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PROFESSIONAL SERVICE CORPORATION
124 WEST TODD STREET
FRANKFORT, KENTUCKY 40601

**Telephone: (502) 227-7270** **jnhughes@johnnhughespsc.com**

September 3, 2015

Mr. Jeff Derouen
Executive Director
Public Service Commission
211 Sower Blvd.
Frankfort, KY 40601

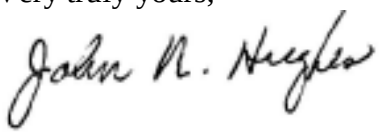
Re: Northern Kentucky Water District:
Case No. 2015-00295

Dear Mr. Derouen:

Northern Kentucky Water District submits its application for a certificate of convenience and necessity and financing. I certify that the electronic filing is a complete and accurate copy of the original documents to be filed in this matter, which will be filed within two days of this submission.

If you have any questions about this matter, please contact me.

Very truly yours,



John N. Hughes

Attorney for Northern Kentucky
Water District

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

| | | |
|---|---|---|
| APPLICATION OF NORTHERN KENTUCKY WATER DISTRICT FOR APPROVAL OF THE REPLACEMENT OF THE LUMLEY WATER TANK, ISSUANCE OF A CERTIFICATE OF CONVENIENCE AND NECESSITY AND APPROVAL OF FINANCING | ) ) ) ) ) ) | CASE NO. 2015-00295 |

**APPLICATION FOR APPROVAL OF CONSTRUCTION AND FINANCING**

Northern Kentucky Water District (NKWD), by counsel, petitions for an order approving the construction the Lumley Water Tank as described below pursuant to KRS 278.020. Approval of the financing pursuant to KRS 278.300 is also requested.

In support of the application, the following information is provided:

1. NKWD's office address is 2835 Crescent Spring Rd., Erlanger, KY 41018-0640. Its principal officers are listed in its current Annual Report on page 6, which is filed with the Commission as are its prior years Reports and is incorporated by reference.

Its contact officer is:

Jack Bragg, Vice President Finance
2835 Crescent Spring Rd.
Erlanger, KY 41018-0640
(859) 578 9898 Phone
(859) 578-3668 fax
jbragg@nkywater.org

2. NKWD is a non-profit water district organized under Chapter 74 and has no separate articles of incorporation;

3. A description of NKWD's water system and its property stated at original cost by accounts is contained in its Annual Report, which is incorporated by reference.

4. NKWD serves retail customers in Kenton, Boone and Campbell Counties and sells water at wholesale to non-affiliated water distribution systems in Kenton, Boone, Pendleton and Campbell Counties.

5. NKWD proposes to construct new facilities as described in Exhibit A. The project consists of removal of the existing 80 year old obsolete 275,000 gallon storage tank and replacing it with a 400,000 multi-column tank. The recommended award amount for construction is $1,702,000. The estimated cost of the total project with engineering, construction, and contingencies is $2,000,000.

6. This project will be paid from the District's Five-Year Capital Budget, PSC No. 226 "Replace Lumley Tank" with a budget of $2,000,000 which includes construction cost, engineering, and contingencies. A summary of the project costs is provided below:

| | |
|---|---|
| ○ Design Engineering | $ 87,000 |
| ○ Construction Engineering | $ 23,000 |
| ○ Contractor's Bid | $1,702,000 |
| ○ Misc. & Contingencies | $ 188,000 |
| Total Project Cost | $2,000,000 |

The project will be funded using $800,000 from SRF Loan F15-011 and $1,200,000 from a future Bond Anticipation Note. The financing documents are attached as exhibit D. Northern was awarded a $4,000,000 loan by KIA. This is one of six projects funded by this SRL $4,000,000 loan. Northern is seeking approval of the total $4,000,000 in this application. Most of the projects are main replacements and are treated as ordinary extensions. Other projects requiring Commission approval funded by this loan will be submitted for approval as they are bid.

The list of other projects included in this KIA award are:

| Contract | Project | Construction SRF Loan | Construction Cost by NKWD | Subtotal Other NKWD Costs | Total Project Cost |
|---|---|---|---|---|---|
| 1 | Edgewood Water Main Replacement (5 streets) | $1,300,000 | $209,575 | $301,915 | $1,811,490 |
| 2 | Newport Water Main Replacement (5 streets) | $600,000 | $27,000 | $125,400 | $752,400 |
| 3 | Newport Water Main Replacement (2 streets) | $300,000 | $72,750 | $110,550 | $483,300 |
| 4 | Woodlawn Water Main Replacement (6 streets) | $500,000 | $74,700 | $114,940 | $689,640 |
| 5 | Burdsall Water Main Replacement | $500,000 | $57,500 | $112,500 | $670,000 |
| 6 | Lumley Tank Replacement | $800,000 | $902,000 | $298,000 | $2,000,000 |
| **Total** | **Total** | **$4,000,000** | **$1,291,525** | **$1,115,305** | **$6,406,830** |

. Because the BAN is temporary financing for fewer than two years, NKWD believes no approval of that portion of the financing is necessary. However, if approval pursuant to KRS 278.300 is needed, such approval is requested.

7. The construction is in the public interest and is required to allow NKWD to continue to provide adequate service to its customers. The project, its cost, need and other details are contained in Exhibit A. The District has received all approvals from the DOW for the Plans and Specifications and funding for these improvements. See Exhibit B.

8. Easements and rights of way are not required, see Exhibit B. The District is obtaining temporary construction easements for property near the construction site to provide a safety zone during construction. These are not required, but are recommended to minimize danger to the public.

9. This service will not compete with any other utility in the area.

10. The proposed construction project identified in Exhibit A is scheduled to begin construction in upon PSC approval and the expected in service date is in November, 2016. Board approval of the final bids for the project is included in Exhibit C. The bids were opened August 6, 2015 and are subject to acceptance for 90 days. Therefore, **the bids will expire November 4, 2015.**

11. No new franchises are required. A copy of the DOW letter approving the Plans and Specifications for the proposed improvements is attached as Exhibit B.

12. Construction descriptions are in Exhibit A and Bid Documents. Facts relied on to justify the public need are included in the project descriptions in Exhibit A.

13. Maps of the area showing location of the proposed facilities are in Exhibit A.

14. The construction costs will be funded by as described above.

15. Estimated operating costs for operation and maintenance, depreciation and debt service after construction are shown in Exhibit D.

16. A description of the facilities and operation of the system are in Exhibit A.

17. A full description of the route, location of the project, description of construction and related information is in Exhibit A.

18. The start date for construction is November, 2015 or upon PSC approval. The proposed in-service date is November, 2016. The total estimated cost of construction at completion is referenced in Exhibits A, B and D.

19. CWIP at end of test year is listed in the Annual Report incorporated by reference.

20. Plant retirements are listed in Exhibit B and the Annual Report. No salvage values are included as booked.

21. The use of the funds and need for the facilities is justified based on a the engineering report included as Exhibit A

22. No rate adjustment is being proposed.

23. The following information is provided in response to 807 KAR 5:001 (8):

a. Articles of Incorporation – None. NKWD is a statutorily created water district under KRS Chapter 74;

24. The following information is supplied pursuant to 807 KAR 5:001(9):

a. Facts relied upon to show that the application is in the public interest: See Exhibit A.

25. The following information is provided as required by 807 KAR 5:001 (11):

a. A general description of the property is contained in the Annual Report,

b. No stock is to be issued; No bonds are to be issued in this case;

c. There is no refunding or refinancing;

d. The proceeds of the financing are to construct the property described in Exhibit A.

e. The par value, expenses, use of proceeds, interest rates and other information is not applicable because no bonds are being issued at this time.

26. The following exhibits are provided pursuant to 807 KAR 5:001 (11)(2):

a. There are no trust deeds. All notes, indebtedness and mortgages are included in Exhibit F.

b. Property is to be constructed is described in Exhibit A.

27. The following information is provided pursuant to 807 KAR 5:001(6):

a. No stock is authorized.

b. No stock is issued.

c. There are no stock preferences.

d. Mortgages are listed in Exhibit E.

e. Bonds are listed in Exhibit E.

f. Notes are listed in Exhibit E.

g. Other indebtedness is listed in Exhibit E.

h. No dividends have been paid.

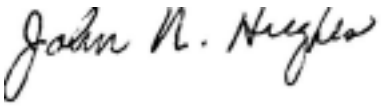
i. Current balance sheet, income statement and debt schedule are attached as Exhibit F.

28. USoA plant accounts are included in Exhibit D.

29. Depreciation cost, cost of operation after installation and debt service are in Exhibit D.

For these reasons, the District requests issuance of an order granting authority to construct and finance the facilities and for any other authorization that may be necessary.

SUBMITTED BY:



John N. Hughes
124 W. Todd St.
Frankfort, KY 40601

Attorney for Northern
Kentucky Water District
jnhughes@johnnhughespsc.com
502 227 7270 Ph.

## LIST OF EXHIBITS

| | | |
|---|---|---|
| Section 8(1) | Full name and post office address of applicant and a reference to the particular provision of law requiring Commission approval. | Application |
| Section 8(2) | The original and 10 copies of the application with an additional copy for any party named therein as an interested party. | yes |
| Section 8(3) | If applicant is a corporation, a certified copy of the Articles of Incorporation and all amendments thereto or if the articles were filed with the PSC in a prior proceeding, a reference to the style and case number of the prior proceeding. | n/a |
| Section 9(2) | 1. The facts relied upon to show that the proposed new construction is or will be required by public convenience or necessity. | Exhibit A |
| | 2. Copies of franchises or permits, if any, from the proper public authority for the proposed new construction or extension, if not previously filed with the commission. | Exhibit B |
| | 3. A full description of the proposed location, route, or routes of the new construction or | Exhibit A |

| | | |
|---|---|---|
| | extension, including a description of the manner in which same will be constructed, and also the names of all public utilities, corporations, or persons with whom the proposed new construction or extension is likely to compete. | |
| | 4. Three (3) maps to suitable scale (preferably not more than two (2) miles per inch) showing the location or route of the proposed new construction or extension, as well as the location to scale of any like facilities owned by others located anywhere within the map area with adequate identification as to the ownership of such other facilities. | Exhibit A |
| | 5. The manner, in detail, in which it is proposed to finance the new construction or extension. | Exhibits A, D |
| | 6. An estimated cost of operation after the proposed facilities are completed. | Exhibit D |
| KRS 322.340 | Engineering plans, specifications, plats and report for the proposed construction. The engineering documents prepared by a registered engineer, requires that they be signed, sealed, and dated by an engineer registered in Kentucky. | Exhibit A |
| Section 8(1) | Full name and post office address of applicant and a reference to the particular provision of law requiring Commission approval. | Application |
| Section 8(2) | The original and 10 copies of the application with an additional copy for any party named therein as an interested party. | yes |
| Section 8(3) | If applicant is a corporation, a certified copy of the Articles of Incorporation and all amendments thereto or if the articles were filed with the PSC in a prior proceeding, a reference to the style and case number of the prior proceeding. | n/a |
| KRS 278.300(2) | Every financing application shall be made under oath, and shall be signed and filed on behalf of the utility by its | Application |

| | | |
|---|---|---|
| | president, or by a vice president, auditor, comptroller or other executive officer having knowledge of the matters set forth and duly designated by the utility. | |
| 807 KAR 5:001: | | |
| Section 11(1)(a) | Description of applicant's property. | |
| | Statement of original cost of applicant's property and the cost to the applicant, if different. | Annual Rpt |
| Section 11(1)(b) | If stock is to be issued: and kinds to be issued. | none |
| | --Description of amount and kinds to be issued. | |
| | --If preferred stock, a description of the preferences. | none |
| | If Bonds or Notes or Other Indebtedness is proposed: | Exhibit E |
| | --Description of the amount(s) | |
| | --Full description of all terms | |
| | --Interest rates(s) | |
| | --Whether the debt is to be secured and if so a description of how it's secured. | |
| Section 11(1)(c) | Statement of how proceeds are to be used. Should show amounts for each type of use (i.e., property, debt refunding, etc.) | Exhibit A |
| 807 KAR 5:001: | | |
| Section 11(1)(d) | If proceeds are for property acquisition, give a full description thereof. Supply any contracts. | n/a |
| Section 11(1)(e) | If proceeds are to refund outstanding obligations, give: | n/a |
| | --Par value | |
| | --Amount for which actually sold | |
| | --Expenses and application of proceeds | |
| | --Date of obligations | |
| | --Total amount | |

| | | |
|---|---|---|
| | --Time held | |
| | --Interest rate | |
| | --Payee | |
| Section 11(2)(a) | Financial Exhibit (see below) | |
| Section 11(2)(b) | Copies of all trust deeds or mortgages. If previously filed, state case number. | Annual Rpt |
| Section 11(2)(c) | If Property to be acquired: | Exhibit A |
| | --Maps and plans of property. | |
| Section 11(2)(c) | --Detailed estimates by USOA account number. | Exhibit D |

**ALL INFORMATION BELOW IN SECTIONS 6(1) THROUGH 6(9) SHOULD COVER THE PERIOD ENDING NOT MORE THAN 90 DAYS PRIOR TO DATE ON WHICH APPLICATION WAS FILED:**

| | | |
|---|---|---|
| 807 KAR 5:001 | | |
| Section 6(1) | Amount and types of stock authorized. | None |
| Section 6(2) | Amount and types of stock issued and outstanding. | None |
| Section 6(3) | Detail of preference terms of preferred stock. | None |
| Section 6(4) | <u>Mortgages:</u> | Exhibit E |
| | --Date of Execution | |
| | --Name of Mortgagor | |
| | --Name of Mortgagee or Trustee | |
| | --Amount of Indebtedness Secured | |
| | --Sinking Fund Provisions | |
| Section 6(5) | <u>Bonds</u> | Exhibit E |
| | --Amount Authorized | |
| | --Amount Issued | |
| | --Name of Utility Who Issued | |
| | --Description of Each Class Issued | |

| | | |
|---|---|---|
| | --Date of Issue | |
| | --Date of Maturity | |
| | --How Secured | |
| | --Interest Paid in Last Fiscal Year | |
| Section 6(6) | Notes Outstanding: | Exhibit E |
| | --Date of Issue | |
| | --Amount | |
| | --Maturity Date | |
| | --Rate of Interest | |
| | --In Whose Favor | |
| | --Interest Paid in Last Fiscal Year | |
| Section 6(7) | Other Indebtedness: | |
| | --Description of Each Class | |
| | --How Secured | |
| | --Description of Any Assumption of Indebtedness by Outside Party (i.e., any transfer) | |
| | --Interest Paid in Last Fiscal Yr. | none |
| Section 6(8) | Rate and amount of dividends paid during the five (5) previous fiscal years and the amount of capital stock on which dividends were paid each year. | None |
| Section 6(9) | Detailed income statement and balance sheet. | Exhibits F |

# NORTHERN KENTUCKY WATER DISTRICT

## ***Project***
## ***Lumley Tank Replacement***

Campbell County
184-0487

# NORTHERN KENTUCKY WATER DISTRICT
## Lumley Tank Replacement
### 184-487

## TABLE OF CONTENTS

Case No. 2015-00295
Exhibit A

# NORTHERN KENTUCKY WATER DISTRICT

## *Project*
## *Lumley Tank Replacement*

Campbell County
184-0487

# ENGINEERING REPORTS AND INFORMATION

Project Map

Basis of Design Report

Engineer's Opinion of Probable Total Construction Cost

Plans prepared by GRW titled "Lumley Tank Replacement" dated July 2015

Specifications prepared by GRW titled
"Lumley Tank Replacement" dated July 2015

# Lumley Tank Replacement

Project 184-487

***Project Description:***

The Lumley Tank Replacement project will demolish an existing 275,000 gallon elevated storage tank built in 1936 and construct a new storage tank in its place. The existing tank is approaching 80 years old and is it the end of its useful life.

The District's 2008 Asset Management Program recommended providing 240,000 gallons of additional storage in this portion of the service area, which is supplied by the Lumley Tank and the Rossford Tank. The District solicited bids for the Lumley Tank Replacement using a 500,000 gallon tank as the base bid, with alternates for 400,000 gallons and 300,000 gallons. The bids also allowed two different tank styles to be bid.

The base bid amount for a 500,000 gallon tank exceeded the District's budget, so it was recommended to select the alternate bid for a 400,000 gallon multi-column tank. This approach will provide 125,000 gallon of additional storage while keeping the project within the proposed budget. The additional 115,000 gallons of recommended storage is planned through future replacement of the Rossford Tank.

The recommended award amount for construction is $1,702,000.

The bids were opened August 6, 2015 and are subject to acceptance for 90 days. Therefore, the bids will expire November 4, 2015.

The estimated cost of the total project with engineering, construction, and contingencies is $2,000,000.

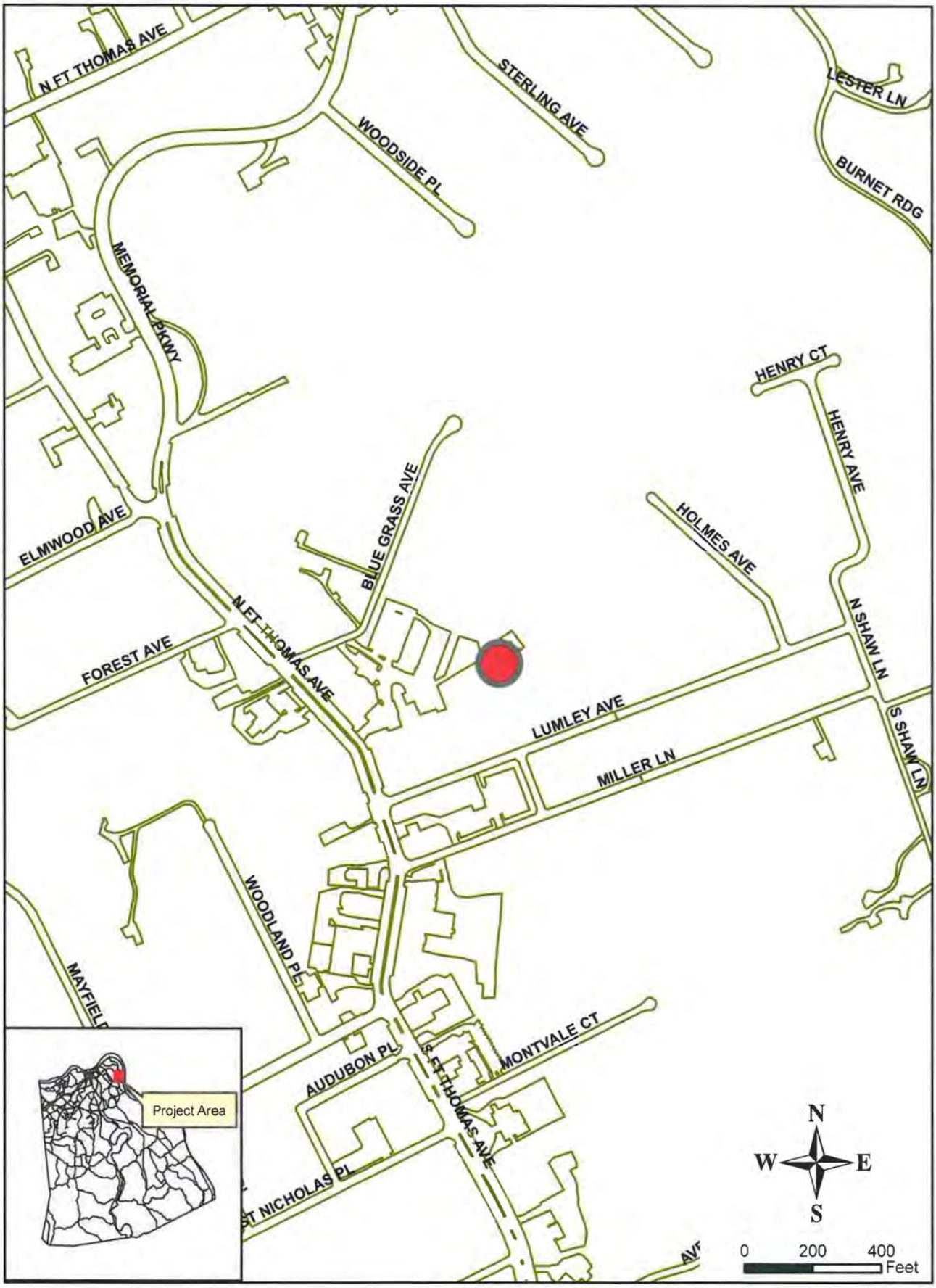
Case No. 2015-00295
Exhibit A

# NORTHERN KENTUCKY WATER DISTRICT

## ***Project***
## ***Lumley Tank Replacement***

Campbell County
184-0487

Project Map




# Phase 6 - Replace Lumley Tank

Case No. 2015-0000295
Exhibit ___A_____

# NORTHERN KENTUCKY WATER DISTRICT

## ***Project***
## ***Lumley Tank Replacement***

Campbell County
184-0487

## Basis of Design Report

Preliminary Engineering Report

# Lumley Tank Replacement

Northern Kentucky Water District
Fort Thomas, KY

August 6, 2015

ALAN A BRYAN 20964 LICENSED PROFESSIONAL ENGINEER

GRW engineering | architecture | geospatial

GRW | 9710 Bunsen Parkway | Louisville, KY 40299 | 502.489.8484

**NORTHERN KENTUCKY WATER DISTRICT**
**LUMLEY TANK REPLACEMENT**

**PRELIMINARY ENGINEERING REPORT**
**August 6, 2015**

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## LIST OF FIGURES

**NORTHERN KENTUCKY WATER DISTRICT**
**LUMLEY TANK REPLACEMENT**

**PRELIMINARY ENGINEERING REPORT**
**August 6, 2015**

## 1.0 BACKGROUND

The Northern Kentucky Water District (NKWD) has identified a need to replace their existing 275,000 gallon Lumley water storage tank located in the City of Fort Thomas, Kentucky. This existing tank is located behind the City of Fort Thomas administration offices on a 2.93 acre lot owned by the NKWD. Entry to the tank site is by two (2) access drives that encroach across the City's property.

## 2.0 DESIGN CONSIDERATIONS

The following items were considered during development of the design for the new Lumley Tank.

### A. New Tank Location

The NKWD site for the existing Lumley Tank while quite large, is very limiting with respect to providing locations for the new water tank. The lower parking lot and grassed area behind the parking lot were filled sometime after the construction of the existing tank with an estimated 10 to 28 feet of fill material. From observations, it is anticipated that the entire fill is constructed of debris such as broken chunks of reinforced and unreinforced concrete, roofing materials, etc. mixed with soil fill. The remaining undisturbed portion of the site (i.e. – the wooded area) has lower elevations, steep topography and poor access. These conditions deem the majority of the site undesirable for the construction of a new tank. Therefore, the only realistic location for the new tank is to build it as physically close to the existing tank footprint as possible in native material, bearing on bedrock and avoiding the fill area.

### B. Tank Style

The basic styles of tank that were considered for the new Lumley Tank include Multi-Column Tank, Fluted Column Tank, Composite Tank and Pedesphere Tank. Most tank erectors offer multiple bowl configurations as well. In general, the higher head range offerings are generally more cost effective because of lower quantities of plate steel. Further, the Multi-Column Tank has two leg configurations: plumb legs and battered legs. The size, height and real estate constraints for the new Lumley Tank will make battered columns cost prohibitive for a multi-leg tank. The volume of the tank also has a definite impact on tank geometry and economy. In addition, each of these different tank styles/configurations has differing

foundation implications.

### C. Site Setback Requirements and Variance

The existing Lumley Tank is located very close to the NKWD property lines to the east and south of the tank. The center of the existing tank is roughly 30 feet from the property line to the east and 40 feet from the property line to south of the tank. The tank legs are even closer to the property lines.

The City of Fort Thomas Zoning Ordinance states that utility buildings or structures, such as water treatment plants, pumps stations, standpipes, etc., must be set back 50 feet from any property line. Obviously the existing tank is not in compliance with this requirement and neither will the new tank be if it is constructed close to the same location as the existing tank.

The Zoning Ordinance addresses structures that were constructed before the adoption of the ordinance that do not conform to the ordinance regulations (nonconforming structures). Basically, the ordinance states that nonconforming structures can continue to be operated but cannot be enlarged and that the removal or destruction of nonconforming structures terminates their nonconforming status. Therefore, the new tank is required to comply with the Zoning Ordinance for setback distances.

However, if a project is unable to maintain the setbacks as set forth in the Zoning Ordinance, a variance can be requested from the City of Fort Thomas Board of Adjustment. This requires an application be submitted to the Board. NKWD submitted a request to the Board of Adjustment for a setback variance for the proposed location of the new Lumley Tank. The City of Fort Thomas granted NKWD this variance.

## 3.0 DESIGN APPROACH

Subsequent to considerations and discussions with NKWD about the above items, the following design approach will be taken for final design of the new Lumley Tank.

### A. Tank Location

As previously stated, the location of the existing Lumley Tank is the most desirable location on the NKWD site to construct the new tank. NKWD has indicated that the existing tank can be removed completely before the new tank is constructed. The existing tank location provides the shallowest footings in native soil and allows the footings to rest on bedrock. The new tank will be located as close to the location of the existing tank footprint as possible. Refer to Figure A – "Site Plan" for the general proposed location of the new Lumley Tank.

## B. Tank Manufacturers / Fabricators

The design drawings and specifications for the new Lumley Tank will be based on documents and input from Caldwell Tanks located in Louisville, Kentucky. Caldwell has been building customized water tanks throughout the world since 1887. However, since this project is being funded by the State Revolving Fund (SRF), the project specifications will not require the new tank to be manufactured/fabricated by a specific manufacturer. A Qualifications section will be included in the elevated water tank specification requiring the tank manufacturer have at least five years' experience with elevated tank construction by demonstrating design and construction of at least five elevated water storage tanks of the selected style.

## C. Tank Style, Capacity and Elevations

Through discussions and a site visit with Caldwell Tanks, it appears that the multi-column, composite and pedesphere style tanks would all be possible styles for the new Lumley Tank based on site constraints and the project budget. Upon further discussions with NKWD, the decision was made to prepare the contract documents for both the Multi-Column and Pedesphere style tanks and allow the Contractor to bid on one or both styles of tank.

Due to the deferment of another tank project, NKWD would like to upsize the new Lumley Yank to have a capacity of 500,000 gallons. However, due to budget constraints, they may consider a smaller capacity tank. The Bid Form and contract documents will be prepared with deductive alternates for a 400,000 gallon tank and a 300,000 gallon tank.

Below is a summary of preliminary budget pricing GRW received from four tank manufacturers for the Multi-Column and Pedesphere style tanks. It should be noted that Caldwell Tanks was familiar with the new tank site and the associated constraints, whereas the other manufacturers did not have any specific details about the site other than a verbal description that the site is congested and near homes.

**Preliminary Budget Pricing**

| Tank Manufacturer | 500,000 Gallon Multi-Column Tank | 500,000 Gallon Pedesphere Tank |
|---|---|---|
| Caldwell Tanks | $1,825,000 | $1,975,000 |
| Pheonix Fabricators and Erectors, Inc. | $1,200,000 | --- |
| Landmark Structures | --- | $1,525,000 |
| Chicago Bridge & Iron Company (CB&I) | --- | $1,790,000 |

In discussions with the tank fabricators, Caldwell expressed concerns about access to the new tank location and available construction area for material staging and storage. All fabricators had concerns about full paint containment on a tank of this height. These concerns are reflected in the above budget pricing.

Through the course of this project, it was determined that the overflow / high-water level of the existing Lumley tank is around 1018. NKWD decided to set the overflow / high-water elevation of the new tank at 1020. The top of foundation of the new tank will be 829.50 which will make the tank 190.50 feet tall to the overflow / high water elevation.

Refer to Figure B – "Base Bid Option No. 1 – Multi-Column Tank Elevation" and Figure C – "Base Bid Option No. 2 – Pedesphere Tank Elevation" for depictions of the proposed elevated tank styles and accessories, with elevations labeled.

## D. Paint System and Containment

Originally, the exterior painting system for the new Lumley Tank was decided to be based on Tnemec's HydroFlon finish coat for superior resistance to ultra-violent light degradation which provides long-term gloss and color retention. Caldwell Tanks indicated that the HydroFlon system on the exterior of a 500,000 gallon tank would be an upcharge of $45,000. Through further discussions with paint manufacturers and NKWD, the decision was made to specify polyurethane systems on the exterior instead for cost savings. HydroFlon, and similar fluorurethane products, will, however, be specified for use on the NKWD logos to be painted on the new tank.

Interior wet, interior dry and exterior paint systems by Tnemec, Induron and Carboline will be listed in the specifications as acceptable paint systems. NKWD indicated that they prefer a NSF approved zinc based primer on the interior wet surfaces.

With the nearby proximity of houses, businesses, the City of Fort Thomas facilities, etc., it was strongly recommended by the tank manufacturers that mandatory full containment be specified during painting to protect these facilities. Therefore, a full containment system in accordance with SSPC – Guide 6 - Guide For Containing Surface Preparation Debris Generated During Paint Removal Operations, will be required in the project specifications. Caldwell Tanks indicated that full containment for a tank of this height would add $200,000 to $250,000 to the construction cost. This cost is reflected in the budget pricing above provided by Caldwell and the other manufacturers.

## E. Temporary Safety Zone Easements

In addition to protecting facilities during painting operations, protection of persons and nearby property will be necessary during the demolition of the existing tank. As a result, a temporary safety zone will be identified on the project site plans. This safety zone will consist of temporary easements from the four residential properties surrounding the tank site. For safety concerns, the zone will be temporarily fenced off during construction to prevent anyone

from entering this area. The Contractor will be instructed that no construction work, materials, equipment, etc. can be located in the temporary safety zone easements and that the area is intended to provide a safety barrier only.

## F. Lead Contaminated Materials

The inspection report for the existing Lumley tank by Dixon Engineering, Inc., showed that test results from the exterior coating of the existing tank indicated the exterior is a lead bearing coating. As a result, provisions will be included in the tank demolition specification for removing and disposing of all lead contaminated materials in accordance with federal, state and/or local regulations. Furthermore, the demolition spec will require all steel waste material to be properly disposed of at an approved facility for the disposal/recycling of lead contaminated scrap steel and will specify that lead contaminated scrap steel cannot be sold for reuse. Proper written and signed documentation for steel disposal will be also be required.

Additionally, three (3) soil samples were taken around the base of the existing Lumley tank as part of the geotechnical investigation. Test results revealed that lead was detected in the samples. The highest level detected was 140 mg/Kg (ppm). According the Toxic Substance Control Action Section 403 from the EPA, contaminated soil is not required to be remediated when lead concentrations are below 400 ppm for playground areas and 1,200 ppm for all other areas. However, it is recommended to remove, properly dispose of, and replace the top 3-inches of existing soil from the project site after the existing tank has been demolished and removed from the site. A Contaminated Soil Removal and Replacement specification section will be included in the contract documents to outline provisions for properly removing and disposing of the lead contaminated soil.

## G. Altitude Valve Vault and Valve Assembly

A new altitude valve will be included in the project to control the water level of the new Lumley Tank. NKWD indicated for the altitude valve to be an electrically actuated diaphragm valve by Cla-Val. For the Multi-Column tank style, an altitude valve vault will be included in the design documents to house the altitude valve on the tank inlet piping, check valve on the tank outlet piping and associated piping, gate valves and dismantling joints. See Figure D – "Multi-Column Tank Altitude Valve Vault" for a plan view of this valve vault.

For the Pedesphere tank style, the altitude valve and pipe assembly will be located in the base cone of the tank pedestal. See Figure E – "Pedesphere Tank Altitude Valve Assembly" for a section view of the valve and piping layout in the tank base cone.

## H. Cellular Equipment

During design of the new Lumley Tank, consideration will be given to the accommodation of cellular and radio equipment such as cables and antennas. Currently, three cellular providers have equipment on the existing Lumley tank plus the District's own equipment. These cell providers are AT&T, Verizon Wireless, and Cricket Wireless. All three have been contacted for discussions and coordination regarding their existing installations, temporary service during construction and relocating their service from the existing tank to the new tank. Cricket indicated that they will remove their equipment from the existing tank but do not intend to put new equipment on the new tank.

Design documents for the new tank will include mounting appurtenances dedicated for the cellular providers and NKWD and consideration of the ability to add more cellular and radio equipment to the new tank. The design and location of these features will take into account safe access to the tank, potential damage to the tank and future maintenance of the tank.

## I. Passive Mixing System

Through discussions with NKWD, it was decided to include a passive mixing system in the interior of the new tank to improve tank mixing. Design documents will include drawings and specifications for a Tideflex reservoir hydrodynamic mixing system (HMS) for both the Multi-Column and Pedesphere style tanks. The HMS is defined as a supplemental system installed within a potable water storage reservoir which passively utilizes the energy provided by the inlet water supply to generate sufficient inlet momentum to achieve a complete homogeneous blending of the water volume within the reservoir with the inlet supply flow. The system includes a bi-directional flow pipe manifold equipped with variable orifice duckbill inlet nozzles and outlet flow perforated disc type check valves.

## G. Electrical and Instrumentation

As final design for the new Lumley Tank progresses, the below electrical and instrumentation items will be included in the contract documents based on discussions and decisions by NKWD.

- Underground 200 ampere service will be installed from a padmounted transformer (by Duke Energy) to the new tank service pedestal.
- Existing telemetry and SCADA panels from the existing Lumley tank will be reused for the new tank but a new telemetry antenna will be installed.
- FAA obstruction lighting complying with FAA's document Obstruction Marking and Lighting will be installed on top of the new Lumley Tank.
- A chorine and pH probe and a turbidometer, with associated instrumentation, will be provided with the new tank. All three signals will be connected to the SCADA panel.
- Both a pressure transducer and a radar depth indicator will be installed on the new tank for measuring tank levels. Both signals will be connected to the SCADA panel.
- For the Multi-Column style tank, a pre-fabricated instruments building will be located

adjacent to the altitude valve vault. This building will be a temperature controlled space and will house the instrumentation panels (telemetry, SCADA, analyzers, lighting) and chlorine and pH probe and turbidometer.

- For the Pedesphere style tank, the instrumentation panels (telemetry, SCADA, analyzers, lighting) and chlorine and pH probe and turbidometer will be located in the pedestal base cone.

## 4.0 PERMITS

Based on the scope of work, the required permits anticipated to be secured during the design phase are:

- Kentucky Division of Water "*Construction Application for Drinking Water Distribution*" Form DW-1.
- Kentucky Department of Housing, Building and Construction "*Plan Application Form*", if required.
- Local permits or inspections, if any, will be the responsibility of the contractor.
- Sanitation District No. 1 Clearing Permit, Grading Permit or Land Disturbance Permit, if required.
- Federal Aviation Administration (FAA) permit.

## 5.0 SCHEDULE

Below is the proposed design and construction schedule for the new Lumley Tank.

- GRW to complete Survey/Mapping by April 28th
- Schedule geotechnical borings once the City of Fort Thomas zoning/setback decision has been made
- Send legal Advertisement to paper on July 9, 2015
- Advertise for Bids on July 16, 2015
- Non-Mandatory Pre-Bid Meeting on July 23, 2015 at 1:00 pm
- Bid Opening on August 6, 2015 at 2:00 pm
- Recommendation of Contractor to NKWD by August 20th Board Meeting
- Submit to PSC for review the week of August 24, 2015
- Cell companies to move existing cellular equipment between August 24th and November 25, 2015 (NTP)
- Bids will expire on November 4, 2015 (90 days from Bid Opening)
- Receive PSC approval and send Notice of Award around November 6, 2015
- Notice to Proceed on November 25, 2015
    - Demolition, Site work, Foundation – November 2015 through April 2016
    - Tank Construction – May through August 2016
    - Painting – September through October 2016
- Substantial Completion on November 24, 2016

- Final Completion on January 8, 2017

## 6.0 OPINION OF PROJECT COST

See following two pages for Opinions of Project Cost for the 500,000 gallon Multi-Column tank style and the 500,000 gallon Pedesphere tank style. The largest portion of the project costs are for construction of the tank itself, which are shown in the cost estimates as the preliminary budget pricing provided by Caldwell Tanks for a 500,000 gallon Multi-Column and a 500,000 gallon Pedesphere elevated water tank.

* * * * * * * * * * * * *

| GRW Engineers, Inc. | Project: | Lumley Tank Replacement | | |
|---|---|---|---|---|
| | Owner: | Northern Kentucky Water District | | |
| | Project No.: | 4383 | | |
| **Opinion of Project Cost** | Date: | 08/06/15 | Dwg. No.: | All |
| | Estimator: | AAB/ADH | Type: | Final Design |

| Item Description | No. of Units | Units of Measure | Unit Cost | Total Cost |
|---|---|---|---|---|
| **Base Bid Option No.1 - 500,000 Gallon Multi-Column Elevated Water Storage Tank** | | | | |
| **Site Work, Valves, Piping and Electrical:** | | | | |
| Demolition of Existing Lumley Tank | 1 | LSUM | $ 90,000.00 | $ 90,000.00 |
| Concrete Bottom Slab - Altitude Valve Vault | 11 | CY | $ 500.00 | $ 5,500.00 |
| Concrete Walls - Altitude Valve Vault | 20 | CY | $ 700.00 | $ 14,000.00 |
| Concrete Top Slab - Altitude Valve Vault | 10 | CY | $ 800.00 | $ 8,000.00 |
| Concrete Slab - Instruments Building | 5 | CY | $ 500.00 | $ 2,500.00 |
| Painting Pipe inside Altitude Valve Vault | 1 | LSUM | $ 2,000.00 | $ 2,000.00 |
| Double Leaf Aluminum Access Hatch - AVV | 1 | EA | $ 6,000.00 | $ 6,000.00 |
| Excavation for Altitude Valve Vault | 170 | CY | $ 50.00 | $ 8,500.00 |
| Backfill around Altitude Valve Vault | 20 | CY | $ 15.00 | $ 300.00 |
| Site Restoration and Grading | 1 | LSUM | $ 10,000.00 | $ 10,000.00 |
| Valve Vault 4" PVC Drain Line | 140 | LF | $ 30.00 | $ 4,200.00 |
| Contaminated Soil Removal and Replacement | 65 | CY | $ 100.00 | $ 6,500.00 |
| Asphalt Restoration and Paving on NKWD Property | 850 | CY | $ 20.00 | $ 17,000.00 |
| Temporary Chain Link Fencing | 370 | LF | $ 18.00 | $ 6,660.00 |
| Temporary Construction Safety Fencing | 160 | LF | $ 10.00 | $ 1,600.00 |
| Permanent Security Fencing | 300 | LF | $ 25.00 | $ 7,500.00 |
| Remove, Protect & Replace Ex. Wooden Fence | 170 | LF | $ 10.00 | $ 1,700.00 |
| 15' Double Security Gate | 1 | EA | $ 8,000.00 | $ 8,000.00 |
| 8" Solenoid Control Altitude Valve | 1 | EA | $ 15,000.00 | $ 15,000.00 |
| 8" and 12" Valves for Altitude Valve Assembly | 1 | LSUM | $ 35,000.00 | $ 35,000.00 |
| 12" DI Site Piping | 70 | LF | $ 90.00 | $ 6,300.00 |
| Wet Tap with 12"x6" Tapping Sleeve and Valve | 1 | EA | $ 5,500.00 | $ 5,500.00 |
| Fire Hydrant Assembly | 1 | EA | $ 4,500.00 | $ 4,500.00 |
| DI Flanged Piping for Altitude and Check Valves | 1 | LSUM | $ 3,000.00 | $ 3,000.00 |
| DI Fittings | 2 | TON | $ 6,000.00 | $ 12,000.00 |
| 36"x36" Precast Concrete Catch Basin | 1 | EA | $ 3,500.00 | $ 3,500.00 |
| Precast Concrete Headwall | 1 | EA | $ 2,500.00 | $ 2,500.00 |
| Prefabricated Instruments Building | 1 | LSUM | $ 10,000.00 | $ 10,000.00 |
| Hydraulic Mixing System | 1 | LSUM | $ 55,000.00 | $ 55,000.00 |
| Erosion Control | 1 | LSUM | $ 2,000.00 | $ 2,000.00 |
| Instrumentation and Electrical: | | | | |
| Grounding Electrode System for 200 Amp Service | 1 | LSUM | $ 500.00 | $ 500.00 |
| Metering Pedestal - Concrete Pad, Galv. Post, AL Framing | 1 | LSUM | $ 6,600.00 | $ 6,600.00 |
| 200 Amp Service - 2" PVC, #3/0 AWG CU | 75 | LF | $ 36.00 | $ 2,700.00 |
| 200 Amp Meter Base - Single Phase, Mounted on Pedestal | 1 | LSUM | $ 200.00 | $ 200.00 |
| Main Service Disconnect - 200 Amp, Enclosed Breaker | 1 | LSUM | $ 450.00 | $ 450.00 |
| 200 Amp Main Feeder - Main Service Disconnect to Panel | 50 | LF | $ 54.00 | $ 2,700.00 |
| 200 Amp Panel - Main Breaker, Branch Breakers | 1 | LSUM | $ 2,250.00 | $ 2,250.00 |
| Relocate SCADA Panel | 1 | LSUM | $ 400.00 | $ 400.00 |
| Relocate Telemetry Panel | 1 | LSUM | $ 400.00 | $ 400.00 |
| Interference Lighting System - Panel, Luminaires, Wiring | 1 | LSUM | $ 12,400.00 | $ 12,400.00 |
| Door Contacts - SCADA Panel Wiring Included | 3 | EA | $ 520.00 | $ 1,560.00 |

| GRW Engineers, Inc. | Project: | Lumley Tank Replacement | | |
|---|---|---|---|---|
| | Owner: | Northern Kentucky Water District | | |
| | Project No.: | 4383 | | |
| **Opinion of Project Cost** | Date: | 08/06/15 | Dwg. No.: | All |
| | Estimator: | AAB/ADH | Type: | Final Design |

| Item Description | No. of Units | Units of Measure | Unit Cost | Total Cost |
|---|---|---|---|---|
| **Base Bid Option No.1 - 500,000 Gallon Multi-Column Elevated Water Storage Tank** | | | | |
| **Site Work, Valves, Piping and Electrical:** | | | | |
| Altitude Valve Controls & Monitor | 1 | LSUM | $ 1,250.00 | $ 1,250.00 |
| Pressure Transducer & Radar Depth Gauge | 1 | LSUM | $ 7,100.00 | $ 7,100.00 |
| Electrical Permit | 1 | LSUM | $ 1,800.00 | $ 1,800.00 |
| Panel Grounding - Ground 200 Amp Panel per NEC 250 | 1 | LSUM | $ 200.00 | $ 200.00 |
| Chlorine and PH Probe | 1 | LSUM | $ 6,500.00 | $ 6,500.00 |
| Turbidometer | 1 | LSUM | $ 5,000.00 | $ 5,000.00 |
| LED Obstruction Light | 1 | LSUM | $ 7,000.00 | $ 7,000.00 |
| | | | Sub-Total | $ 413,270.00 |
| Contingency (10%) | | | | $ 41,330.00 |
| City of Fort Thomas Property Paving Allowance | 1 | LSUM | $ 35,000.00 | $ 35,000.00 |
| City of Fort Thomas Entrance Repair Allowance | 1 | LSUM | $ 10,000.00 | $ 10,000.00 |
| | | | Sub-Total | $ 499,600.00 |
| Contractor Overhead & Profit (15%) | | | | $ 74,940.00 |
| **Sub-Total for Site Work, Valves, Piping and Electrical (Rounded)** | | | | **$ 575,000.00** |
| **New Elevated Tank:** | | | | |
| 500,000 Multi-Column Elevated Tank* | 1 | LSUM | $ 1,825,000.00 | $ 1,825,000.00 |
| Included: Paint containment, painting, shallow foundation system | | | | |
| Cellular Equipment Attachments | 1 | LSUM | $ 30,000.00 | $ 30,000.00 |
| Deep Drilled Shafts Foundation | 1 | LSUM | $ 50,000.00 | $ 50,000.00 |
| | | | Sub-Total | $ 1,905,000.00 |
| Contingency (10%) | | | | $ 190,500.00 |
| | | | Sub-Total | $ 2,095,500.00 |
| **Sub-Total for New Tank, Site Work, Piping, Valves and Electrical (Rounded)** | | | | **$ 2,671,000.00** |
| Bonding & Insurance (1%) | | | | $ 26,710.00 |
| **Sub-Total for Construction Costs** | | | | **$ 2,697,710.00** |
| **Professional Services:** | | | | |
| GRW Engineers Services (Design, Admin, CA) | | | | $ 83,642.48 |
| Geotechnical Services | | | | $ 8,544.35 |
| Tank Inspection Services | | | | $ 17,928.00 |
| **Sub-Total for Professional Services** | | | | **$ 110,114.83** |
| | | | | |
| **TOTAL ESTIMATED COSTS FOR 500,000 GALLON MULTI-COLUMN TANK (BASE BID OPTION NO.1)** | | | | **$ 2,808,000.00** |

* Preliminary budget pricing provided by Caldwell Tanks

| GRW Engineers, Inc. | Project: | Lumley Tank Replacement | | |
|---|---|---|---|---|
| | Owner: | Northern Kentucky Water District | | |
| | Project No.: | 4383 | | |
| **Opinion of Project Cost** | Date: | 08/06/15 | Dwg. No.: | All |
| | Estimator: | AAB/ADH | Type: | Final Design |

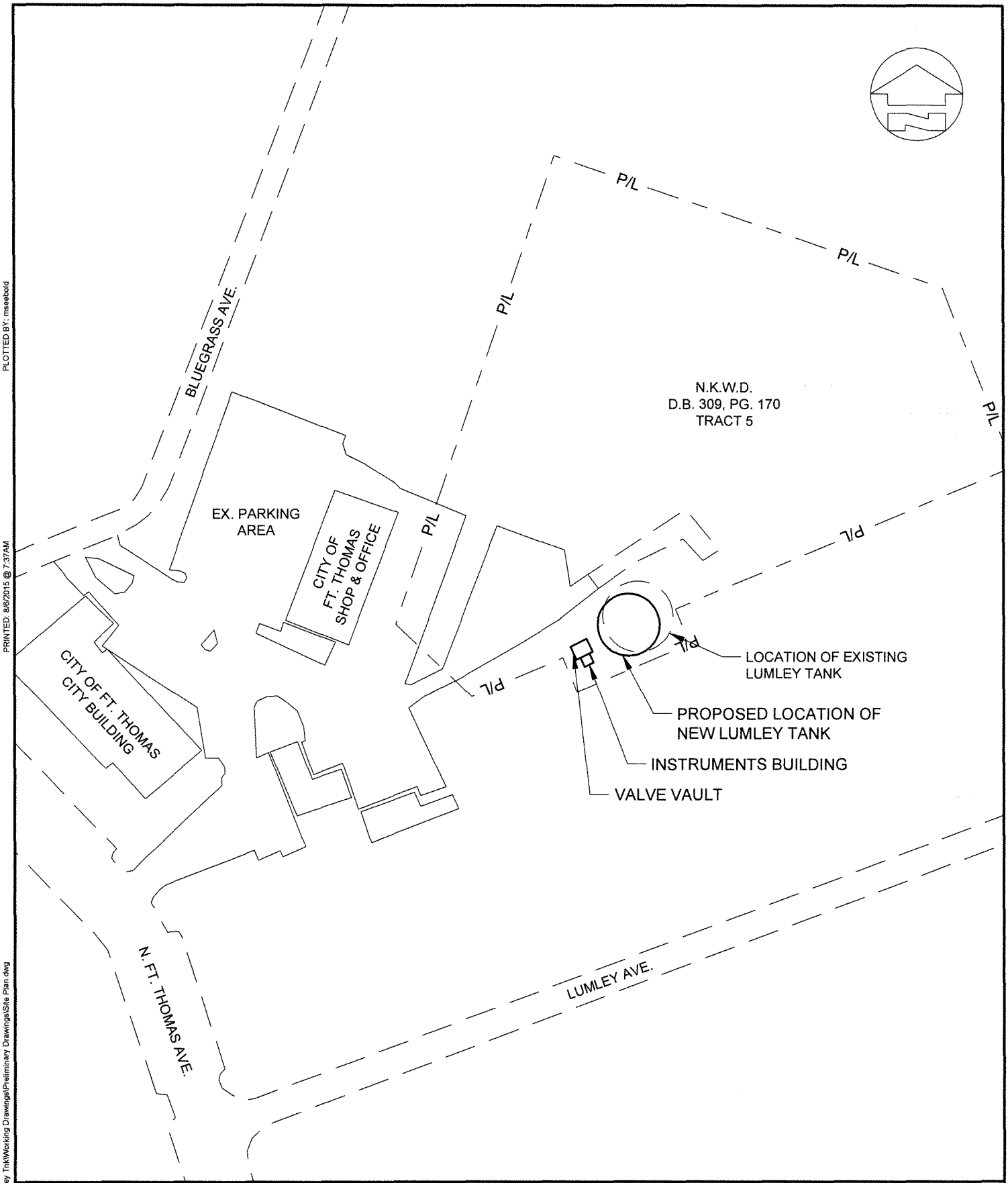
| Item Description | No. of Units | Units of Measure | Unit Cost | Total Cost |
|---|---|---|---|---|
| **Base Bid Option No.2 - 500,000 Gallon Pedesphere Elevated Water Storage Tank** | | | | |
| **Site Work, Valves, Piping and Electrical:** | | | | |
| Demolition of Existing Lumley Tank | 1 | LSUM | $ 90,000.00 | $ 90,000.00 |
| Site Restoration | 1 | LSUM | $ 2,500.00 | $ 2,500.00 |
| Contaminated Soil Removal and Replacement | 65 | CY | $ 100.00 | $ 6,500.00 |
| Asphalt Restoration and Paving on NKWD Property | 850 | CY | $ 20.00 | $ 17,000.00 |
| Temporary Chain Link Fencing | 370 | LF | $ 18.00 | $ 6,660.00 |
| Temporary Construction Safety Fencing | 160 | LF | $ 10.00 | $ 1,600.00 |
| Permanent Security Fencing | 300 | LF | $ 25.00 | $ 7,500.00 |
| Remove, Protect & Replace Ex. Wooden Fence | 170 | LF | $ 10.00 | $ 1,700.00 |
| 15' Double Security Gate | 1 | EA | $ 8,000.00 | $ 8,000.00 |
| 8" Solenoid Control Altitude Valve | 1 | EA | $ 15,000.00 | $ 15,000.00 |
| 8" and 12" Valves for Altitude Valve Assembly | 1 | LSUM | $ 37,000.00 | $ 37,000.00 |
| Painting Interior Pipe and Valves | 1 | LSUM | $ 2,000.00 | $ 2,000.00 |
| 12" DI Site Piping | 70 | LF | $ 90.00 | $ 6,300.00 |
| Wet Tap with 12"x6" Tapping Sleeve and Valve | 1 | EA | $ 5,500.00 | $ 5,500.00 |
| Fire Hydrant Assembly | 1 | EA | $ 4,500.00 | $ 4,500.00 |
| DI Flanged Piping for Altitude and Check Valves and Drain | 1 | LSUM | $ 4,000.00 | $ 4,000.00 |
| DI Fittings | 2 | TON | $ 6,000.00 | $ 12,000.00 |
| 36"x36" Precast Concrete Catch Basin | 1 | EA | $ 3,500.00 | $ 3,500.00 |
| Precast Concrete Headwall | 1 | EA | $ 2,500.00 | $ 2,500.00 |
| Hydraulic Mixing System | 1 | LSUM | $ 30,000.00 | $ 30,000.00 |
| Erosion Control | 1 | LSUM | $ 2,000.00 | $ 2,000.00 |
| Instrumentation and Electrical: | | | | |
| Grounding Electrode System for 200 Amp Service | 1 | LSUM | $ 500.00 | $ 500.00 |
| Metering Pedestal - Concrete Pad, Galv. Post, AL Framing | 1 | LSUM | $ 6,600.00 | $ 6,600.00 |
| 200 Amp Service - 2" PVC. #3/0 AWG CU | 75 | LF | $ 36.00 | $ 2,700.00 |
| 200 Amp Meter Base - Single Phase, Mounted on Pedestal | 1 | LSUM | $ 200.00 | $ 200.00 |
| Main Service Disconnect - 200 Amp, Enclosed Breaker | 1 | LSUM | $ 450.00 | $ 450.00 |
| 200 Amp Main Feeder - Main Service Disconnect to Panel | 50 | LF | $ 54.00 | $ 2,700.00 |
| 200 Amp Panel - Main Breaker, Branch Breakers | 1 | LSUM | $ 2,250.00 | $ 2,250.00 |
| Relocate SCADA Panel | 1 | LSUM | $ 400.00 | $ 400.00 |
| Relocate Telemetry Panel | 1 | LSUM | $ 400.00 | $ 400.00 |
| Interference Lighting System - Panel, Luminaires, Wiring | 1 | LSUM | $ 12,400.00 | $ 12,400.00 |
| Door Contacts - SCADA Panel Wiring Included | 3 | EA | $ 520.00 | $ 1,560.00 |
| Altitude Valve Controls & Monitor | 1 | LSUM | $ 1,250.00 | $ 1,250.00 |
| Pressure Transducer & Radar Depth Gauge | 1 | LSUM | $ 7,100.00 | $ 7,100.00 |
| Electrical Permit | 1 | LSUM | $ 1,800.00 | $ 1,800.00 |
| Panel Grounding - Ground 200 Amp Panel per NEC 250 | 1 | LSUM | $ 200.00 | $ 200.00 |
| Chlorine and PH Probe | 1 | LSUM | $ 6,500.00 | $ 6,500.00 |
| Turbidometer | 1 | LSUM | $ 5,000.00 | $ 5,000.00 |
| LED Obstruction Light | 1 | LSUM | $ 7,000.00 | $ 7,000.00 |
| | | | Sub-Total | $ 324,770.00 |

| GRW Engineers, Inc. | Project: | Lumley Tank Replacement | | |
|---|---|---|---|---|
| | Owner: | Northern Kentucky Water District | | |
| | Project No.: | 4383 | | |
| **Opinion of Project Cost** | Date: | 08/06/15 | Dwg. No.: | All |
| | Estimator: | AAB/ADH | Type: | Final Design |

| Item Description | No. of Units | Units of Measure | Unit Cost | Total Cost |
|---|---|---|---|---|
| **Base Bid Option No.2 - 500,000 Gallon Pedesphere Elevated Water Storage Tank** | | | | |
| **Site Work, Valves, Piping and Electrical:** | | | | |
| Contingency (10%) | | | | $ 32,480.00 |
| City of Fort Thomas Property Paving Allowance | 1 | LSUM | $ 35,000.00 | $ 35,000.00 |
| City of Fort Thomas Entrance Repair Allowance | 1 | LSUM | $ 10,000.00 | $ 10,000.00 |
| | | | Sub-Total | $ 402,250.00 |
| Contractor Overhead & Profit (15%) | | | | $ 60,340.00 |
| **Sub-Total for Site Work, Valves, Piping and Electrical (Rounded)** | | | | **$ 463,000.00** |
| **New Elevated Tank:** | | | | |
| 500,000 Pedesphere Elevated Tank* | 1 | LSUM | $ 1,980,000.00 | $ 1,980,000.00 |
| Included: Paint containment, painting, shallow foundation system | | | | |
| Cellular Equipment Attachments | 1 | LSUM | $ 30,000.00 | $ 30,000.00 |
| Deep Drilled Shafts Foundation | 1 | LSUM | $ 50,000.00 | $ 50,000.00 |
| | | | Sub-Total | $ 2,060,000.00 |
| Contingency (10%) | | | | $ 206,000.00 |
| | | | Sub-Total | $ 2,266,000.00 |
| **Sub-Total for New Tank, Site Work, Piping, Valves and Electrical (Rounded)** | | | | **$ 2,729,000.00** |
| Bonding & Insurance (1%) | | | | $ 27,290.00 |
| **Sub-Total for Construction Costs** | | | | **$ 2,756,290.00** |
| **Professional Services:** | | | | |
| GRW Engineers Services (Design, Admin, CA) | | | | $ 83,642.48 |
| Geotechnical Services | | | | $ 8,544.35 |
| Tank Inspection Services | | | | $ 17,928.00 |
| **Sub-Total for Professional Services** | | | | **$ 110,114.83** |
| | | | | |
| **TOTAL ESTIMATED COSTS FOR 500,000 GALLON PEDESPHERE TANK (BASE BID OPTION NO.2)** | | | | **$ 2,867,000.00** |

* Preliminary budget pricing provided by Caldwell Tanks

# FIGURES

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| NO. DESCRIPTION DATE BY | | REVIEWED: ADH | |
| | | APPROVED: ADH | |
| SCALE CHECK: THIS MARK SHOULD MEASURE EXACTLY 1/2" WHEN PLOTTED | | | |

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DATE: AUGUST, 2015
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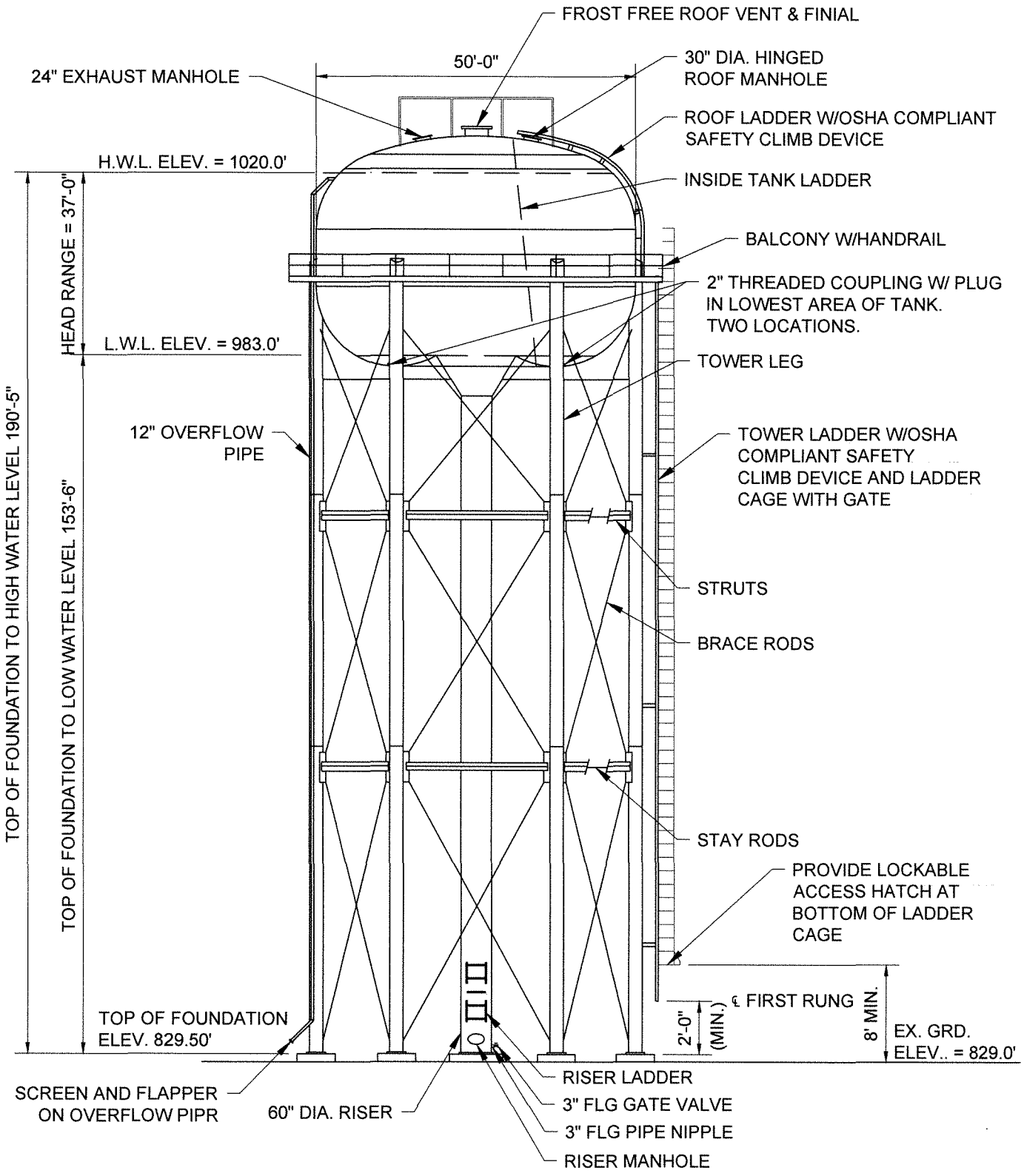


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| REVISIONS<br>NO. DESCRIPTION DATE BY | | DRAWN: MBS | |
| | | REVIEWED: ADH | |
| SCALE CHECK: THIS MARK SHOULD MEASURE EXACTLY 1/2" WHEN PLOTTED | | APPROVED: ADH | |

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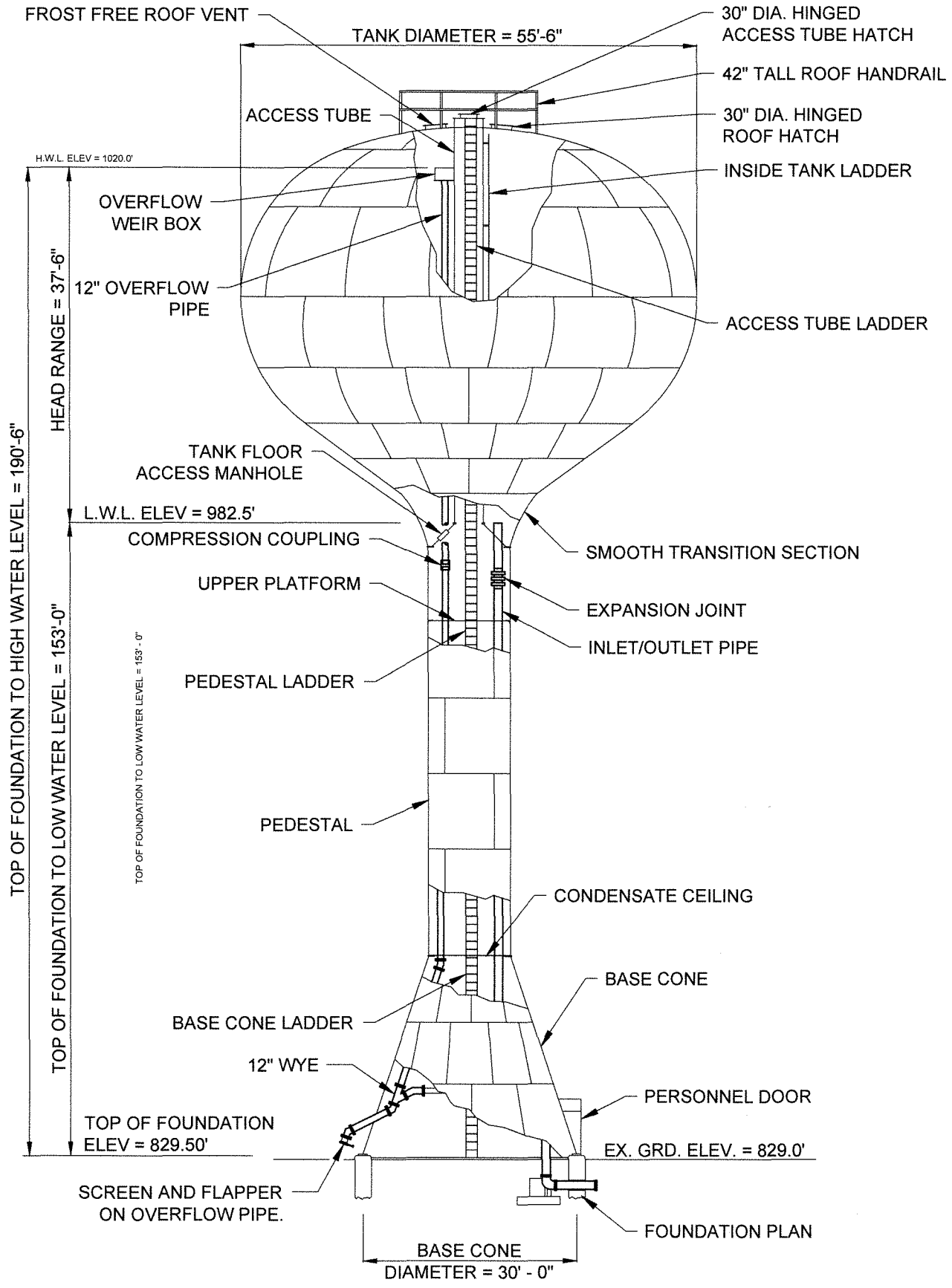


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| REVISIONS<br>NO. DESCRIPTION DATE BY | | DRAWN: MBS | |
| | | REVIEWED: ADH | |
| SCALE CHECK: THIS MARK SHOULD MEASURE EXACTLY 1/2" WHEN PLOTTED | | APPROVED: ADH | |

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DATE: AUGUST, 2015
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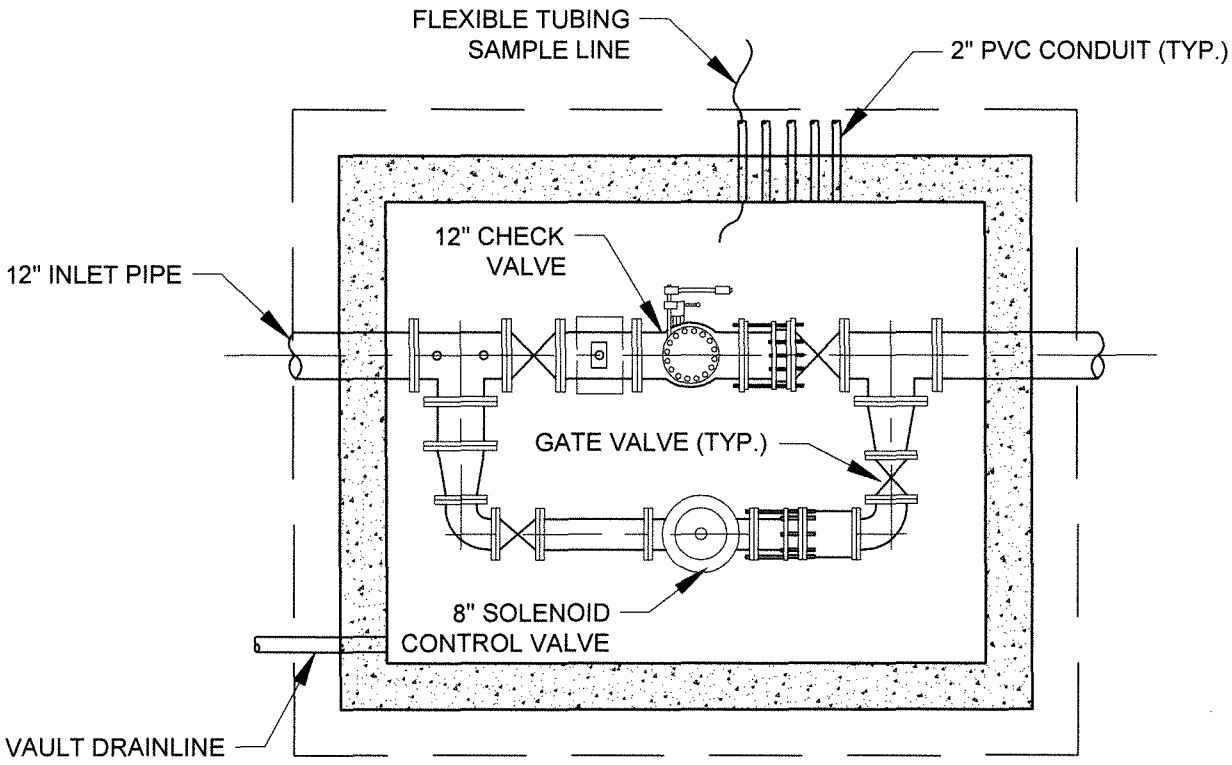


# ALTITUDE VALVE VAULT

NOT TO SCALE

| | | | |
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| REVISIONS | | DRAWN: AAB | |
| NO. DESCRIPTION DATE BY | | REVIEWED: ADH | |
| | | APPROVED: AAB | |
| SCALE CHECK: THIS MARK SHOULD MEASURE EXACTLY 1/2" WHEN PLOTTED | | | |

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DATE: AUGUST, 2015
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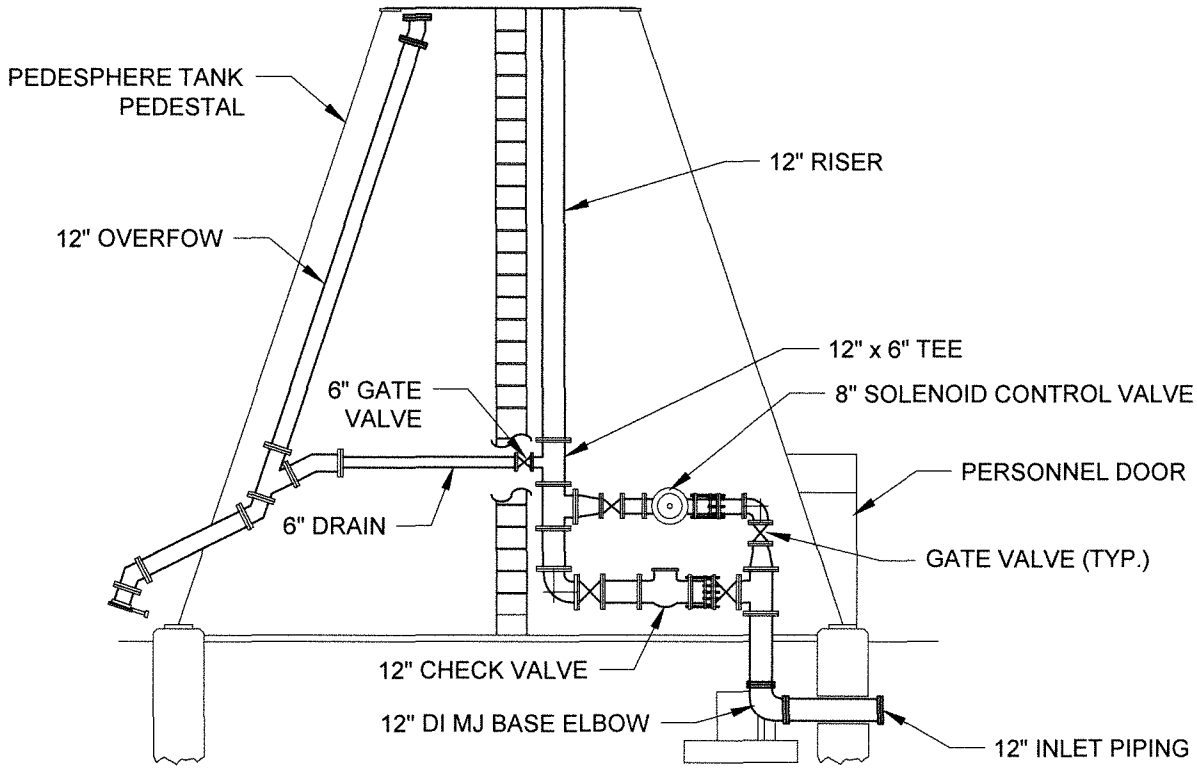


# PEDESTAL BASE CONE VALVE ASSEMBLY

NOT TO SCALE

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| REVISIONS<br>NO. DESCRIPTION DATE BY | | DRAWN: AAB | |
| | | REVIEWED: ADH | |
| SCALE CHECK: THIS MARK SHOULD MEASURE EXACTLY 1/2" WHEN PLOTTED | | APPROVED: AAB | |

engineering | architecture | geospatial
www.grwinc.com



DATE: AUGUST, 2015
SCALE: 1/4"=1'-0"
SHEET NO. E

Case No. 2015-00295
Exhibit A

# NORTHERN KENTUCKY WATER DISTRICT

## ***Project***
## ***Lumley Tank Replacement***

Campbell County
184-0487

## Engineer's Opinion Of Probable Construction Cost

| GRW Engineers, Inc. | Project: | Lumley Tank Replacement | | |
|---|---|---|---|---|
| | Owner: | Northern Kentucky Water District | | |
| | Project No.: | 4383 | | |
| **Opinion of Project Cost** | Date: | 07/14/15 | Dwg. No.: | All |
| | Estimator: | AAB/ADH | Type: | 100% Design |

| Item Description | No. of Units | Units of Measure | Unit Cost | Total Cost |
|---|---|---|---|---|
| **Base Bid Option No.1 - 500,000 Gallon Multi-Column Elevated Water Storage Tank** | | | | |
| **Site Work, Valves, Piping and Electrical:** | | | | |
| Demolition of Existing Lumley Tank | 1 | LSUM | $ 90,000.00 | $ 90,000.00 |
| Concrete Bottom Slab - Altitude Valve Vault | 11 | CY | $ 500.00 | $ 5,500.00 |
| Concrete Walls - Altitude Valve Vault | 15 | CY | $ 700.00 | $ 10,500.00 |
| Concrete Top Slab - Altitude Valve Vault | 10 | CY | $ 800.00 | $ 8,000.00 |
| Concrete Slab - Instruments Building | 5 | CY | $ 500.00 | $ 2,500.00 |
| Painting Pipe inside Altitude Valve Vault | 1 | LSUM | $ 2,000.00 | $ 2,000.00 |
| Double Leaf Aluminum Access Hatch - AVV | 1 | EA | $ 6,000.00 | $ 6,000.00 |
| Excavation for Altitude Valve Vault | 135 | CY | $ 50.00 | $ 6,750.00 |
| Backfill around Altitude Valve Vault | 18 | CY | $ 15.00 | $ 266.67 |
| Site Restoration | 1 | LSUM | $ 5,000.00 | $ 5,000.00 |
| Contaminated Soil Removal and Replacement | 65 | CY | $ 100.00 | $ 6,500.00 |
| Asphalt Restoration and Paving on NKWD Property | 850 | CY | $ 20.00 | $ 17,000.00 |
| Temporary Chain Link Fencing | 370 | LF | $ 18.00 | $ 6,660.00 |
| Temporary Construction Safety Fencing | 160 | LF | $ 10.00 | $ 1,600.00 |
| Permanent Security Fencing | 300 | LF | $ 25.00 | $ 7,500.00 |
| Remove, Protect & Replace Ex. Wooden Fence | 170 | LF | $ 10.00 | $ 1,700.00 |
| 15' Double Security Gate | 1 | EA | $ 8,000.00 | $ 8,000.00 |
| 8" Solenoid Control Altitude Valve | 1 | EA | $ 15,000.00 | $ 15,000.00 |
| 8" and 12" Valves for Altitude Valve Assembly | 1 | LSUM | $ 35,000.00 | $ 35,000.00 |
| 12" DI Site Piping | 70 | LF | $ 90.00 | $ 6,300.00 |
| Wet Tap with 12"x6" Tapping Sleeve and Valve | 1 | EA | $ 5,500.00 | $ 5,500.00 |
| Fire Hydrant Assembly | 1 | EA | $ 4,500.00 | $ 4,500.00 |
| DI Flanged Piping for Altitude and Check Valves | 1 | LSUM | $ 3,000.00 | $ 3,000.00 |
| DI Fittings | 2 | TON | $ 6,000.00 | $ 12,000.00 |
| 36"x36" Precast Concrete Catch Basin | 1 | EA | $ 3,500.00 | $ 3,500.00 |
| Precast Concrete Headwall | 1 | EA | $ 2,500.00 | $ 2,500.00 |
| Prefabricated Instruments Building | 1 | LSUM | $ 10,000.00 | $ 10,000.00 |
| Hydraulic Mixing System | 1 | LSUM | $ 55,000.00 | $ 55,000.00 |
| Erosion Control | 1 | LSUM | $ 2,000.00 | $ 2,000.00 |
| Instrumentation and Electrical: | | | | |
| Grounding Electrode System for 200 Amp Service | 1 | LSUM | $ 500.00 | $ 500.00 |
| Metering Pedestal - Concrete Pad, Galv. Post, AL Framing | 1 | LSUM | $ 6,600.00 | $ 6,600.00 |
| 200 Amp Service - 2" PVC. #3/0 AWG CU | 75 | LF | $ 36.00 | $ 2,700.00 |
| 200 Amp Meter Base - Single Phase, Mounted on Pedestal | 1 | LSUM | $ 200.00 | $ 200.00 |
| Main Service Disconnect - 200 Amp, Enclosed Breaker | 1 | LSUM | $ 450.00 | $ 450.00 |
| 200 Amp Main Feeder - Main Service Disconnect to Panel | 50 | LF | $ 54.00 | $ 2,700.00 |
| 200 Amp Panel - Main Breaker, Branch Breakers | 1 | LSUM | $ 2,250.00 | $ 2,250.00 |
| Relocte SCADA Panel | 1 | LSUM | $ 400.00 | $ 400.00 |
| Relocated Telemetry Panel | 1 | LSUM | $ 400.00 | $ 400.00 |
| Interference Lighting System - Panel, Luminaires, Wiring | 1 | LSUM | $ 12,400.00 | $ 12,400.00 |
| Door Contacts - SCADA Panel Wiring Included | 3 | EA | $ 520.00 | $ 1,560.00 |

| GRW Engineers, Inc. | Project: | Lumley Tank Replacement | | |
|---|---|---|---|---|
| | Owner: | Northern Kentucky Water District | | |
| | Project No.: | 4383 | | |
| **Opinion of Project Cost** | Date: | 07/14/15 | Dwg. No.: | All |
| | Estimator: | AAB/ADH | Type: | 100% Design |

| Item Description | No. of Units | Units of Measure | Unit Cost | Total Cost |
|---|---|---|---|---|
| **Base Bid Option No.1 - 500,000 Gallon Multi-Column Elevated Water Storage Tank** | | | | |
| **Site Work, Valves, Piping and Electrical:** | | | | |
| Altitude Valve Controls & Monitor | 1 | LSUM | $ 1,250.00 | $ 1,250.00 |
| Pressure Transducer & Radar Depth Gauge | 1 | LSUM | $ 7,100.00 | $ 7,100.00 |
| Electrical Permit | 1 | LSUM | $ 1,800.00 | $ 1,800.00 |
| Panel Grounding - Ground 200 Amp Panel per NEC 250 | 1 | LSUM | $ 200.00 | $ 200.00 |
| Chlorine and PH Probe | 1 | LSUM | $ 6,500.00 | $ 6,500.00 |
| Turbidometer | 1 | LSUM | $ 5,000.00 | $ 5,000.00 |
| | | | Sub-Total | $ 391,786.67 |
| Contingency (10%) | | | | $ 39,180.00 |
| City of Fort Thomas Property Paving Allowance | 1 | LSUM | $ 35,000.00 | $ 35,000.00 |
| City of Fort Thomas Entrance Repair Allowance | 1 | LSUM | $ 10,000.00 | $ 10,000.00 |
| | | | Sub-Total | $ 475,966.67 |
| Contractor Overhead & Profit (15%) | | | | $ 71,400.00 |
| **Sub-Total for Site Work, Valves, Piping and Electrical (Rounded)** | | | | **$ 548,000.00** |
| **New Elevated Tank:** | | | | |
| 500,000 Multi-Column Elevated Tank | 1 | LSUM | $ 1,825,000.00 | $ 1,825,000.00 |
| Included: Paint containment, painting, shallow foundation system | | | | |
| Cellular Equipment Attachments | 1 | LSUM | $ 25,000.00 | $ 25,000.00 |
| Deep Drilled Shafts Foundation | 1 | LSUM | $ 50,000.00 | $ 50,000.00 |
| | | | Sub-Total | $ 1,900,000.00 |
| Contingency (10%) | | | | $ 190,000.00 |
| | | | Sub-Total | $ 2,090,000.00 |
| **Sub-Total for New Tank, Site Work, Piping, Valves and Electrical (Rounded)** | | | | **$ 2,638,000.00** |
| Bonding & Insurance (1%) | | | | $ 26,380.00 |
| **Sub-Total for Construction Costs** | | | | **$ 2,664,380.00** |
| **Professional Services:** | | | | |
| GRW Engineers Services (Design, Admin, CA) | | | | $ 83,642.48 |
| Geotechnical Services | | | | $ 8,544.35 |
| Tank Inspection Services | | | | $ 17,928.00 |
| **Sub-Total for Professional Services** | | | | **$ 110,114.83** |
| | | | | |
| **TOTAL ESTIMATED COSTS FOR 500,000 GALLON MULTI-COLUMN TANK (BASE BID OPTION NO.1)** | | | | **$ 2,775,000.00** |

| GRW Engineers, Inc. | Project: | Lumley Tank Replacement | | |
|---|---|---|---|---|
| | Owner: | Northern Kentucky Water District | | |
| | Project No.: | 4383 | | |
| **Opinion of Project Cost** | Date: | 07/14/15 | Dwg. No.: | All |
| | Estimator: | AAB/ADH | Type: | 100% Design |

| Item Description | No. of Units | Units of Measure | Unit Cost | Total Cost |
|---|---|---|---|---|
| **Base Bid Option No.2 - 500,000 Gallon Pedesphere Elevated Water Storage Tank** | | | | |
| **Site Work, Valves, Piping and Electrical:** | | | | |
| Demolition of Existing Lumley Tank | 1 | LSUM | $ 90,000.00 | $ 90,000.00 |
| Site Restoration | 1 | LSUM | $ 2,500.00 | $ 2,500.00 |
| Contaminated Soil Removal and Replacement | 65 | CY | $ 100.00 | $ 6,500.00 |
| Asphalt Restoration and Paving on NKWD Property | 850 | CY | $ 20.00 | $ 17,000.00 |
| Temporary Chain Link Fencing | 370 | LF | $ 18.00 | $ 6,660.00 |
| Temporary Construction Safety Fencing | 160 | LF | $ 10.00 | $ 1,600.00 |
| Permanent Security Fencing | 300 | LF | $ 25.00 | $ 7,500.00 |
| Remove, Protect & Replace Ex. Wooden Fence | 170 | LF | $ 10.00 | $ 1,700.00 |
| 15' Double Security Gate | 1 | EA | $ 8,000.00 | $ 8,000.00 |
| 8" Solenoid Control Altitude Valve | 1 | EA | $ 15,000.00 | $ 15,000.00 |
| 8" and 12" Valves for Altitude Valve Assembly | 1 | LSUM | $ 37,000.00 | $ 37,000.00 |
| Painting Interior Pipe and Valves | 1 | LSUM | $ 2,000.00 | $ 2,000.00 |
| 12" DI Site Piping | 70 | LF | $ 90.00 | $ 6,300.00 |
| Wet Tap with 12"x6" Tapping Sleeve and Valve | 1 | EA | $ 5,500.00 | $ 5,500.00 |
| Fire Hydrant Assembly | 1 | EA | $ 4,500.00 | $ 4,500.00 |
| DI Flanged Piping for Altitude and Check Valves and Drain | 1 | LSUM | $ 4,000.00 | $ 4,000.00 |
| DI Fittings | 2 | TON | $ 6,000.00 | $ 12,000.00 |
| 36"x36" Precast Concrete Catch Basin | 1 | EA | $ 3,500.00 | $ 3,500.00 |
| Precast Concrete Headwall | 1 | EA | $ 2,500.00 | $ 2,500.00 |
| Hydraulic Mixing System | 1 | LSUM | $ 30,000.00 | $ 30,000.00 |
| Erosion Control | 1 | LSUM | $ 2,000.00 | $ 2,000.00 |
| Instrumentation and Electrical: | | | | |
| Grounding Electrode System for 200 Amp Service | 1 | LSUM | $ 500.00 | $ 500.00 |
| Metering Pedestal - Concrete Pad, Galv. Post, AL Framing | 1 | LSUM | $ 6,600.00 | $ 6,600.00 |
| 200 Amp Service - 2" PVC. #3/0 AWG CU | 75 | LF | $ 36.00 | $ 2,700.00 |
| 200 Amp Meter Base - Single Phase, Mounted on Pedestal | 1 | LSUM | $ 200.00 | $ 200.00 |
| Main Service Disconnect - 200 Amp, Enclosed Breaker | 1 | LSUM | $ 450.00 | $ 450.00 |
| 200 Amp Main Feeder - Main Service Disconnect to Panel | 50 | LF | $ 54.00 | $ 2,700.00 |
| 200 Amp Panel - Main Breaker, Branch Breakers | 1 | LSUM | $ 2,250.00 | $ 2,250.00 |
| Relocte SCADA Panel | 1 | LSUM | $ 400.00 | $ 400.00 |
| Relocated Telemetry Panel | 1 | LSUM | $ 400.00 | $ 400.00 |
| Interference Lighting System - Panel, Luminaires, Wiring | 1 | LSUM | $ 12,400.00 | $ 12,400.00 |
| Door Contacts - SCADA Panel Wiring Included | 3 | EA | $ 520.00 | $ 1,560.00 |
| Altitude Valve Controls & Monitor | 1 | LSUM | $ 1,250.00 | $ 1,250.00 |
| Pressure Transducer & Radar Depth Gauge | 1 | LSUM | $ 7,100.00 | $ 7,100.00 |
| Electrical Permit | 1 | LSUM | $ 1,800.00 | $ 1,800.00 |
| Panel Grounding - Ground 200 Amp Panel per NEC 250 | 1 | LSUM | $ 200.00 | $ 200.00 |
| Chlorine and PH Probe | 1 | LSUM | $ 6,500.00 | $ 6,500.00 |
| Turbidometer | 1 | LSUM | $ 5,000.00 | $ 5,000.00 |
| | | | Sub-Total | $ 317,770.00 |
| Contingency (10%) | | | | $ 31,780.00 |
| City of Fort Thomas Property Paving Allowance | 1 | LSUM | $ 35,000.00 | $ 35,000.00 |
| City of Fort Thomas Entrance Repair Allowance | 1 | LSUM | $ 10,000.00 | $ 10,000.00 |
| | | | Sub-Total | $ 394,550.00 |

| GRW Engineers, Inc. | Project: | Lumley Tank Replacement | | |
|---|---|---|---|---|
| | Owner: | Northern Kentucky Water District | | |
| | Project No.: | 4383 | | |
| **Opinion of Project Cost** | Date: | 07/14/15 | Dwg. No.: | All |
| | Estimator: | AAB/ADH | Type: | 100% Design |

| Item Description | No. of Units | Units of Measure | Unit Cost | Total Cost |
|---|---|---|---|---|
| **Base Bid Option No.2 - 500,000 Gallon Pedesphere Elevated Water Storage Tank** | | | | |
| **Site Work, Valves, Piping and Electrical:** | | | | |
| Contractor Overhead & Profit (15%) | | | | $ 59,190.00 |
| **Sub-Total for Site Work, Valves, Piping and Electrical (Rounded)** | | | | **$ 454,000.00** |
| **New Elevated Tank:** | | | | |
| 500,000 Pedesphere Elevated Tank | 1 | LSUM | $ 1,975,000.00 | $ 1,975,000.00 |
| Included: Paint containment, painting, shallow foundation system | | | | |
| Cellular Equipment Attachments | 1 | LSUM | $ 25,000.00 | $ 25,000.00 |
| Deep Drilled Shafts Foundation | 1 | LSUM | $ 50,000.00 | $ 50,000.00 |
| | | | Sub-Total | $ 2,050,000.00 |
| Contingency (10%) | | | | $ 205,000.00 |
| | | | Sub-Total | $ 2,255,000.00 |
| **Sub-Total for New Tank, Site Work, Piping, Valves and Electrical (Rounded)** | | | | **$ 2,709,000.00** |
| Bonding & Insurance (1%) | | | | $ 27,090.00 |
| **Sub-Total for Construction Costs** | | | | **$ 2,736,090.00** |
| **Professional Services:** | | | | |
| GRW Engineers Services (Design, Admin, CA) | | | | $ 83,642.48 |
| Geotechnical Services | | | | $ 8,544.35 |
| Tank Inspection Services | | | | $ 17,928.00 |
| **Sub-Total for Professional Services** | | | | **$ 110,114.83** |
| | | | | |
| **TOTAL ESTIMATED COSTS FOR 500,000 GALLON PEDESPHERE TANK (BASE BID OPTION NO.2)** | | | | **$ 2,847,000.00** |

Case No. 2015-00295
Exhibit ___A_____

# NORTHERN KENTUCKY WATER DISTRICT

## ***Project***
## ***Lumley Tank Replacement***

Campbell County
184-0487

Plans and Specifications prepared by GRW titled "Lumley Tank Replacement"

Northern Kentucky
Water District

The following items are enclosed separately from this volume in hard copy and enclosed in this submittal in electronic copy.

- Plans prepared by GRW titled "Lumley Tank Replacement" dated July 2015
- Specifications prepared by GRW titled "Lumley Tank Replacement" dated July 2015

2835 Crescent Springs Rd Erlanger, KY 41018 (859) 578-9898 Fax (859) 578-5456

Case No. 2015-00295
Exhibit B

# NORTHERN KENTUCKY WATER DISTRICT

## ***Project***
## ***Lumley Tank Replacement***

Campbell County
184-0487

# CERTIFIED STATEMENTS

Affidavit

Franchises

Plan Review and Permit Status

Easements and Right-of-Way Status

Construction Dates and Proposed Date In Service

Plant Retirements

**AFFIDAVIT**
**Lumley Tank Replacement**

Affiant, Jack Bragg, Jr., being the first duly sworn, deposes and says that he is the Vice President of Finance and Support Services of the Northern Kentucky Water District, which he is the Applicant in the proceeding styled above; that he has read the foregoing "Lumley Tank Replacement Project" Application and knows the contents thereof, and that the same is true of his own knowledge, except as to matters which are therein stated on information or belief, and that is to those matters he believes them to be true.

Jack Bragg, Jr.
Vice President, Finance & Support Services
Northern Kentucky Water District

Subscribed and sworn to before me in said County to be his act and deed by Jack Bragg, Jr., Vice President of Finance and Support Services of the Northern Kentucky Water District, this

28TH day of AUGUST 2015.

NOTARY PUBLIC
Kenton County, Kentucky
My commission expires May 6, 2017

COLLEEN KELLY MEDERT
NOTARY PUBLIC
STATE AT LARGE, KY.
My Commission Expires 5/6/17

Franchises required – None

Plan Review and Permit Status - The District has reviewed and approved the plans and specifications prepared by GRW titled "Lumley Tank Replacement" dated July 2015.

The District received technical approval from the Division of Water on June 24, 2015 (see attached letter).

Easements and Right-of-Way Status – Permanent Easements and Right-of-Way statements are not required. While not required for construction, temporary construction easements were recommended during design to provide a safe buffer around the construction site. The District is currently in negotiations with 4 property owners in an attempt to secure temporary easements.

Start date of construction – November 2015

Proposed date in service – November 2016

Plant retirements – There are no retirements as a result of this project.

Case No. 2015-00295
Exhibit B

# NORTHERN KENTUCKY WATER DISTRICT

## ***Project***
## ***Lumley Tank Replacement***

Campbell County
184-0487

# PLAN REVIEW AND PERMIT STATUS

Approval Letter from Kentucky Division of Water

SRF F15-11 Campbell and Kenton County Water Main and Storage Tank Improvements
Division of Water Binding Commitment Letter

STEVEN L. BESHEAR
GOVERNOR

LEONARD K. PETERS
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
200 FAIR OAKS LANE, 4TH FLOOR
FRANKFORT, KENTUCKY 40601
www.kentucky.gov

June 24, 2015

Ms. Amy Kramer
Northern Kentucky Water District
2835 Crescent Springs Road
Erlanger, KY 41018

RE: Northern KY Water District
AI # 2485, APE20150007
PWSID # 0590220-15-007
Lumley Tank Replacement Permit
Campbell County, KY

Dear Ms. Kramer:

We have reviewed the plans and specifications for the above referenced project. The plans include the construction of a new 500,000 gallon elevated water tank and the demolition of the existing 275,000 gallon and 80 LF of 12-inch DI water line. 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 DOW records, this project is being funded by a State Revolving Fund (SRF) loan. Therefore, this approval is for the technical aspects of the project only. Currently, a State Planning and Environmental Assessment Report (SPEAR) related to your funding application is under review. **Therefore, you are NOT authorized to advertise for bids at this time. Should you choose to proceed with the bidding and award a contract prior to DOW approval, this will be at your own risk and payment from the SRF program is not guaranteed**

If you have any questions concerning this project, please contact Mr. Mortaza Tabayeh at 502-564-3410 extension 4826.

Sincerely,

Mark Rasche

Mark Rasche, P.E.
Supervisor, Engineering Section
Water Infrastructure Branch
Division of Water

MR: MT

Enclosures
C: Alan Bryan, P.E., GRW (by e-mail only)
Northern Kentucky District (Campbell County) Health Department (by e-mail only)
Public Service Commission (by e-mail only)
Division of Plumbing (by e-mail only)

**Distribution-Major Construction**

Northern KY Water District

Facility Requirements

Activity ID No.:APE20150007



**GACT0000000245 (Lumley Tank Replacement)Construction of a new 500,000 gallon elevated water tank and Demolish of the existing 275000 gallon and 80 LF of 12-inch DI .:**

## Narrative Requirements:

| Condition No. | Condition |
|---|---|
| T-1 | Construction of this project shall not result in the water system's inability to supply consistent water service in compliance with 401 KAR 8:010 through 8:600. [401 KAR 8:100 Section 5] |
| T-2 | The public water system shall not implement a change to the approved plans without the prior written approval of the cabinet. [401 KAR 8:100 Section 4(3)] |
| T-3 | A proposed change to the approved plans affecting sanitary features of design shall be submitted to the cabinet for approval in accordance with Section 2 of this administrative regulation. [401 KAR 8:100 Section 4(2)] |
| T-4 | During construction, a set of approved plans and specifications shall be available at the job site. Construction shall be performed in accordance with the approved plans and specifications. [401 KAR 8:100 Section 3(1)] |
| T-5 | Unless construction begins within two (2) years from the date of approval of the final plans and specifications, the approval shall expire. [401 KAR 8:100 Section 3(3)] |
| T-6 | Upon completion of construction, a professional engineer shall certify in writing that the project has been completed in accordance with the approved plans and specifications. [401 KAR 8:100 Section 4(1)] |
| T-7 | The system shall be designed to maintain a minimum pressure of 20 psi at ground level at all points in the distribution system under all conditions of flow. [Recommended Standards for Water Works 8.2.1, Drinking Water General Design Criteria IV.1.a] |
| T-8 | Water storage tanks shall have a minimum 100% turnover rate of once per 72 hours. [Drinking Water General Design Criteria IV.6.a] |
| T-9 | Minimum water level for all gravity storage tanks shall maintain a minimum design pressure of 30 psi for all potential points of use supplied by the tank. [Drinking Water General Design Criteria IV.6.b] |
| T-10 | Separate inlet and outlet is required on storage tanks; and the inlet has to be in the upper half of the tank (unless there is a separate mixing system). [Drinking Water General Design Criteria IV.6.c] |
| T-11 | The maximum variation between high and low levels in storage structures providing pressure to a distribution system should not exceed 30 feet. [Recommended Standards for Water Works 7.3.1] |

**GACT0000000245 (Lumley Tank Replacement)Construction of a new 500,000 gallon elevated water tank and Demolish of the existing 275000 gallon and 80 LF of 12-inch DI .:**

## Narrative Requirements:

| Condition No. | Condition |
|---|---|
| T-12 | Finished water storage structures which provide pressure directly to the distribution system shall be designed so they can be isolated from the distribution system and drained for cleaning or maintenance without causing a loss of pressure in the distribution system. [Recommended Standards for Water Works 7.3.2] |
| T-13 | The storage structure drain shall discharge to the ground surface with no direct connection to a sewer or storm drain. [Recommended Standards for Water Works 7.3.2] |
| T-14 | Adequate controls shall be provided to maintain levels in distribution system storage structures. Level indicating devices should be provided at a central location. [Recommended Standards for Water Works 7.3.3] |
| T-15 | The minimum storage capacity (or equivalent capacity) for systems not providing fire protection shall be equal to the average daily consumption. [Recommended Standards for Water Works 7.0.1.b] |
| T-16 | The system should be designed to facilitate turnover of water in the reservoir. [Recommended Standards for Water Works 7.0.6] |
| T-17 | Excessive storage capacity should be avoided to prevent potential water quality deterioration problems. [Recommended Standards for Water Works 7.0.1.c] |
| T-18 | The overflow pipe shall be of sufficient diameter to permit waste of water in excess of the filling rate. [Recommended Standards for Water Works 7.0.7.d] |
| T-19 | Finished water storage structures shall be designed with reasonably convenient access to the interior for cleaning and maintenance. [Recommended Standards for Water Works 7.0.8] |
| T-20 | Finished water storage structures shall be vented. Vents shall prevent the entrance of surface water, rainwater, bird, and animals. The overflow pipe shall not be considered a vent. Open construction between the sidewall and roof is not permissible. [Recommended Standards for Water Works 7.0.9] |
| T-21 | Finished water storage structures and their appurtenances, especially the riser pipes, overflows, and vents, shall be designed to prevent freezing. Equipment used for freeze protection that will come into contact with the potable water shall meet ANSI/NSF Standard 61. [Recommended Standards for Water Works 7.0.13] |
| T-22 | If a flapper valve is utilized, a screen shall be provide inside the valve. Provisions must be included to prevent the flapper from freezing shut. [Recommended Standards for Water Works 7.0.7.e] |
| T-23 | The roof and sidewalls of all water storage structures must be watertight with no openings except properly constructed vents, manholes, overflows, risers, drains, pump mountings, control ports, or piping for inflow and outflow. [Recommended Standards for Water Works 7.0.10] |

**GACT0000000245 (Lumley Tank Replacement)Construction of a new 500,000 gallon elevated water tank and Demolish of the existing 275000 gallon and 80 LF of 12-inch DI .:**

## Narrative Requirements:

| Condition No. | Condition |
|---|---|
| T-24 | Any pipes running through the roof or sidewall of a metal storage structure must be welded, or properly gasketed. In concrete tanks, these pipes shall be connected to standard wall castings which were poured in place during the forming of the concrete. [Recommended Standards for Water Works 7.0.10.a] |
| T-25 | Openings in the roof of a storage structure designed to accommodate control apparatus or pump columns, shall be curbed and sleeved with proper additional shielding to prevent contamination from surface or floor drainage. [Recommended Standards for Water Works 7.0.10.b] |
| T-26 | Valves and controls should be located outside the storage structure so that the valve stems and similar projections will not pass through the roof or top of the reservoir. [Recommended Standards for Water Works 7.0.10.c] |
| T-27 | Every catwalk over finished water in a storage structure shall have a solid floor with sealed raised edges, designed to prevent contamination from shoe scrapings and dirt. [Recommended Standards for Water Works 7.0.14] |
| T-28 | The discharge pipes from water storage structures shall be located in a manner that will prevent the flow of sediment into the distribution system. [Recommended Standards for Water Works 7.0.15] |
| T-29 | Smooth-nosed sampling tap(s) shall be provided to facilitate collection of water samples for both bacteriological and chemical analyses. The sample tap(s) shall be easily accessible. [Recommended Standards for Water Works 7.0.19] |
| T-30 | Sewers, drains, standing water, and similar sources of possible contamination must be kept at least 50 feet from water storage facilities. Gravity sewers constructed of water main quality pipe, pressure tested in place without leakage, may be used at distances greater than 20 feet but less than 50 feet. [Recommended Standards for Water Works 7.0.2.c] |
| T-31 | The roof of the storage structure shall be well drained. Downspout pipes shall not enter or pass through the reservoir. [Recommended Standards for Water Works 7.0.10.d] |
| T-32 | Porous material, including wood and concrete block shall not be used for potable water contact applications. [Recommended Standards for Water Works 7.0.11] |
| T-33 | All finished water storage structures shall have suitable watertight roofs which exclude birds, animals, insects, and excessive dust. [Recommended Standards for Water Works 7.0.3] |
| T-34 | 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] |

**GACT0000000245 (Lumley Tank Replacement)Construction of a new 500,000 gallon elevated water tank and Demolish of the existing 275000 gallon and 80 LF of 12-inch DI .:**

## Narrative Requirements:

| Condition No. | Condition |
|---|---|
| T-35 | Ladders, ladder guards, balcony railings, and safely located entrance hatches shall be provided where applicable. [Recommended Standards for Water Works 7.0.12.a] |
| T-36 | All water storage structures shall be provided with an overflow which is brought down to an elevation between 12 and 24 inches above the ground surface, and discharges over a drainage inlet structure or a splash plate. All overflow pipes shall be located so that any discharge is visible. [Recommended Standards for Water Works 7.0.7] |
| T-37 | No drain on a water storage structure may have a direct connection to a sewer or storm drain. [Recommended Standards for Water Works 7.0.5] |
| T-38 | The design shall allow draining the storage facility for cleaning or maintenance without causing loss of pressure in the distribution system. [Recommended Standards for Water Works 7.0.5] |
| T-39 | No overflow may be connected directly to a sewer or a storm drain. [Recommended Standards for Water Works 7.0.7] |
| T-40 | Proper protection shall be given to metal surfaces by paints or other protective coatings, by cathodic protective devices, or by both. [Recommended Standards for Water Works 7.0.17] |
| T-41 | Paint systems shall meet ANSI/NSF standard 61. [Recommended Standards for Water Works 7.0.17.a] |
| T-42 | Interior paint must be applied, cured, and used in a manner consistent with the ANSI/NSF approval. [Recommended Standards for Water Works 7.0.17.a] |
| T-43 | After curing, the coating shall not transfer any substance to the water which will be toxic or cause taste or odor problems. [Recommended Standards for Water Works 7.0.17.a] |
| T-44 | Wax coatings for the tank interior shall not be used on new tanks. [Recommended Standards for Water Works 7.0.17.b] |
| T-45 | Old wax coating must be completely removed before using another tank coating. [Recommended Standards for Water Works 7.0.17.b] |
| T-46 | Finished water storage structures shall be disinfected in accordance with AWWA Standard C652. Two or more successive sets of samples, taken at 24?hour intervals, shall indicate microbiologically satisfactory water before the facility is placed into operation. [Recommended Standards for Water Works 7.0.18.a] |

**GACT0000000245 (Lumley Tank Replacement)Construction of a new 500,000 gallon elevated water tank and Demolish of the existing 275000 gallon and 80 LF of 12-inch DI .:**

## Narrative Requirements:

| Condition No. | Condition |
|---|---|
| T-47 | The disinfection procedure specified in AWWA Standard C652 chlorination method 3, section 4.3 which allows use of the highly chlorinated water held in the storage tank for disinfection purposes, is prohibited unless the initial heavily chlorinated water is properly disposed. [Recommended Standards for Water Works 7.0.18.c] |
| T-48 | The overflow for an elevated tank shall open downward and be screened with a four mesh, non-corrodible screen. [Recommended Standards for Water Works 7.0.7.c] |
| T-49 | Elevated storage tank vents shall open downward, and be fitted with either four mesh non-corrodible screen, or with finer mesh non-corrodible screen in combination with an automatically resetting pressure-vacuum relief mechanism. [Recommended Standards for Water Works 7.0.9.e] |
| T-50 | Elevated storage tanks shall have at least one of the access manholes framed at least four inches above the surface of the roof at the opening. All other manholes or access ways shall be bolted and gasketed. [Recommended Standards for Water Works 7.0.8.1] |
| T-51 | Elevated tanks with riser pipes over eight inches in diameter shall have protective bars over the riser openings inside the tank. [Recommended Standards for Water Works 7.0.12.b] |
| T-52 | Railings or handholds shall be provided on elevated tanks where persons must transfer from the access tube to the water compartment. [Recommended Standards for Water Works 7.0.12.c] |
| T-53 | When an internal overflow pipe is used on elevated tanks, it should be located in the access tube. For vertical drops on other types of storage facilities, the overflow pipe should be located on the outside of the structure. [Recommended Standards for Water Works 7.0.7.a] |
| T-54 | If a water circulation system is used, it is recommended that the circulation pipe be located separately from the riser pipe. [Recommended Standards for Water Works 7.0.13] |
| T-55 | Reservoirs with pre-cast concrete roof structures must be made watertight with the use of a waterproof membrane or similar product. [Recommended Standards for Water Works 7.0.10.f] |

**PORT0000000249 (WLE)80 LF of 12-inch DI .:**

## Narrative Requirements:

| Condition No. | Condition |
|---|---|
| T-1 | Construction of this project shall not result in the water system's inability to supply consistent water service in compliance with 401 KAR 8:010 through 8:600. [401 KAR 8:100 Section 5] |
| T-2 | The public water system shall not implement a change to the approved plans without the prior written approval of the cabinet. [401 KAR 8:100 Section 4(3)] |
| T-3 | A proposed change to the approved plans affecting sanitary features of design shall be submitted to the cabinet for approval in accordance with Section 2 of this administrative regulation. [401 KAR 8:100 Section 4(2)] |
| T-4 | During construction, a set of approved plans and specifications shall be available at the job site. Construction shall be performed in accordance with the approved plans and specifications. [401 KAR 8:100 Section 3(1)] |
| T-5 | Unless construction begins within two (2) years from the date of approval of the final plans and specifications, the approval shall expire. [401 KAR 8:100 Section 3(3)] |
| T-6 | Upon completion of construction, a professional engineer shall certify in writing that the project has been completed in accordance with the approved plans and specifications. [401 KAR 8:100 Section 4(1)] |
| T-7 | The system shall be designed to maintain a minimum pressure of 20 psi at ground level at all points in the distribution system under all conditions of flow. [Recommended Standards for Water Works 8.2.1, Drinking Water General Design Criteria IV.1.a] |
| T-8 | Water lines should be hydraulically capable of a flow velocity of 2.5 ft/s while maintaining a pressure of at least 20 psi. [Drinking Water General Design Criteria IV.1.b] |
| T-9 | The normal working pressure in the distribution system at the service connection shall not be less than 30 psi under peak demand flow conditions. Peak demand is defined as the maximum customer water usage rate, expressed in gallons per minute (gpm), in the pressure zone of interest during a 24 hour (diurnal) time period. [Drinking Water General Design Criteria IV.1.d] |
| T-10 | When static pressure exceeds 150 psi, pressure reducing devices shall be provided on mains or as part of the meter setting on individual service lines in the distribution system. [Drinking Water General Design Criteria IV.1.c] |
| T-11 | The minimum size of water main in the distribution system where fire protection is not to be provided should be a minimum of three (3) inch diameter. Any departure from minimum requirements shall be justified by hydraulic analysis and future water use, and can be considered only in special circumstances. [Recommended Standards for Water Works 8.2.2, Drinking Water General Design Criteria IV.2.b] |

**PORT0000000249 (WLE)80 LF of 12-inch DI .:**

## Narrative Requirements:

| Condition No. | Condition |
|---|---|
| T-12 | Water mains not designed to carry fire-flows shall not have fire hydrants connected to them. [Recommended Standards for Water Works 8.4.1.b] |
| T-13 | Flushing devices should be sized to provide flows which will give a velocity of at least 2.5 feet per second in the water main being flushed. [Recommended Standards for Water Works 8.2.4.b, Recommended Standards for Water Works 8.4.1.b] |
| T-14 | No flushing device shall be directly connected to any sewer. [Recommended Standards for Water Works 8.2.4.b, Recommended Standards for Water Works 8.4.1.b] |
| T-15 | Pipe shall be constructed to a depth providing a minimum cover of 30 inches to top of pipe. [Drinking Water General Design Criteria IV.3.a] |
| T-16 | Water mains shall be covered with sufficient earth or other insulation to prevent freezing. [Recommended Standards for Water Works 8.7] |
| T-17 | 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 of at least six inches below the bottom of the pipe. [Recommended Standards for Water Works 8.7] |
| T-18 | Water line installation shall incorporate the provisions of the AWWA standards and/or manufacturer's recommended installation procedures. [Recommended Standards for Water Works 8.7] |
| T-19 | All materials used for the rehabilitation of water mains shall meet ANSI/NSF standards. [Recommended Standards for Water Works 8.1] |
| T-20 | Packing and jointing materials used in the joints of pipe shall meet the standards of AWWA and the reviewing authority. [Recommended Standards for Water Works 8.1] |
| T-21 | 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 8.7] |
| T-22 | All materials including pipe, fittings, valves and fire hydrants shall conform to the latest standards issued by the ASTM, AWWA and ANSI/NSF, where such standards exist, and be acceptable to the Division of Water. [Recommended Standards for Water Works 8.1] |
| T-23 | Water mains which have been used previously for conveying potable water may be reused provided they meet the above standards and have been restored practically to their original condition. [Recommended Standards for Water Works 8.1] |

**PORT0000000249 (WLE)80 LF of 12-inch DI .:**

## Narrative Requirements:

| Condition No. | Condition |
|---|---|
| T-24 | Manufacturer approved transition joints shall be used between dissimilar piping materials. [Recommended Standards for Water Works 8.1] |
| T-25 | Pipes and pipe fittings containing more than 8% lead shall not be used. All products shall comply with ANSI/NSF standards. [Recommended Standards for Water Works 8.1] |
| T-26 | The minimum size of water main which provides for fire protection and serving fire hydrants shall be six?inch diameter. [Recommended Standards for Water Works 8.2, Drinking Water General Design Criteria IV.2.a] |
| T-27 | Gaskets containing lead shall not be used. Repairs to lead?joint pipe shall be made using alternative methods. [Recommended Standards for Water Works 8.1] |
| T-28 | Pipe materials shall be selected to protect against both internal and external pipe corrosion. [Recommended Standards for Water Works 8.1] |
| T-29 | Dead end mains shall be equipped with a means to provide adequate flushing. [Recommended Standards for Water Works 8.2] |
| T-30 | The hydrant lead shall be a minimum of six inches in diameter. Auxiliary valves shall be installed on all hydrant leads. [Recommended Standards for Water Works 8.4.3] |
| T-31 | A sufficient number of valves shall be provided on water mains to minimize inconvenience and sanitary hazards during repairs. [Recommended Standards for Water Works 8.3] |
| T-32 | Wherever possible, chambers, pits or manholes containing valves, blow?offs, meters, or other such appurtenances to a distribution system, shall not be located in areas subject to flooding or in areas of high groundwater. Such chambers or pits should drain to the ground surface, or to absorption pits underground. The chambers, pits and manholes shall not connect directly to any storm drain or sanitary sewer. Blow?offs shall not connect directly to any storm drain or sanitary sewer. [Recommended Standards for Water Works 8.6] |
| T-33 | At high points in water mains where air can accumulate provisions shall be made to remove the air by means of air relief valves. [Recommended Standards for Water Works 8.5.1] |
| T-34 | Automatic air relief valves shall not be used in situations where flooding of the manhole or chamber may occur. [Recommended Standards for Water Works 8.5.1] |

**PORT0000000249 (WLE)80 LF of 12-inch DI .:**

## Narrative Requirements:

| Condition No. | Condition |
|---|---|
| T-35 | The open end of an air relief pipe from automatic valves shall be extended to at least one foot above grade and provided with a screened, downward?facing elbow. [Recommended Standards for Water Works 8.5.2.c] |
| T-36 | Discharge piping from air relief valves shall not connect directly to any storm drain, storm sewer, or sanitary sewer. [Recommended Standards for Water Works 8.5.2.d] |
| T-37 | Water pipe shall be constructed with a lateral separation of 10 feet or more from any gravity sanitary or combined sewer measured edge to edge where practical. If not practical a variance may be requested to allow the water pipe to be installed closer to the gravity sanitary or combined sewer provided the water pipe is laid in a separate trench or undisturbed shelf located on one side of the sewer with the bottom of the pipe at least 18 inches above the top of the gravity sanitary or combined sewer pipe. [Drinking Water General Design Criteria IV.3.b] |
| T-38 | Water lines crossing sanitary, combined or storm sewers shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sanitary, combined or storm sewer with preference to the water main located above the sanitary, combined or storm sewer. [Drinking Water General Design Criteria IV.3.c] |
| T-39 | At crossings, one full length of water pipe shall be located so both joints will be as far from the sewer as possible. [Recommended Standards for Water Works 8.8.3.b] |
| T-40 | There shall be no connection between the distribution system and any pipes, pumps, hydrants, or tanks whereby unsafe water or other contaminating materials may be discharged or drawn into the system. [Recommended Standards for Water Works 8.10.1] |
| T-41 | Water utilities shall have a cross connection program conforming to 401 KAR 8. [Recommended Standards for Water Works 8.10.1] |
| T-42 | Installed pipe shall be pressure tested and leakage tested in accordance with the appropriate AWWA Standards. [Recommended Standards for Water Works 8.7.6] |
| T-43 | New, cleaned and repaired water mains shall be disinfected in accordance with AWWA Standard C651. The specifications shall include detailed procedures for the adequate flushing, disinfection, and microbiological testing of all water mains. In an emergency or unusual situation, the disinfection procedure shall be discussed with the Division of Water. [Recommended Standards for Water Works 8.7.7] |
| T-44 | A minimum cover of five feet shall be provided over pipe crossing underwater. [Recommended Standards for Water Works 8.9.2] |
| T-45 | Valves shall be provided at both ends of water crossings so that the section can be isolated for testing or repair; the valves shall be easily accessible, and not subject to flooding for pipes crossing underwater. [Recommended Standards for Water Works 8.9.2.b] |

**PORT0000000249 (WLE)80 LF of 12-inch DI .:**

## Narrative Requirements:

| Condition No. | Condition |
|---|---|
| T-46 | Permanent taps or other provisions to allow insertion of a small meter to determine leakage and obtain water samples on each side of the valve closest to the supply source for pipes crossing. [Recommended Standards for Water Works 8.9.2.c] |

STEVEN L. BESHEAR
GOVERNOR

LEONARD K. PETERS
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
200 FAIR OAKS LANE, 4TH FLOOR
FRANKFORT, KENTUCKY 40601
www.kentucky.gov

August 31, 2015

Ms. Amy Kramer
Northern Kentucky Water District
2835 Crescent Springs Road
Erlanger, KY 41018

RE: F15-011
Northern KY Water District--2485
Lumley Tank Replacement Permit
Activity ID: FGL20150008

Dear Ms. Kramer:

The Kentucky Division of Water (DOW) has reviewed for completeness and adequacy the construction plans and specifications submitted for the above referenced contract. The DOW has granted technical approval on June 24, 2015. These plans consist of the construction of a new 400,00 gallon elevated water tank, the demolition of the existing 275,000 gallon tank and 80 LF of 12-inch DI water line. (Let it be noted the original approval was for a 500,000 gallon tank which has since been changed) The approval conditions and a list of eligible/ineligible items are enclosed. Please note that ineligible items cannot be funded using State Revolving Fund (SRF) monies, and must be paid by other funding sources.

We are enclosing one (1) set of approved plans and specifications. An identical set should be made available at the project site at all times. If modifications are made to these plans and specifications before bidding, two (2) complete sets of as-bid plans and specifications must be submitted to the DOW for approval. A second DOW construction approval must be issued by separate correspondence before proceeding with advertising for bids. Any red line changes that were made by DOW personnel on the approved plans shall be incorporated into the bid set plans unless an alternative is approved.

You may now advertise for bids on the construction of this project. In addition to other notifications, this project must be advertised in the newspaper of the largest daily circulation in the project area.

You are cautioned not to advertise unless you have a proper wage decision. The Federal Davis-Bacon wage rates and Kentucky prevailing wage rates are applicable for this project. Please contact all other funding sources for their requirements pertaining to federal or state wage rates.

You are reminded that the construction contracts are subject to the equal employment opportunity requirements contained in Executive Order 11246. Equal employment opportunity affirmative action by the prime contractors and all subcontractors is mandated throughout the duration of the contract. Documentation of efforts to comply with Executive Order 11246, Equal Employment Opportunity is required to be kept by the borrower.

Review the attached Project Review and Cost Summary form for details of the information to be collected and retained in your files or to be submitted to DOW for review and approval. This form must be completed, signed by the recipient, and with the necessary information be then forwarded to the DOW. This signature will certify that all the information to be retained by the recipient has been secured and is available for review by the Division at the pre-construction conference. The required information must be approved by the DOW before executing any contracts.

Along with the Project Review and Cost Summary form, the following items must be submitted to the DOW for review and approval before executing any contracts:

- The bid advertisement
- Revised Project Budget
- Certified bid tabulation
- Documentation of compliance with DBE Good Faith Effort in accordance with 40 CFR 33.301

These items will be reviewed as a part of the Authority to Award process. The DOW will authorize you to award the contracts once these documents are approved

After the Notice to Proceed is signed, the DOW will need a copy of the executed contract documents, including plans and specifications.

Changes orders will require approval from the DOW before payment can be authorized from the State Revolving Fund. Submission of plans and specifications may be required for change order work.

Upon completion of the project, as-built drawings shall be provided to the DOW. As-builts shall be stamped, signed and dated by a professional engineer. A written certification stating that the project was constructed according to the approved plans shall be provided to the DOW by a professional engineer.

The previously issued construction permit] has been issued under the provisions of KRS Chapter 224 and the regulations promulgated pursuant thereto. Issuance of this approval 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.

You are cautioned that the advertisement and award of this contract will be subject to the laws and regulations that govern the State Revolving Fund (SRF) and to the conditions of your loan agreement. If we can be of further assistance, please call Mortaza Tabayeh, Project Engineer, at (502) 564-3410.

Sincerely,

Greg Goode, P.E.
Engineering Section
Water Infrastructure Branch
Division of Water

Enclosures

Eligible List, Ineligible List
Project Review and Cost Summary Form
(1 set plans and specification, if applicable)

C: GRW Engineers Inc
Kentucky Infrastructure Authority
Cabinet for Economic Development
Northern Kentucky Health Department
Division of Plumbing

## SRF ELIGIBLE ITEMS:

All items eligible

## SRF INELIGIBLE ITEMS:

None determined

## APPROVAL CONDITIONS:

Complete and return the Project Review and Cost Summary Form.

**GRW** | engineers | architects | planners
*9710 Bunsen Parkway • Louisville, KY 40299*
*502.489.8484 • www.grwinc.com*



August 27, 2015

Mr. Greg Goode
Kentucky Division of Water
Water Infrastructure Branch
200 Fair Oaks Lane, 4th Floor
Frankfort, KY 40601

Re: Lumley Tank Replacement
Northern Kentucky Water District
Fort Thomas, Kentucky
GRW Project No. 4383
AI #2485, APE20150007
PWSID #0590220-15-007

Dear Mr. Goode:

Please find enclosed for the above referenced project: one set of revised stamped and signed plans, revised specifications and the original KDOW construction permit issued for the project on July 24, 2015. The Northern Kentucky Water District has elected to construct a 400,000 gallon tank instead of a 500,000 gallon tank as was identified in the original permit application plans and specifications. The enclosed revised plans and specs reflect a 400,000 gallon tank instead.

If you have any questions or comments, please contact me at 859-223-3999 or abryan@grwinc.com.

Sincerely,

Alan A. Bryan, P.E.
GRW Engineers, Inc.

Enclosures: Revised Plans and Specifications
Original Issued KDOW Construction Permit

Cc: Amy Kramer, NKWD, w/o enclosures
Dave Enzweiler, NKWD, w/o enclosures

STEVEN L. BESHEAR
GOVERNOR

LEONARD K. PETERS
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
200 FAIR OAKS LANE, 4TH FLOOR
FRANKFORT, KENTUCKY 40601
www.kentucky.gov

October 29, 2014

Mr. John Covington
Executive Director
Kentucky Infrastructure Authority
1024 Capital Center Drive, Suite 340
Frankfort, Kentucky 40601

Re: F15-011
Northern KY Water District--2485
Activity ID: FGL20140007
*HUC11:* 05090203010 Watershed: Ohio River, near Ft. Thomas
05090203040 Ohio River, near Constance
05100101270 Licking River, near mouth
05100101290 Banklick Creek
Binding Commitment

Dear Mr. Covington:

The Division of Water (DOW) hereby certifies that the Northern Kentucky Water District is entitled to receive priority for funding for their Northern Kentucky Water District project and is eligible to receive $4,000,000 from the Drinking Water State Revolving Fund. The following information is provided:

1. Project specific environmental information is expected to be submitted to DOW on January 30, 2015.

2. Plans and specifications are expected to be submitted to DOW between January 1-May 15, 2015.

3. Construction bids are expected to be opened between March 1-August 1, 2015

The KIA conditional commitment letter should include the following general conditions to satisfy federal requirements:

1. The entire project must have undergone a complete environmental review resulting in a Categorical Exclusion Determination (CED), a Finding of No Significant Impact (FONSI), or an Environmental Impact Statement (EIS) with a Record of Decision issued by the Department for Environmental Protection prior to advertising for bids.

2. The borrower must receive DOW approval of the Plans and Specifications with regard to SRF funding for each identified contract prior to advertising for bids.

3. The Authority to Award (bid) package, including the Disadvantaged Business Enterprise (DBE) reviews, must be approved by DOW prior to the contract being awarded. DOW must conduct a preconstruction and project management conference.

4. Documentation of final funding commitments from all parties other than the Kentucky Infrastructure Authority (KIA) as reflected in the credit analysis shall be provided to KIA prior to their loan closing and disbursement of the loan monies. Rejections of any anticipated project funding shall be immediately reported to KIA and may cause this loan to be subject to further consideration.

5. The borrower must complete and submit any missing or incomplete parts of the Application to KIA upon request.

6. The Loan Agreement must be executed within six (6) months from bid opening.

7. The city must agree to expend all loan funds within six months of the date of initiation of operation.

Upon compliance with the general conditions, the DOW will issue its final project certification prior to finalizing the loan agreement.

The SRF application review has been completed by staff of the KIA. If you have any questions or concerns regarding missing items or additional submission requirements, please contact Jeff Abshire, Analyst at (502) 573-0260. Should you have any questions concerning this letter, do not hesitate to contact Cathy Arnett, Project Manager, at (502) 564-3410, extension 4594.

Sincerely,

Peter Goodmann, Director
Division of Water

PG/BG:CA

c: Richard Harrison, NKWD

# COORDINATION SHEET
# DEPARTMENT FOR ENVIRONMENTAL PROTECTION
# DIVISION OF WATER

**Date:** 10/2/2014

| **REFERENCE NKWD Binding Commitment F15-011 AI 2485** | |
|---|---|
| **FROM:** Cathy Arnett | **PURPOSE:** Signature |

| | |
|---|---|
| **(1) TO: Buddy**<br>☑ **APPROVE**<br>☐ **DISAPPROVE**<br>BJ — **Initials**<br>10/30/14 — **Date** | **COMMENTS:** |
| **(2) TO: Shafiq Amawi**<br>☑ **APPROVE**<br>☐ **DISAPPROVE**<br>SA — **Initials**<br>10/30/2014 — **Date** | **COMMENTS:** |
| **(3) TO: Peter Goodmann, Director**<br>☑ **APPROVE**<br>☐ **DISAPPROVE**<br>PG — **Initials**<br>10/30/2014 — **Date** | **COMMENTS:** Please sign the letter |
| **(4) TO:**<br>☐ **APPROVE**<br>☐ **DISAPPROVE**<br>**Initials** **Date** | **COMMENTS:** |
| **(5) TO:**<br>☐ **APPROVE**<br>☐ **DISAPPROVE**<br>**Initials** **Date** | **COMMENTS:** |

**Last Person Return to:** Cathy Arnett

**WATER INFRASTRUCTURE BRANCH**
**SRF & SPAP SECTION COORDINATION SHEET**

**Date Received 10/28/2014**

REFERENCE: Northern KY Water District AI 2485 FGL 20140007
Loan Number: F15-011
PURPOSE: Binding Commitment Letter to KIA ( comment sheet attached. )
Date Completed: 10/29/2014

---

Project Administrator: Cathy Arnett

| | |
|---|---|
| TO: Cindy<br>Approved ☒ Not Approved ☐<br>DM 10/29/14<br>Initials Date | COMMENTS This project is scheduled for the November Board meeting. Please review and make comments as needed. .<br>**Also see comment sheet attached**: This sheet is going to Pete for any input that you have on the project. |
| TO: Mark<br>Approved ☑ Not Approved ☐<br>MR 10/29/14<br>Initials Date | COMMENTS: SEE Above: Please review and make comments that are needed.<br>RESPONSE: |
| TO:<br>Approved ☐ Not Approved ☐<br>Initials Date | COMMENTS:<br>RESPONSE: |
| TO:<br>Approved ☐ Not Approved ☐<br>Initials Date | COMMENTS:<br>RESPONSE: |
| PROJECT STATUS FILE UPDATE<br>☐ Yes ☐ No | LAST PERSON RETURN TO:<br>☐ Bill Averell x☑ Cathy Arnett<br>☐ Buddy Griffin ☐ Amber Vaughn |

DOW-RP&PSB-PAS 9/16/05

**Northern Kentucky Water District**
**Loan Number F15-011 WX221037006 AI 2485**

Project Description:

The proposed project is seeking a DWSRF Fund F loan in the amount of $4,000,000 for the Campbell & Kenton County Water Main & Storage Tank Improvements Project. This project involves five water main replacement projects on approximately twenty streets and the replacement of a 275,000 gallon storage tank with a 500,000 gallon elevated tank.

1. Project Administrator's Comments: Cathy Arnett

   This Drinking Water project is scheduled to be presented at the November 6 , 2014 KIA Board meeting .

   - SRF loan amount requested is: $4,000,000; Local funds from NKWD: $2,406,830
   - Total Project Cost is: $6,406,830

2. Comments from Engineering: Mark Rasche

3. Comments from Cindy:

Case No. 2015-00295
Exhibit C

# NORTHERN KENTUCKY WATER DISTRICT

## ***Project***
## ***Lumley Tank Replacement***

Campbell County
184-0487

# BID INFORMATION AND BOARD RESOLUTION

Bid Tabulation

Engineer's Recommendation of Award

Board Resolution

Case No. 2015-00295
Exhibit C

# NORTHERN KENTUCKY WATER DISTRICT

## ***Project***
## ***Lumley Tank Replacement***

Campbell County
184-0487

## Bid Tabulation

**PROJECT BID**
**Lumley Tank Replacement**
**Northern Kentucky Water District**
**Erlanger, KY**
**GRW Project No. 4383**

engineering | architecture | geospatial

**BIDS WERE OPENED THURSDAY, August 6, 2015 AT 2:00 P.M. (LOCAL TIME)**

| CONTRACTOR'S NAME AND ADDRESS | Caldwell Tanks<br>4000 Tower Road<br>Louisville, KY 40219 | Phoenix Fabricators & Erectors, Inc.<br>182 South County Road 900 East<br>Avon, IN 46123 | |
|---|---|---|---|
| CERTIFIED CHECK OR BID BOND | 10% | 10% | 10% |
| **Description** | **AMOUNT** | **AMOUNT** | **AMOUNT** |
| **Item No. 1. Base Bid Item**<br>New 500,000 Gallon Elevated Water Storage Tank and Passive Mixing System | **$1,817,000.00** | **$2,138,129.00** | |
| **Additive Bid Alternate No. 1**<br>Amount added to provide the other proposed new 500,000 Gallon Elevated Water Storage Tank and Passive Mixing System (Price added to Base Bid to provide this style tank) | **$249,300.00** | **$144,499.00** | |
| **Deductive Bid Alternate No. 1**<br>Deduct amount to provide a new 400,000 Gallon Multi-Column Elevated Water Storage Tank and Passive Mixing System (Deduct price from Base Bid to provide this size tank) | **($115,000.00)** | **($78,850.00)** | |
| **Deductive Bid Alternate No. 2**<br>Deduct amount to provide a new 400,000 Gallon Pedesphere Elevated Water Storage Tank and Passive Mixing System (Deduct price from Base Bid to provide this size tank) | **$94,000.00** | **($74,694.00)** | |
| **Deductive Bid Alternate No. 3**<br>Deduct amount to provide a new 300,000 Gallon Multi-Column Elevated Water Storage Tank and Passive Mixing System (Deduct price from Base Bid to provide this size tank) | **($256,000.00)** | **($328,021.00)** | |
| **Deductive Bid Alternate No. 4**<br>Deduct amount to provide a new 300,000 Gallon Pedesphere Elevated Water Storage Tank and Passive Mixing System (Deduct price from Base Bid to provide this size tank) | **($103,000.00)** | **($214,232.00)** | |

**I CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE, THIS IS A TRUE AND CORRECT COPY OF BIDS AS RECEIVED.**

**ALAN BRYAN, P.E., PROJECT MANAGER**

**ADDENDA ACKNOWLEDGED BY ALL**

Case No. 2015-00295
Exhibit C

# NORTHERN KENTUCKY WATER DISTRICT

## ***Project***
## ***Lumley Tank Replacement***

Campbell County
184-0487

## Engineer's Recommendation of Award

GRW | engineers | architects | planners
9710 Bunsen Parkway • Louisville, KY 40299
502.489.8484 • www.grwinc.com

August 19, 2015

Amy Kramer, P.E.
Acting V.P., Engineering, Production
and Distribution
Northern Kentucky Water District
2835 Crescent Springs Road
P.O. Box 18640
Erlanger, KY 41018

Re: Lumley Tank Replacement
Fort Thomas, KY
GRW Project No. 4383
**Recommendation Letter**

Dear Ms. Kramer

As you are aware, construction bids for the referenced project were received on Thursday, August 6, 2015. The bid results are as follows:

| Bid Item Description | Caldwell Tanks | Phoenix Fabricators & Erectors, Inc. |
|---|---|---|
| **Item No. 1 Base Bid Item**<br>500,000 Gallon Elevated Water Storage Tank (Multi-Column or Pedesphere) | $1,817,000.00 (Multi-Column) | $2,138,129.00 (Multi-Column) |
| **Additive Bid Alternate No. 1**<br>Add amount for other style of 500,000 Gallon Elevated Water Storage Tank (Multi-Column or Pedesphere) | $249,300.00 (Pedesphere) | $144,499.00 (Pedesphere) |
| **Deductive Bid Alternate No. 1**<br>Deduct amount for 400,000 Gallon Multi-Column Elevated Water Storage Tank | - $115,000.00 | - $78,850.00 |
| **Deductive Bid Alternate No. 2**<br>Deduct amount for 400,000 Gallon Pedesphere Elevated Water Storage Tank | + $94,000.00 | - $74,964.00 |
| **Deductive Bid Alternate No. 3**<br>Deduct amount for 300,000 Gallon Multi-Column Elevated Water Storage Tank | - $256,000.00 | - $328,021.00 |
| **Deductive Bid Alternate No. 4**<br>Deduct amount for 300,000 Gallon Pedesphere Elevated Water Storage Tank | - $130,000.00 | - $214,232.00 |

Caldwell Tanks, Inc. was the apparent low bidder for the project at the time of the bid opening. Caldwell Tanks has been in business since 1887 and has extensive water tank design, construction, repainting and rehabilitation experience in Kentucky and throughout North America.

We at GRW Engineers have worked with Caldwell Tanks on numerous successful tank projects in the past including new elevated water storage tanks for the City of Liberty, Kentucky, the City of Murray, Kentucky, the Rural Lorain County Water Authority in Ohio and the City of Hodgenville, Kentucky in the past five years. GRW has also worked with Caldwell on a number of water storage tank rehabilitation and painting projects in recent years. We have been pleased overall with Caldwell Tanks' performance.

GRW contacted some of the references provided by Caldwell Tanks, Inc. in their bid package. The following is a brief summary of these discussions.

**Project Reference**:

- Caldwell Tanks listed McDavid Associates as a project reference. Mr. Joseph McKemey of McDavid Associates indicated that they recently worked with Caldwell on a new 500,000 gallon multi-column elevated water storage tank and that there were no problems with the project. He added that McDavid Associates has worked on eleven (11) new tanks with Caldwall over the years and that Caldwell is pleasant to work with compared to some of the other tank manufacturers/contractors that Mr. McKemey has worked with. Mr. McKemey indicated that Caldwell's paperwork and administrative performance has been pretty smooth with no issues. He concluded that yes, he would use or recommend Caldwell Tanks without hesitation.

**Supplier References:**

- Caldwell Tanks listed International Steel Group / ArcelorMittal as their supplier reference. Mr. Jon Harlan with ArcelorMittal indicated that Caldwell has been a customer of theirs for over five years. He stated Caldwell's average days payable is 38 days and that they have a high credit limit of around $400,000.

**Surety Reference:**

- Caldwell Tanks listed the Great American Insurance Company / Neace Lukins as their Surety reference. Ms. Tammy Masterson of Neace Lukins indicated that they have been writing bonds for Caldwell Tanks since sometime in the early 1980s; at least for 30 years. Ms. Masterson stated that Caldwell Tanks is definitely currently within their bonding capacity. She concluded that Neace Lukins has never had any forfeitures or problems with any of Caldwell Tanks' bonds and that she wished all contractors were more like Caldwell.

**Financial Reference:**

- Caldwell Tanks listed PNC Bank as their financial reference. Caldwell indicated that they have a $10,000,000 line of credit commitment with PNC Bank. Mr. Gregory Carroll is PNC Bank's loan officer. Mr. Carroll indicated that Caldwell Tanks has maintained their accounts satisfactorily and has significant availability on their line of credit. He added that Caldwell has always paid as agreed.

Based upon GRW's past experience with Caldwell Tanks and upon the above research, it would appear that Caldwell Tanks has a capable record of performance on similar projects. Therefore, it is recommended that Caldwell Tanks be awarded this project.

Regards,

Adalyn Haney, P.E.
Project Engineer

cc: Dave Enzweiler, NKWD

Case No. 2015-00295
Exhibit C

# NORTHERN KENTUCKY WATER DISTRICT

## ***Project***
## ***Lumley Tank Replacement***

Campbell County
184-0487

## Board Resolution

**Northern Kentucky Water District**
**Board of Commissioners**
**Regular Meeting**
**August 20, 2015**

A regular meeting of the Board of Commissioners of the Northern Kentucky Water District was held on August 20, 2015 at the District's facility located at 2835 Crescent Springs Road, Erlanger, Kentucky. All Commissioners were present, except for Commissioner Spaulding. Commissioner Collins arrived at 12:40 p.m. Also present were Jack Bragg, Bob Smallwood, Dave Enzweiler, Amy Kramer, Steve Broering, Joan Verax, Chris Hoyle, Brennan Browning, Matt Piccirillo, Rusty Collinsworth, Bill Speier, Ken Kamper and Brian Dunham. Present during the employee recognition part of the meeting were John Scheben, Joe Webster, Willy Mueller, Rob Colvin, James Abbatiello, Mark Tischner, Ron Blevins, Paul Kloeker, Chuch Leach, Dan Peters, Kyle Schmidt, Matt Rowlette, Scott Pfefferman, Rodney Sparks and William Stewart.

Chairperson Sommerkamp called the meeting to order at 12:35 p.m., and Willie Mueller led the pledge of allegiance.

The Commissioners reviewed correspondence received and articles published since the last board meeting, which was a Regular Meeting on July 16, 2015.

On motion of Commissioner Collins, seconded by Commissioner Wagner, the Commissioners unanimously approved the minutes for the Regular Board of Commissioners meeting held on July 16, 2015.

The Board was provided a copy of the District's check registers, which included the check number, check date, payee, check amount and description of the reason for each payment, detailing the District's expenditures for the period July 1, 2015 through July 31, 2015. On motion of Commissioner Cunningham, seconded by Commissioner Macke, and after discussion, the Commissioners unanimously approved the expenditures of the District for the month of July, 2015.

On motion of Commissioner Macke, seconded by Commissioner Cunningham, the Commissioners unanimously approved the District's acceptance of the engineering services agreement with Wade Trim, Inc. for the Ohio River Pumping Station No. 2 Rehabilitation Project, and authorized staff to execute the appropriate documents.

On motion of Commissioner Collins, seconded by Commissioner Wagner, the Commissioners unanimously approved the District's acceptance of the bid by and awarding a contract to Caldwell Tanks, Inc., and accept Deductive Alternative 1 (for a 400,000 gallon multi-column tank) for the Lumley Tank Replacement Project with a project budget of $2,000,000, and authorized staff to execute the appropriate documents.

On motion of Commissioner Cunningham, seconded by Commissioner Wagner, the Commissioners unanimously approved the District's acceptance of the Resolution for CSX Facility Encroachment Agreement that authorizes the District's President/CEO to execute the agreement needed to install water mains crossing under CSX's train tracks near Madison Pike, and authorized staff to execute the appropriate documents.

On motion of Commissioner Wagner, seconded by Commissioner Collins, the Commissioners unanimously approved the District's acceptance of the bid and alternate bid by and awarding a contract to LC United Painting for the Rossford Tank Rehabilitation Project with a project budget of $450,000, and authorize staff to execute the appropriate documents.

On motion of Commissioner Wagner, seconded by Commissioner Cunningham, the Commissioners unanimously approved the District's acceptance of the base bid by and awarding a contract to Horizon Brothers Painting for the Dudley 1040 Tank Rehabilitation Project with a project budget of $750,000, and authorize staff to execute the appropriate documents.

On motion of Commissioner Collins, seconded by Commissioner Wagner, the Commissioners unanimously approved the District's acceptance of the bid by and awarding a contract to Atlas Manufacturing Co., Inc. for the Ohio River Pump Station No. 1 Traveling Water Screen #3 Replacement Project with a project budget of $300,000, and authorize staff to execute the appropriate documents.

On motion of Commissioner Wagner, seconded by Commissioner Macke, the Commissioners unanimously approved the District's acceptance of the bid by and awarding a contract to G.M. Pipeline Inc., for the Senour Road (KY 2047) 12-inch Water Main Replacement Project with a project budget of $1,000,000, and authorize staff to execute the appropriate documents.

The Commissioners reviewed the District's financial reports and Department reports. As part of her report, Ms. Kramer reviewed with the Commissioners the status of on-going projects within the 2014 5-Year Capital Budget and operating budget, including providing an update that there were no change orders since the last board meeting.

Other matters of a general nature were discussed.

On a motion of Commissioner Wagner, seconded by Commissioner Cunningham, the Board unanimously agreed to go into executive session under the provisions of KRS 61.810(1)(c) to discuss pending or proposed litigation against or on behalf of the District and to protect the District's legal interests and strategy in connection with such litigation. The executive session commenced at 2:15 p.m. and ended at 2:35 p.m.

On a motion by Commissioner Macke, seconded by Commissioner Collins, the meeting was adjourned at 2:35 p.m.

_____ _____

CHAIRMAN SECRETARY

Case No. 2015-00295
Exhibit D

# NORTHERN KENTUCKY WATER DISTRICT

## ***Project***
## ***Lumley Tank Replacement***

Campbell County
184-0487

# PROJECT FINANCE INFORMATION

Customers Added and Revenue Effect

Debt Issuance and Source of Debt

Additional Costs for Operating and Maintenance

USoA Plant Account

Depreciation Cost and Debt Service After Construction

KIA Financing Documents

Customers Added and Revenue Effect: There will be zero new customers added and no revenue effect as a result of the Lumley Tank Replacement project.

Debt Issuance and Source of Debt: This project will be paid from the District's Five-Year Capital Budget, PSC No. 226 "Replace Lumley Tank" with a budget of $2,000,000 which includes construction cost, engineering, and contingencies. A summary of the project costs is provided below:

| | |
|---|---|
| o Design Engineering | $ 87,000 |
| o Construction Engineering | $ 23,000 |
| o Contractor's Bid | $1,702,000 |
| o Misc. & Contingencies | $ 188,000 |
| Total Project Cost | $2,000,000 |

The project will be funded using $800,000 from SRF Loan F15-011 and $1,200,000 from a future Bond Anticipation Note.

USoA Accounts: The anticipated amounts for the project cost of $2,000,000 will fall under the following Uniform System of Accounts Code 330 "Distribution Reservoirs and Standpipes"

Additional Costs and O&M: Additional annual operating and maintenance costs incurred for the project are as follows:

| | |
|---|---|
| Power | $ 0 |
| Labor | $ 0 |
| Maintenance | $17,000 (1% of construction) |
| | $17,000 |

Depreciation and Debt Service: Annual depreciation and debt service after construction are as follows:

Depreciation: $44,444/year over 45 years for Code 330 Distribution Reservoirs and Standpipes

Debt Service: $47,752 over 20 years (SRF loan)
$76,814 over 25 years (conventional loan)

Campbell and Kenton County Water Main and Storage Tank Improvements
SRF 15-011

| Contract | Project | Construction SRF Loan | Construction Cost by NKWD | Subtotal Other NKWD Costs | Total Project Cost |
|---|---|---|---|---|---|
| 1 | Edgewood Water Main Replacement (5 streets) | $1,300,000 | $209,575 | $301,915 | $1,811,490 |
| 2 | Newport Water Main Replacement (5 streets) | $600,000 | $27,000 | $125,400 | $752,400 |
| 3 | Newport Water Main Replacement (2 streets) | $300,000 | $72,750 | $110,550 | $483,300 |
| 4 | Woodlawn Water Main Replacement (6 streets) | $500,000 | $74,700 | $114,940 | $689,640 |
| 5 | Burdsall Water Main Replacement | $500,000 | $57,500 | $112,500 | $670,000 |
| 6 | Lumley Tank Replacement | $800,000 | $902,000 | $298,000 | $2,000,000 |
| **Total** | **Total** | **$4,000,000** | **$1,291,525** | **$1,115,305** | **$6,406,830** |

Case No. 2015-00295
Exhibit D

# NORTHERN KENTUCKY WATER DISTRICT

## ***Project***
## ***Lumley Tank Replacement***

Campbell County
184-0487

# KIA FINANCING DOCUMENTS

SRF F15-11 Campbell and Kenton County Water Main and Storage Tank Improvements
Project Summary by Contract

SRF F15-11 Campbell and Kenton County Water Main and Storage Tank Improvements
Executed Conditional Commitment Letter

Northern Kentucky
Water District

December 15, 2014

Ms. Amanda Yeary
Kentucky Infrastructure Authority
1024 Capital Center Drive, Suite 340
Frankfort, KY 40601

Dear Ms. Yeary,

Please find enclosed the executed Conditional Commitment Letter for the Drinking Water State Revolving Fund F15-011.

If you have any questions or need additional documentation, please do not hesitate to contact me at (859) 426-2734.

Sincerely,

Amy Kramer

Amy Kramer, P.E.
Engineering & Distribution Manager

akk

KENTUCKY INFRASTRUCTURE AUTHORITY
1024 Capital Center Drive, Suite 340
Frankfort, Kentucky 40601
Phone (502) 573-0260
Fax (502) 573-0157
http://kia.ky.gov

**Steven L. Beshear**
Governor

**John E. Covington III**
Executive Director

November 6, 2014

Northern Kentucky Water District
Attn: Jack Bragg, V.P. of Finance
2835 Crescent Springs Road
Erlanger, KY 41018

KENTUCKY INFRASTRUCTURE AUTHORITY
FEDERALLY ASSISTED DRINKING WATER REVOLVING LOAN FUND
CONDITIONAL COMMITMENT LETTER (F15-011)

Dear Mr. Bragg:

The Kentucky Infrastructure Authority ("the Authority") commends your efforts to improve public service facilities in your community. On November 6, 2014, the Authority approved your loan for the Campbell and Kenton County Water Main and Storage Tank Improvements project subject to the conditions stated below. The total cost of the project shall not exceed $6,406,830 of which the Authority loan shall provide $4,000,000 of the funding. Other anticipated funding for the project is reflected in Attachment A. The final loan amount will be equal to the Authority's portion of estimated project cost applied to the actual project cost. Attachment A incorporated herein by reference fully describes the project.

An Assistance Agreement will be executed between the Authority and the Northern Kentucky Water District upon satisfactory performance of the conditions set forth in this letter. A period of twelve months from the date of this letter (November 6, 2015) will be allowed for you to meet the conditions set forth in this letter and enter into an Assistance Agreement. A one-time extension of up to six months may be granted for applicants that experience extenuating circumstances. Funds will be available for disbursement only after execution of the Assistance Agreement.

The Assistance Agreement and this commitment shall be subject, but not limited to, the following terms:

1. The Authority project loan shall not exceed $4,000,000.

2. Principal forgiveness does not apply for this loan.

3. The loan shall bear interest at the rate of 1.75 percent per annum commencing with the first draw of funds.

4. The loan shall be repaid over a period not to exceed 20 years from the date the loan is closed.

5. Interest shall be payable on the amount of actual funds received. The first payment shall be due on June 1 or December 1 immediately succeeding the date of the initial draw of funds, provided that if such June 1 or December 1 shall be less than three months since the date of the initial draw of funds, then the first interest payment date shall be the June 1 or December 1 which is at least six months from the date of the initial draw of funds. Interest payments will be due each six months thereafter until the loan is repaid.

6. Full principal payments will commence on the appropriate June 1 or December 1 within twelve months from initiation of operation. Full payments will be due each six months thereafter until the loan is repaid.

7. A loan servicing fee of 0.25% of the annual outstanding loan balance shall be payable to the Authority as a part of each interest payment.

8. Loan funds will be disbursed after execution of the Assistance Agreement as project costs are incurred.

9. The Authority loan funds must be expended within six months of the official date of initiation of operation.

10. Fund "F" loan funds may be considered to be federal funds. OMB Circular A-133, "Audits of States, Local Governments and Non-Profit Organizations, requires that all recipients and subrecipients **expending $500,000 or more in a year in federal awards must have a single or program-specific audit conducted for that year** in accordance with the Circular. If the federal amount expended plus all other federal funds expended exceeds the threshold, you are required to arrange for an A-133 audit to be performed by an independent, licensed CPA, or in special cases, the Auditor of Public Accounts of the Commonwealth of Kentucky. Please note that the guidance for single audit requirements will change for calendar or fiscal years beginning after December 26, 2014. Please

consult with your independent auditor as soon as possible to understand how the changes will affect you.

11. The Authority requires an annual financial audit to be performed for the life of the loan.

The following is a list of the standard conditions to be satisfied prior to execution of the Assistance Agreement or incorporated in the Assistance Agreement. Any required documentation must be submitted to the party designated.

1. The Authority to Award (bid) package must be submitted to the Division of Water for approval within 14 days of bid opening.

2. The Assistance Agreement must be executed within six (6) months from bid opening.

3. Documentation of final funding commitments from all parties other than the Authority as reflected in the credit analysis shall be provided prior to preparation of the Assistance Agreement and disbursement of the loan monies. Rejections of any anticipated project funding shall be immediately reported and may cause this loan to be subject to further consideration.

4. The loan must undergo review by the Capital Projects and Bond Oversight Committee of the Kentucky Legislature prior to the state's execution of the Assistance Agreement. The committee meets monthly on the third Tuesday. At this time we know of no further submission required for their review; however, they may request information as needed.

5. Any required adjustment in utility service rates shall be adopted by ordinance, municipal order or resolution by the appropriate governing body of the Borrower. Public hearings as required by law shall be held prior to the adoption of the service rate ordinance, order, or resolution. Any required approvals by the Kentucky Public Service Commission shall be obtained.

6. The Borrower must complete and return to the Authority the attached "Authorization for Electronic Deposit of Vendor Payment" Form.

7. An environmental review shall be conducted by the Division of Water for all construction projects receiving DWSRF funds, within the term of this binding commitment and prior to project bid.

8. Technical plans and specifications and a complete DWSRF specifications checklist shall be approved by the Division of Water prior to project bid.

9. All easements or purchases of land shall be completed prior to commencement of construction. Clear Site Certification of all land or easement acquisitions shall be provided to the Division of Water. DOW representatives shall be notified for attendance of the pre-construction conference.

10. Project changes or additions shall require a complete environmental and change order review before they can be included in the DWSRF loan project.

11. Applicant must provide certification from their legal counsel stating that they have prepared construction specifications in accordance with all applicable state or federal wage rate laws, and that the procurement procedures, including those for construction, land, equipment and professional services that are a part of the project, are in compliance with applicable federal, state and local procurement laws.

12. The Borrower shall comply with all Davis Bacon related monitoring and reporting and require all contractors to pay wages pursuant to applicable prevailing wage rates (federal or state) for all work relating to the subject Project.

13. The project shall comply with the reporting requirements of the Transparency Act, and shall complete the attached Transparency Act Reporting Information Form and provide to the Authority no later than 30 days after the KIA Board approval date of your loan.

14. If the project has a "Green Reserve" component, the Borrower must submit a Business Case, if required.

15. The project shall comply with American Iron and Steel requirements of The Consolidated Appropriations Act of 2014 (H.R. 3547), which became effective January 17, 2014, unless engineering plans and specifications were approved by the Division of Water prior to the effective date.

Any special conditions stated in Attachment A must be resolved.

Please inform the Authority of any changes in your financing plan as soon as possible. We wish you every success for this project which will benefit both your community and the Commonwealth as a whole.

Sincerely,

Amanda Yeary
Kentucky Infrastructure Authority

Attachments

cc: Richard Harrison, P.E., Northern Kentucky Water District
Division of Water
Dirk Bedarff, Peck, Shaffer & Williams LLP
State Local Debt Office, DLG
Borrower File - Northern Kentucky Water District - F15-011

Please sign and return a copy of this letter indicating your acceptance of this commitment and its terms. Also attach the completed "Authorization For Electronic Deposit of Vendor Payment" Form.

Accepted

12/6/14
Date

9/10/2015

Personal or sensitive information was discovered in this filing. The filer has been contacted and at the filer's request the document has been removed. A redacted version of this page is expected to be filed.

All filings with the Kentucky Public Service Commission which contain personal information must be redacted by the filer pursuant to 807 KAR 5:001 Sec. 4 (10).

## TRANSPARENCY ACT REPORTING INFORMATION FORM

## CLEAN WATER STATE REVOLVING FUND
## AND
## DRINKING WATER STATE REVOLVING FUND

This form is required for projects funded in whole or in part from the Clean Water State Revolving Fund or the Drinking Water State Revolving Fund. This form is to be completed and returned with the signed Conditional Commitment Letter from the Kentucky Infrastructure Authority.

Borrower Information:

| | |
|---|---|
| Name: | Northern Kentucky Water Dist. |
| Data Universal Numbering system (DUNS) No.*: | 963951983 |
| KIA Loan Number: | |
| Street Address | 2835 Crescent Springs Dr |
| City, State and Zip<br>(Zip must include 4 digit extension) | Erlanger, KY 41018 |
| Federal Congressional District(s) of Borrower Utility Service Area: | |

*If the DUNS No. provided above is registered under a different name than the recipient of funding, please provide the registration name below:

| | |
|---|---|
| DUNS Name | |

*If the recipient has not yet obtained a DUNS Number, please do so no later than 30 days after the KIA Board approval date of your loan request and provide notification to KIA of the number once issued. For instructions on DUNS registration, please contact jeff.abshire@ky.gov.

Physical Location of Project (Primary Place of Performance)

| | |
|---|---|
| Street Address | 2835 Crescent Springs Dr |
| City, State and Zip<br>(Zip must include 4 digit extension) | Erlanger, KY 41018 |
| Federal Congressional District(s) of Project Location | |

Reliance upon Federal Assistance (please answer the below questions Yes or No):

| | |
|---|---|
| Did recipient receive 80% or more of its annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at 2 CFR 170.320 (and subawards) during the last fiscal year? | No |
| Did recipient receive $25 million or more in annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at 2 CFR 170.320 (and subawards) during the last fiscal year? | No |
| Does the public have access to compensation of senior executives of the recipient through periodic reports filed under Section 13A or 15D of the Securities Exchange Act of 1934 or Section 6104 of the Internal Revenue Code of 1986? | NO |

DUNS Registration Information: http://fedgov.dnb.com/webform OR 1-866-705-5711

Registration can be completed over the phone or via the web. Phone registration requests take approximately 10 minutes and are free. Internet requests are fulfilled within 24 hours.

# ATTACHMENT A

## Northern Kentucky Water District
## F15-011

**EXECUTIVE SUMMARY**
**KENTUCKY INFRASTRUCTURE AUTHORITY**
**FUND F, FEDERALLY ASSISTED DRINKING WATER**
**REVOLVING LOAN FUND**

| | |
|---|---|
| Reviewer | Jeff Abshire |
| Date | November 6, 2014 |
| KIA Loan Number | F15-011 |
| WRIS Number | WX21037006 |

| | |
|---|---|
| BORROWER | NORTHERN KENTUCKY WATER DISTRICT<br>KENTON COUNTY |

BRIEF DESCRIPTION

This project involves five water main replacement projects on approximately twenty streets and the replacement of a 275,000 gallon elevated storage tank with a 500,000 gallon tank. The lines being replaced have a high incidence of breakage and the storage tank has reached the end of its useful life.

| PROJECT FINANCING | | PROJECT BUDGET | RD Fee % | Actual % | |
|---|---|---|---|---|---|
| Fund F Loan | $4,000,000 | Administrative Expenses | | | $10,000 |
| Local Funds | 2,406,830 | Legal Expenses | | | 6,000 |
| | | Land, Easements | | | 5,000 |
| | | Eng - Design / Const | 6.6% | 5.3% | 316,000 |
| | | Eng - Insp | 3.3% | 0.9% | 56,000 |
| | | Construction | | | 5,291,525 |
| | | Contingency | | | 722,305 |
| TOTAL | $6,406,830 | TOTAL | | | $6,406,830 |

| | | | | |
|---|---|---|---|---|
| REPAYMENT | Rate | 1.75% | Est. Annual Payment | $247,902 |
| | Term | 20 Years | 1st Payment | 6 Mo. after first draw |
| PROFESSIONAL SERVICES | Engineer | Viox & Viox, Inc. | | |
| | Bond Counsel | Peck, Shaffer, & Williams, a division of Dinsmore & Shohl, LLP | | |
| PROJECT SCHEDULE | Bid Opening | Mar-15 | | |
| | Construction Start | Apr-15 | | |
| | Construction Stop | Dec-15 | | |
| DEBT PER CUSTOMER | Existing | $3,009 | | |
| | Proposed | $3,041 | | |
| OTHER DEBT | | See Attached | | |
| OTHER STATE-FUNDED PROJECTS LAST 5 YRS | | See Attached | | |

| RESIDENTIAL RATES | | Users | Avg. Bill |
|---|---|---|---|
| | Current | 81,112 | $36.93 (for 4,000 gallons) |
| | Additional | 0 | $36.93 (for 4,000 gallons) |

REGIONAL COORDINATION This project is consistent with regional planning recommendations.

| CASHFLOW | Cash Flow Before Debt Service | Debt Service | Cash Flow After Debt Service | Coverage Ratio |
|---|---|---|---|---|
| Audited 2012 | 28,151,693 | 17,076,648 | 11,075,045 | 1.6 |
| Audited 2013 | 28,341,354 | 17,310,103 | 11,031,251 | 1.6 |
| Projected 2014 | 29,867,820 | 20,782,130 | 9,085,690 | 1.4 |
| Projected 2015 | 31,171,773 | 20,777,742 | 10,394,031 | 1.5 |
| Projected 2016 | 32,535,062 | 21,775,713 | 10,759,349 | 1.5 |
| Projected 2017 | 33,960,276 | 21,769,608 | 12,190,668 | 1.6 |
| Projected 2018 | 35,450,113 | 21,632,131 | 13,817,982 | 1.6 |
| Projected 2019 | 37,007,385 | 21,632,131 | 15,375,254 | 1.7 |

Reviewer: Jeff Abshire
Date: November 6, 2014
Loan Number: F15-011

**KENTUCKY INFRASTRUCTURE AUTHORITY**
**DRINKING WATER STATE REVOLVING FUND (FUND "F")**
**NORTHERN KENTUCKY WATER DISTRICT, KENTON COUNTY**
**PROJECT REVIEW**
**WX21037006**

## I. PROJECT DESCRIPTION

The Northern Kentucky Water District is requesting a $4,000,000 Drinking Water SRF loan for the Campbell and Kenton County Water Main and Storage Tank Improvements project. The project involves five water main replacement projects on approximately twenty streets and the replacement of a 275,000 gallon storage tank with a 500,000 gallon elevated tank. The water main replacements are in the Edgewood and Newport areas and will replace four inch to twelve inch unlined cast iron lines that have a high incidence of failure with eight and twelve inch PVC lines. This will increase hydraulic capacity; reduce lost water from leaks, breaks and flushing; and reduce the number of customer complaints about discolored water. The storage tank was built in 1936 and is at the end of its useful life. The water main replacements were broken down into multiple phases and contracts to mitigate the risk of delays in project completion. The project phases are listed below.

**Project Summaries**

Phase 1 – Edgewood Water Main Replacement (approximately 9,500 linear feet {LF}) on Dudley, Beach, Buckner, Wildrose and Elmwood in Kenton County (Engineer: Viox & Viox, Inc., Erlanger, KY).

Phase 2 – Newport Water Main Replacement (approximately 4,200 LF) on 15th, 16th, 17th, Parkview and Main in Campbell County (Engineer: Hrezo Engineering, Inc. Greendale, IN).

Phase 3 – Newport Main Replacement (approximately 2,700 LF) for Ridge Place and New Linden Road in Campbell County (Engineer: Brandstetter Carroll, Inc. Cincinnati, OH).

Phase 4 – Woodlawn Water Main Replacement (approximately 4,100 LF) on Burnet, Crescent, Forest, Woodlawn, Wilson and Loraine in Campbell County. (Engineer: Brandstetter Carroll, Inc. Cincinnati, OH).

Phase 5 – Bursdall Water Main Replacement (approximately 4,500 LF) in Fort Mitchell in Kenton County (Engineer: to be procured by end of November 2014).

Phase 6 – Lumley Tank Replacement (Engineer: to be procured by end of January 2015.)

The District provides service to Campbell and Kenton counties and portions of Boone, Grant and Pendleton counties and is regulated by the Public Service Commission. Wholesale service is provided to the City of Walton and the Bullock Pen and Pendleton County Water Districts.

## II. PROJECT BUDGET

| | | Total |
|---|---|---|
| Administrative Expenses | $ | 10,000 |
| Legal Expenses | | 6,000 |
| Land, Easements | | 5,000 |
| Engineering Fees - Design / Const | | 316,000 |
| Engineering Fees - Inspection | | 56,000 |
| Construction | | 5,291,525 |
| Contingency | | 722,305 |
| **Total** | **$** | **6,406,830** |

## III. PROJECT FUNDING

| | | Amount | % |
|---|---|---|---|
| Fund F Loan | $ | 4,000,000 | 62% |
| Local Funds | | 2,406,830 | 38% |
| **Total** | **$** | **6,406,830** | **100%** |

## IV. KIA DEBT SERVICE

| | | |
|---|---|---|
| Construction Loan | $ | 4,000,000 |
| Interest Rate | | 1.75% |
| Loan Term (Years) | | 20 |
| Estimated Annual Debt Service | $ | 237,902 |
| Administrative Fee (0.25%) | | 10,000 |
| **Total Estimated Annual Debt Service** | **$** | **247,902** |

## V. PROJECT SCHEDULE

| | |
|---|---|
| Bid Opening | March 2015 |
| Construction Start | April 2015 |
| Construction Stop | December 2015 |

## VI. CUSTOMER COMPOSITION AND RATE STRUCTURE

### A) Customers

| Customers | Current |
|---|---|
| Residential | 76,299 |
| Commercial | 4,702 |
| Industrial | 111 |
| Total | 81,112 |

### B) Rates

| | Prior | Prior | Current |
|---|---|---|---|
| Date of Last Rate Increase | 01/01/12 | 01/01/13 | 01/01/14 |
| Fixed Service Charge (Monthly Billing) | $13.00 | $13.60 | $14.20 |
| Fixed Service Charge (Quarterly Billing) | 26.00 | 27.20 | 28.40 |
| First 1,500 Cubic Feet (per hundred CF) | 4.02 | 4.14 | 4.25 |
| Next 163,500 Cubic Feet (per hundred CF) | 3.27 | 3.40 | 3.53 |
| Over 165,000 Cubic Feet (per hundred CF) | 2.58 | 2.65 | 2.72 |
| Cost for 4,000 gallons - Monthly Billing | $34.50 | $35.74 | $36.93 |
| Percent Increase | 6.5% | 3.6% | 3.3% |
| Affordability Index (Rate/MHI) | 0.7% | 0.8% | 0.8% |
| Cost for 4,000 gallons - Quarterly Billing | $30.16 | $31.20 | $32.19 |
| Percent Increase | 11.2% | 3.4% | 3.2% |
| Affordability Index (Rate/MHI) | 0.7% | 0.7% | 0.7% |
| Wholesale Rate | $3.13 | $3.20 | $3.26 |
| Percent Increase | 2.6% | 2.1% | 2.0% |

The district also has a Subdistrict Monthly Surcharge that ranges from $8.55 to $36.22 depending on location.

## VII. DEMOGRAPHICS

Census data was taken from the American Community Survey 5-Year Estimate 2008-2012. The District provides service to Campbell and Kenton counties and portions of Boone, Grant and Pendleton counties.

| County | Population | MHI |
|---|---|---|
| Kenton | 159,926 | $ 53,900 |
| Campbell | 90,119 | 53,580 |
| Boone | 119,406 | 67,125 |
| Grant | 24,683 | 46,011 |
| Pendleton | 14,771 | 48,761 |
| Total / Weighted MHI | 408,905 | $ 57,029 |

The median household income for the Commonwealth is $42,610. The District is a regional provider and the project will qualify for a 1.75% interest rate.

| Population | | | Weighted Average Unemployment | |
|---|---|---|---|---|
| Year | Counties | % Change | Date | Rate |
| 1980 | 290,514 | | June 2004 | 5.1% |
| 1990 | 311,259 | 7.1% | June 2009 | 10.% |
| 2000 | 362,845 | 16.6% | June 2013 | 7.0% |
| 2010 | 408,406 | 12.6% | June 2014 | 5.8% |
| Current | 408,905 | 0.8% | | |
| Cumulative % | | 41.7% | | |

## VIII. 2013 CAPITALIZATION GRANT EQUIVALENCIES

1) Green Project Reserve - The 2013 Drinking Water capitalization grant does not contain a "green" requirement.

2) Additional Subsidization – This project does not qualify for additional subsidization.

## IX. FINANCIAL ANALYSIS (See Exhibit 1)

Financial information was obtained from the audited financial statements for the years ended December 31, 2012 and 2013. Amounts for 2014 are estimated

HISTORY

Revenues increased 3% from $49.0 million in 2012 to $50.5 million in 2014 with rate increases being offset by some volume decline. Operating expenses averaged $23.8 million each year during the same period. The debt coverage ratio was consistent at 1.6, 1.6, and 1.4 for 2012, 2013 and 2014, respectively.

The balance sheet reflects a current ratio of 2.5 and a debt to equity ratio of 1.5. The number of months of operating expenses in unrestricted cash is 11.0. The District maintains various restricted accounts, primarily related to its bond covenants, and an Improvement, Repair and Replacement Reserve account. This account had a balance of $12.8 million, or 3% of in service fixed assets, at the end of 2013. Capital spending from 2012 through 2014 is projected at $44 million.

PROJECTIONS

Projections are based on the following assumptions:

1) Revenues will increase 4% for inflation (rates) and volume each year
2) Expenses will increase 3% for inflation and volume.
3) Debt service coverage is 1.5 in 2016 when principal and interest repayments begin.

Based on the proforma assumptions, the utility shows adequate cash flow to repay the KIA Fund F loan.

REPLACEMENT RESERVE

The District maintains an "Improvement, Repair and Replacement account to make major repairs and replacements and to pay the cost of construction of additions, extensions and improvements to the water system. During the past three audited years the balance has averaged $11.6 million. As a percentage of in service fixed assets the balance increased from .9% in 2008 to 3.0% in 2011, 2012 and 2013. Based on the District's current reserve funding practice a reserve will not be required for the proposed loan.

## X. DEBT OBLIGATIONS

| | Outstanding | Maturity |
|---|---|---|
| Series 2003C Revenue Bonds | 10,805,000 | 2020 |
| Series 2004 Revenue Bonds | 7,760,000 | 2029 |
| Series 2006 Revenue Bonds | 23,945,000 | 2031 |
| Series 2009 Revenue Bonds | 25,560,000 | 2033 |
| Series 2011 Revenue Bonds | 29,155,000 | 2035 |
| Series 2012 Revenue Bonds | 53,115,000 | 2039 |
| Series 2013A Revenue Bonds | 26,400,000 | 2038 |
| Series 2013B Revenue Bonds | 24,120,000 | 2028 |
| Rural Development Loan | 1,951,000 | 2039 |
| Taylor Mill Purchase Financing | 750,000 | 2018 |
| KIA Fund F Loan (F06-03) | 3,134,219 | 2028 |
| KIA Fund F Loan (F08-07) | 3,818,383 | 2032 |
| KIA Fund C Loan (C08-01) | 4,384,707 | 2020 |
| KIA Fund F Loan (F09-02, i/a/o $24M) | 23,509,066 | 2033 |
| KIA (F13-012, i/a/o $8.0M) | 0 | TBD |
| KIA (F14-015, i/a/o $4.0M) | 0 | TBD |
| Deferred Note Payable | 100,000 | TBD |
| **Total** | **$238,507,375** | |

## XI. OTHER STATE OR FEDERAL FUNDING IN PAST FIVE YEARS

| Project Title | Funding Source | Amount |
|---|---|---|
| Unserved and Underserved Projects | HB 608 | $500,000 |
| Pike Street – Bromley | HB 608 | 300,000 |
| Robbins Street Water Project | HB 608 | 300,000 |
| Campbell Co. Unserved/Underserved Improvements | HB 608 | 1,000,000 |
| Campbell Co. System Improvements | HB 608 | 1,200,000 |
| Campbell Co. Unserved/Underserved Improvements | HB 608 | 750,000 |

## XII. CONTACTS

| **Legal Applicant** | |
|---|---|
| Name | Northern Kentucky Water District |
| Address | 2835 Crescent Springs Road |
| | Erlanger, KY 41018 |
| County | Kenton |
| Authorized Official | Jack Bragg (V.P. of Finance) |
| Phone | (859) 426-2758 |
| Email | jbragg@nkwater.org |

| **Project Administrator** | |
|---|---|
| Name | Northern Kentucky Water District |
| Address | 2835 Crescent Springs Road |
| | Erlanger, KY 41018 |
| Contact | Richard Harrison, P.E. |
| Phone | (859) 578-5458 |
| Email | rharr@nkwater.org |

## XIII. RECOMMENDATIONS

KIA staff recommends approval of the loan with the standard conditions.

**NORTHERN KENTUCKY WATER DISTRICT**
**FINANCIAL SUMMARY (DECEMBER YEAR END)**

| | Audited 2012 | Projected 2013 | Projected 2014 | Projected 2015 | Projected 2016 | Projected 2017 | Projected 2018 | Projected 2019 |
|---|---|---|---|---|---|---|---|---|
| **Balance Sheet** | | | | | | | | |
| ***Assets*** | | | | | | | | |
| Current Assets | 31,279,684 | 34,274,761 | 35,225,208 | 36,338,339 | 37,568,988 | 38,749,756 | 39,827,438 | 40,732,792 |
| Other Assets | 388,006,505 | 386,906,383 | 392,044,810 | 393,917,184 | 392,065,558 | 391,213,932 | 391,612,306 | 393,260,680 |
| Total | 419,286,189 | 421,181,144 | 427,270,018 | 430,255,523 | 429,634,546 | 429,963,688 | 431,439,744 | 433,993,472 |
| ***Liabilities & Equity*** | | | | | | | | |
| Current Liabilities | 11,413,422 | 13,738,228 | 14,057,688 | 14,569,555 | 15,078,062 | 15,493,938 | 15,556,138 | 15,619,538 |
| Long Term Liabilities | 246,437,952 | 236,951,900 | 242,062,256 | 244,116,301 | 231,939,139 | 219,409,201 | 206,881,363 | 194,355,725 |
| Total Liabilities | 257,851,374 | 250,690,128 | 256,119,944 | 258,685,856 | 247,017,201 | 234,903,139 | 222,437,501 | 209,975,263 |
| Net Assets | 161,434,815 | 170,491,016 | 171,150,074 | 171,569,667 | 182,617,345 | 195,060,549 | 209,002,243 | 224,018,209 |
| **Cash Flow** | | | | | | | | |
| Revenues | 49,009,681 | 48,598,030 | 50,541,951 | 52,563,628 | 54,666,173 | 56,852,820 | 59,126,933 | 61,492,010 |
| Operating Expenses | 24,384,581 | 23,227,312 | 23,924,131 | 24,641,855 | 25,381,111 | 26,142,544 | 26,926,820 | 27,734,625 |
| Other Income | 3,526,593 | 2,970,636 | 3,250,000 | 3,250,000 | 3,250,000 | 3,250,000 | 3,250,000 | 3,250,000 |
| Cash Flow Before Debt Service | 28,151,693 | 28,341,354 | 29,867,820 | 31,171,773 | 32,535,062 | 33,960,276 | 35,450,113 | 37,007,385 |
| Debt Service | | | | | | | | |
| Existing Debt Service | 17,076,648 | 17,310,103 | 20,782,130 | 20,777,742 | 21,527,811 | 21,521,706 | 21,384,229 | 21,384,229 |
| Proposed KIA Loan | 0 | 0 | 0 | 0 | 247,902 | 247,902 | 247,902 | 247,902 |
| Total Debt Service | 17,076,648 | 17,310,103 | 20,782,130 | 20,777,742 | 21,775,713 | 21,769,608 | 21,632,131 | 21,632,131 |
| Cash Flow After Debt Service | 11,075,045 | 11,031,251 | 9,085,690 | 10,394,031 | 10,759,349 | 12,190,668 | 13,817,982 | 15,375,254 |
| **Ratios** | | | | | | | | |
| Current Ratio | 2.7 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.6 | 2.6 |
| Debt to Equity | 1.6 | 1.5 | 1.5 | 1.5 | 1.4 | 1.2 | 1.1 | 0.9 |
| Days Sales in Accounts Receivable | 80.8 | 81.8 | 81.8 | 81.8 | 81.8 | 81.8 | 81.8 | 81.8 |
| Months Operating Expenses in Unrestricted Cash | 9.3 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.1 |
| Debt Coverage Ratio | 1.6 | 1.6 | 1.4 | 1.5 | 1.5 | 1.6 | 1.6 | 1.7 |

Case No. 2015-00295
Exhibit E

# NORTHERN KENTUCKY WATER DISTRICT

## ***Project***
## ***Lumley Tank Replacement***

Campbell County
184-0487

# SCHEDULE OF MORTGAGES, BONDS, NOTES, AND OTHER INDEBTEDNESS

| Northern Kentucky Water District | | |
|---|---|---|
| Bonds & Notes | | |
| 7/31/2015 | | |
| | | |
| **Bonds** | | |
| | | |
| USDA 2000 | $1,873,000 | |
| Series 2006 | $22,105,000 | |
| Series 2009 | $24,030,000 | |
| Series 2011 | $27,380,000 | |
| Series 2012 | $49,440,000 | |
| Series 2013A | $25,155,000 | |
| Series 2013B | $20,200,000 | |
| Series 2014B | $13,805,000 | |
| | | |
| | **$183,988,000** | |
| | | |
| **KIA Currently Servicing** | | |
| | | |
| F06-03 | $2,869,088 | |
| C08-01 | $3,471,819 | |
| F08-07 | $3,542,538 | |
| F9-02 | $22,006,610 | |
| F13-012 | $2,607,064 | |
| | | |
| **Total KIA** | **$34,497,118** | |
| | | |
| **Notes** | | |
| | | |
| Taylor Mill | $400,000 | Non-Interest Note |
| Deferred Note | $100,000 | |
| | | |
| | | |
| | | |
| | | |
| | | |

Case No. 2015-00295
Exhibit F

# NORTHERN KENTUCKY WATER DISTRICT

## ***Project***
## ***Lumley Tank Replacement***

Campbell County
184-0487

# CURRENT BALANCE SHEET AND INCOME STATEMENT

Northern Kentucky Water District

## Balance Sheet
## As of July 31, 2015

| Assets | 2015 | 2014 |
|---|---|---|
| **Current Assets** | | |
| Cash and Cash Equivalents | $20,505,039 | $22,511,850 |
| Accrued Interest Receivable | $9,664 | $1,261 |
| Accounts Receivable Customers | $3,940,974 | $4,239,918 |
| Accounts Receivable Unbilled Customers | $5,900,000 | $5,700,000 |
| Accounts Receivable Other | $156,623 | $90,787 |
| Assessments Receivable | $117,464 | $110,953 |
| Inventory Supplies for New Installation and Maintenance, at Cost | $1,410,522 | $1,519,962 |
| Prepaid Expenses | $1,688,829 | $1,403,423 |
| **Total Current Assets** | **$33,729,115** | **$35,578,154** |
| **Restricted Assets** | | |
| Bond Proceeds Fund | $4,663,359 | $6,244,079 |
| Debt Service Reserve Account | $22,558,396 | $22,714,533 |
| Debt Service Account | $9,512,969 | $8,319,176 |
| Improvement, Repair, & Replacement | $2,078,926 | $7,942,023 |
| Boone/Florence Settlement Account | $0 | $308,124 |
| **Total Restricted Assets** | **$38,813,650** | **$45,527,935** |
| **Non Current Assets** | | |
| Miscellaneous Deferred Charges | ($5,198,927) | ($4,760,241) |
| **Capital Assets:** | | |
| Land, System, Buildings, and Equipment | $439,572,197 | $430,037,978 |
| Construction in Progress | $29,039,403 | $20,652,411 |
| Total Capital Assets before Accumulated Depreciation | $468,611,600 | $450,690,389 |
| Less: Accumulated Depreciation | ($127,993,297) | ($118,177,935) |
| Capital Assets Net of Accumulated Depreciation | $340,618,303 | $332,512,454 |
| **Total Noncurrent Assets** | **$335,419,376** | **$327,752,213** |
| **Total Assets** | **$407,962,141** | **$408,858,302** |

Northern Kentucky Water District

## Balance Sheet
## As of July 31, 2015

| Liabilities and Retained Earnings | 2015 | 2014 |
|---|---|---|
| **Current Liabilities** | | |
| Current Portion of Long Term Debt | $10,317,298 | $10,106,333 |
| Accounts Payable | $2,707,868 | $2,037,249 |
| Accrued Payroll & Liabilities | $457,967 | $463,121 |
| Other Accrued Liabilities | $124,879 | $125,263 |
| **Total Current Liabilities** | **$13,608,012** | **$12,731,966** |
| **Current Liabilities From Restricted Assets** | | |
| Accounts Payable | $989,395 | $876,676 |
| Accrued Interest Payable | $4,513,059 | $4,690,862 |
| **Total Current Liabilities From Restricted Assets** | **$5,502,454** | **$5,567,538** |
| **Long Term Debt** | | |
| Long Term Portion of Bonded Indebtedness | $208,342,820 | $217,892,344 |
| Bond Anticipation Notes Payable | $0 | $0 |
| Note Payable-Taylor Mill Purchase | $225,000 | $400,000 |
| Deferred Note Payable | $100,000 | $100,000 |
| **Total Long Term Debt** | **$208,667,820** | **$218,392,344** |
| **Total Liabilities** | **$227,778,286** | **$236,691,848** |
| **Total Liabilites and Retained Earnings** | **$407,962,141** | **$408,858,302** |

Northern Kentucky Water District

## Income and Expense Report Summary
## For the Seven Months ending July 31, 2015

| Current Period | July 2015 | July 2014 | July Budget | Variance Over (Under) % |
|---|---|---|---|---|
| Total Income | $4,020,015 | $4,083,383 | $4,198,628 | -4.3% |
| Total O&M Expenses | $2,235,642 | $2,203,157 | $2,266,023 | -1.3% |
| Transfer to Debt Service | $1,680,000 | $1,600,000 | $1,680,000 | 0.0% |
| Available for Transfer to Operating Capital | $104,373 | $280,226 | $252,605 | -58.7% |

| | 2015 | 2014 | Budget | Over (Under) % | Budget |
|---|---|---|---|---|---|
| Total Income | $28,484,394 | $28,685,807 | $29,452,914 | -3.3% | $52,271,763 |
| Total O&M Expenses | $14,868,325 | $14,890,039 | $15,608,058 | -4.7% | $27,161,761 |
| Transfer to Debt Service | $11,760,000 | $11,200,000 | $11,760,000 | 0.0% | $20,185,177 |
| Available for Transfer to Operating Capital | $1,856,069 | $2,595,768 | $2,084,856 | -11.0% | $4,924,825 |