Additional Limitations: If storage structures have a catwalk over the water, the catwalk floor shall be solid with raised edges so that shoe scrapings and dirt will not fall into the water. [Recommended Standards for Water Works 7.0.14]</p>
T-20	<p>Additional Limitations: Proper protection shall be given to metal surfaces by</p> <ul style="list-style-type: none">a) paints or other protective coatings and/orb) cathodic protective devices. [Recommended Standards for Water Works 7.0.17]
T-21	<p>Additional Limitations: If cathodic protection is utilized,</p> <ul style="list-style-type: none">a) competent technical personnel should design and install the protection andb) a maintenance contract should be provided. [Recommended Standards for Water Works 7.0.17]
T-22	<p>Additional Limitations: If the interior of the storage structure is coated or lined, the coating or lining shall be of a type approved by the Division of Water for use in contact with potable water. [401 KAR 8:020 Section 2(19)]</p>

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Additional Limitations:

Condition No.	Condition
T-23	<p>Additional Limitations: Paints and coatings</p> <ol style="list-style-type: none">shall meet NSF standard 61,shall be acceptable to the Division of Water,shall be properly applied and cured, andshall not transfer any substance to the water which will be toxic or cause tastes or odors (following curing). <p>Wax coatings shall not be used in any storage structure and must be completely removed before using other paints or coatings in an existing storage structure. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 7.0.17]</p>
T-24	<p>Additional Limitations: New water storage structures shall be thoroughly disinfected (in accordance with AWWA Standard C652) upon completion of construction and before being placed into service. To disinfect new storage structures</p> <ol style="list-style-type: none">remove all scaffolding, planks, tools, rags, and other items that are not part of the structural or operational facilities of the storage structure,clean thoroughly by sweeping, scrubbing, using high-pressure water jets, or some equivalently effective means, anduse chlorine or chlorine compounds as subsequently described. <p>Finalize disinfection by</p> <ol style="list-style-type: none">chlorination method 1, described in detail at AWWA Standard C652 Section 4.3.1,chlorination method 2, described in detail at AWWA Standard C652 Section 4.3.2, orchlorination method 3, described in detail at AWWA Standard C652 Section 4.3.3. <p>See the following conditions for abbreviated descriptions of the methods. Following the finalization of disinfection, place storage structures into service if, and only if, Coliform monitoring applicable to the storage structure does not show the presence of Coliform. If Coliform is detected, flush the tank and repeat Coliform monitoring. If Coliform is still detected, repeat disinfection and flushing as if the tank has never been disinfected. Continue the described process until monitoring does not show the presence of Coliform. [Recommended Standards for Water Works 7.0.18]</p>

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Narrative Requirements:

Condition No.	Condition
T-25	<p>If applicable, chlorination method 1 generally requires</p> <ul style="list-style-type: none">a) filling a storage structure to the overflow level with water providing a free chlorine Residual Disinfection ≥ 10 ppm andb) i) completely draining the storage facility and refilling orb) ii) otherwise reducing (in accordance with method 1) the free chlorine residual to a level appropriate for distribution. [Recommended Standards for Water Works 7.0.18]
T-26	<p>If applicable, chlorination method 2 generally requires</p> <ul style="list-style-type: none">a) scrubbing or spraying the water-contact surfaces of a storage structure with a water solution having an available chlorine concentration = 200 ppm andb) purging of the strong chlorine solution and filling to the overflow level. [Recommended Standards for Water Works 7.0.18]
T-27	<p>If applicable, chlorination method 3 generally requires</p> <ul style="list-style-type: none">a) filling a storage structure to approximately 5% of the total storage volume with water having an available chlorine concentration of 50 ppm,b) continued filling of the storage structure to the overflow level with normal potable water, andc) purging the storage structure so that various disinfection by-products do not reach water consumers. [Recommended Standards for Water Works 7.0.18, 401 KAR 8:100 Section 1(7)]