STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

FILED

November 2, 2017

INDIANA UTILITY

REGULATORY COMMISSION

JOINT PETITION OF INDIANA-AMERICAN WATER COMPANY, INC. ("INDIANA AMERICAN") AND THE CITY OF CHARLESTOWN, INDIANA ("CHARLESTOWN") FOR APPROVAL AND AUTHORIZATION OF: (A) THE ACQUISITION BY INDIANA-AMERICAN OF CHARLESTOWN'S WATER UTILITY PROPERTIES (THE "CHARLESTOWN WATER SYSTEM") IN CLARK COUNTY, INDIANA IN ACCORDANCE WITH A PURCHASE AGREEMENT THEREFOR; (B) APPROVAL OF ACCOUNTING AND RATE BASE TREATMENT; (C) APPLICATION OF INDIANA AMERICAN'S AREA ONE RATES AND CHARGES TO WATER SERVICE RENDERED BY INDIANA AMERICAN IN THE AREA SERVED BY THE CHARLESTOWN WATER SYSTEM ("THE CHARLESTOWN AREA"); (D) APPLICATION OF INDIANA AMERICAN'S DEPRECIATION ACCRUAL RATES TO SUCH ACQUIRED PROPERTIES; (E) THE SUBJECTION OF THE ACQUIRED PROPERTIES TO THE LIEN OF INDIANA AMERICAN'S MORTGAGE INDENTURE AND THE POTENTIAL ENCUMBRANCE FROM RIGHT OF FIRST REFUSAL; AND (F) THE PLAN FOR REASONABLE AND PRUDENT IMPROVEMENTS TO PROVIDE ADEQUATE, EFFICIENT, SAFE AND REASONABLE SERVICE TO CUSTOMERS OF THE CHARLESTOWN WATER SYSTEM.	**CAUSE NO. 44976**
VERIFIED COMPLAINT AND REQUEST FOR COMMISSION INVESTIGATION BY NOW! INC. AND CUSTOMERS OF THE CITY OF CHARLESTOWN AGAINST INDIANA AMERICAN WATER COMPANY REGARDING ITS PROPOSED ACQUISITION OF THE CITY OF CHARLESTOWN'S WATER UTILITY	**CAUSE NO. 44964**

TESTIMONY OF

JAMES T. PARKS – PUBLIC'S EXHIBIT NO. 4

ON BEHALF OF THE

INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR

NOVEMBER 2, 2017

Respectfully submitted,

Daniel M. Le Vay, Atty. No. 22184-49
Deputy Consumer Counselor

Jesse James, Atty. No. 29971-53
Deputy Consumer Counselor

TESTIMONY OF OUCC WITNESS JAMES T. PARKS, P.E.
CAUSE NO. 44976
INDIANA AMERICAN WATER COMPANY, INC.
AND THE CITY OF CHARLESTOWN, INDIANA

I. INTRODUCTION

Q: Please state your name and business address.

A: My name is James T. Parks, P.E., and my business address is 115 W. Washington Street, Suite 1500 South, Indianapolis, IN 46204.

Q: By whom are you employed and in what capacity?

A: I am employed by the Indiana Office of Utility Consumer Counselor ("OUCC") as a Utility Analyst II in the Water/Wastewater Division. My qualifications and experience are described in Appendix A.

Q: What are the duties and responsibilities of your current position?

A: My duties include evaluating the condition, operation, maintenance, expansion, and replacement of water and wastewater facilities owned or operated by utilities subject to the Indiana Utility Regulatory Commission's ("Commission") jurisdiction.

Q: Have you previously testified before the Commission?

A: Yes.

Q: Please describe the review and analysis you conducted to prepare your testimony.

A: I reviewed Joint Petitioners' filings in this cause, developed discovery questions, and reviewed Joint Petitioners' responses to discovery. I attended a meeting on

October 3, 2017, with the Engineering appraisers, Banning Engineering, P.C. and Clark Dietz, Inc. at the Banning Engineering office to better understand how the appraisers determined the water assets age, materials, and condition. On October 12, 2017, I toured Charlestown's water facilities with Mike Perry, Charlestown's Director of Utilities, along with OUCC staff Edward Kaufman and Carl Seals, Stacey Hoffman of Indiana-American Water Company, Inc. ("Indiana American"), Bill Saegesser and Shane Spicer of Saegesser Engineering, and Bob Isgrigg of Isgrigg Engineering. The tour included the four wells along the Ohio River, the 1.5 million gallon ("MG") reservoir, also known as a ground storage tank (hereafter sometimes "GST"), the pump building including the high service pumps, chemical feed systems and laboratory, the 258,000 gallon standpipe ("Hospital Tank"), and the 500,000 gallon elevated water tank ("Gospel Road Tank"). At the pump building and water utility office, I reviewed limited design and construction record drawings. Following the tour with Mr. Perry, OUCC staff visited multiple neighborhoods, where we photographed fire hydrants and checked dates on the fire hydrants.

I also reviewed Charlestown's operating records, which were available on the Indiana Department of Environmental Management ("IDEM") website and on the Indiana Department of Natural Resources ("DNR") website. I reviewed 1950, 1963, 1981, and 1997 topographic maps of Charlestown. I searched news articles from *The Charlestown Courier* pertaining to Charlestown's water system. In addition, I reviewed the City of Charlestown's past proceedings before the IURC.

Q: What is the purpose of your testimony?

A: I discuss flaws in the appraisal process, which resulted in a Valuation Report that understates the age of the assets, does not take into account the condition of the assets, overstates "total replacement cost," and results in an overstated present value. In my testimony I will describe in some detail the investigation I conducted within the time allowed and the information I discovered that could have been used to derive more reliable replacement costs and more accurate present values.

II. ASSET VALUATIONS

A. Joint Petitioner City of Charlestown's Characteristics

Q: What are the City of Charlestown's physical characteristics?

A: The Joint Petitioner Charlestown is a municipal water utility located in southeastern Clark County near the Ohio River with 2,899 customers.[1] Its latest IURC Annual Report lists a source of supply consisting of four groundwater wells constructed in 1937, 1963, 1977, and 1977. Raw water is pumped by individual well pumps approximately 3-1/2 miles via a 16-inch ductile iron transmission main to a 1.5 million gallon raw water ground storage tank. There is no back-up power at the wellfield. The groundwater is pre-chlorinated before entering the 1.5 million gallon ground storage tank, which serves as a suction well for two high service pumps. The high service pumps, which are located in the Pump Building, send treated water into Charlestown's distribution mains.

Charlestown's water distribution system includes 16-inch 12-inch, 8-inch,

[1] 2016 IURC Annual Report

6-inch, 4-inch, 3-inch, 2-inch, 1-1/2-inch 1-1/4-inch, 1-inch, and 0.75-inch cast-iron, galvanized iron, asbestos cement ("AC") and PVC water mains. Charlestown also has a 258,000 gallon standpipe and a 500,000 gallon elevated tank in its system. According to the Valuation Report, the distribution system also includes 269 fire hydrants, 488 valves, 2,500 service lines, and 2,898 meters.

The Pump Building's pumping capacity is approximately 2 million gallons per day ("MGD") with average pumpage of 740,000 gallons per day from 2007 to 2016. Water sales to customers averaged 554,000 gallons per day during the same period. Annual water losses averaged 25% but may not be reliable due to master meter inaccuracy from lack of calibration. Raw water is not filtered at the treatment plant, but chlorine, fluoride, polyphosphate, and a chemical called Clearitas are added. According to a news article, Charlestown began adding Clearitas in 2012.[2] The City and the manufacturer reported that it dissolves iron and manganese deposits from water main walls to reduce discolored water complaints. As with the wells, there is no functioning auxiliary power supply for the Treatment and High Service Pump Building.

During the OUCC's October 12, 2017, site visit Charlestown's Director of Utilities reported that nearly all water system records are nonexistent.

[2] Water issues continue: Charlestown holds follow-up water meeting to discuss manganese concerns, *The Evening News and the Tribune* - McClatchy-Tribune Information Services via COMTEX, February 28, 2012 http://insurance-technology.tmcnet.com/news/2012/02/28/6150789.htm

B. Wells and Well Pumps and Controls

Q: Please describe Charlestown's wellfield.

A: Charlestown's four groundwater wells have a high to low capacity range of 584 to 352 gallons per minute ("gpm").[3] Well logs obtained from the DNR show the four wells to be 16-inch diameter with installation dates of 1937, 1963, 1977 and 1977. *See* Attachment JTP-1 for the well logs.

The wells are located in an excellent, highly productive, and sustainable aquifer in a fenced area within the Ohio River floodway. All pump heads, pump motors, electrical and control systems are located on elevated platforms above the 100-year flood elevation. *See* Attachment JTP-2 for site visit photos of the wellfield. The Valuation Report stated that the wells, well pumps, and controls are in fair to unknown condition. (Valuation Report, p. 9.)

Q: Are there differences in opinion as to how old the wells are?

A: Yes. On page 6 of the Valuation Report,[4] the appraisers state "Based on information contained in a 'Preliminary Engineering Report' dated June, 2016, prepared for the City by Saegesser Engineering, the wells are 70 years old and are considered to be in fair condition…." However, based on the DNR well logs described above, the well ages are 80 years, 54 years, and 40 years (2 wells).

Q: Are Charlestown's wells, well pumps and well controls being sold to Indiana American?

A: No. Although the wells, well pumps and well controls are listed in Table 2 of Joint Petitioner's Valuation Report, these assets are not included in the asset purchase

[3] IURC Annual Reports

[4] Joint Petitioner's Exhibit No. 1, Attachment GRH-2.

agreement and are not being sold to Indiana American. Therefore, the total "Present Value" of $46,000, listed on Table 2 of the Valuation Report, was removed from the purchase price.

C. 1.5 MG Ground Storage Tank

Q: How did the appraisers describe the ground storage tank?

A: Charlestown's appraisers noted in the Valuation Report that City staff had said the welded steel ground storage tank was constructed in 1975 and that City staff had no concerns or ongoing problems other than exterior paint condition.[5] The Valuation Report did not indicate the appraisers reviewed tank inspection reports or inspected the tank interior. Their review appears to have been limited to viewing the tank's exterior and discussing the tank with city staff on September 17, 2016.[6] The appraisers rated the GST's overall condition as fair. They estimated a $1,310,000 replacement cost and 34 years remaining of an assumed 75 year useful life. The appraisers listed the GST in Table 2 of the Valuation Report as 55% depreciated with a $589,500 present value.[7]

Q: Do you agree with $589,500 for the "present value" for the GST?

A: No. It is my engineering opinion that the $589,500 used by the appraisers is overstated and does not account for the tank's actual age or condition. First, the

[5] Attachment GRH2-007, Section 2.2 1.5 MG Storage Tank, *Valuation Report Water Supply, Treatment and Distribution Facilities, City of Charlestown, Indiana*, Clark Dietz, Inc. / Banning Engineering, Inc., November 2016, page 6.

[6] At the October 3, 2017 meeting with the OUCC, the appraisers stated they conducted a September 17, 2016 site visit of Charlestown's water facilities.

[7] *Id.*, Attachment GRH-011. The present value of the GST appears to have been calculated as $1,310,000 times (34 years/75 years rounded down to 0.45) equals $589,500.

ground storage tank is over 12 years older than the age assumed in the Valuation Report. It was constructed in 1963, not 1975 as assumed in the Valuation Report. Second, it appears that the appraisers did not take into account the tank's poor condition. My review revealed Charlestown failed to maintain the tank through regular cleaning, inspections, repairs, and repainting thereby reducing its useful life. Third, the $1,310,000 total replacement cost appears to be inflated by over 30%, which I discuss further below.

Q: What is the actual age of the ground storage tank?

A: As of 2016 when the appraisal was completed, the tank was 53 years-old not 41 years as stated in the Valuation Report. Based on my review of the scanned local newspaper available online through the Indiana State Library, Charlestown bid the GST project on July 15, 1963, as part of a Water Improvement Program.[8] [9] The low bid for the GST project came in at $69,500, well below the budgeted $80,000. The contractor began pouring the concrete foundation in October 1963[10] and completed the GST sometime before March 1964.[11] (*See* Attachment JTP-3 for 1963 and 1964 *Charlestown Courier* articles about the 1.5 MG GST construction.)

[8] "City to receive $140,000 in federal Funds for sewer and water projects", *The Charlestown Courier*, March 21, 1963. "Cost of the ground storage tank is estimated at $80,000."

[9] "Board Awards Contracts for Water Improvement Program", *The Charlestown Courier*, July 15, 1963. "Division 2 Ground storage tank to General American Transportation Corp., East Chicago, Indiana. This firm made two bids. The award was made for a 1.5 million gallon storage tank, 40 feet high with a diameter of 80.5 feet. Low bid of $69,500."

[10] "Public works Projects moving Along nicely", *The Charlestown Courier*, October 3, 1963.

[11] "B.P.W. shown plans of proposed $575,000 sewage treatment plant", *The Charlestown Courier*, March 26, 1964. Article on the proposed sewage treatment plant indicating its location on Charlestown Landing Road south of the new water storage plant.

Q: Are there other indications that the 1.5 MG GST is older than the date stated in the Valuation Report?

A: Yes. Two bronze plaques at the Pump Building doorway, document that Charlestown's Water System was dedicated in 1938 and gives 1963 as the date of the Water Improvement Program referenced above. (*See* Attachment JTP-4 for photos of the two dedication plaques.) Also, in 1977 the Commission found that the existing storage tanks were in a state of disrepair and noted "the City proposes to remedy the existing conditions by the … renovation of ground and elevated storage tanks."[12] This 1977 finding further supports that the tank was actually constructed in 1963 and not 1975. It is unlikely that a tank coating would have failed after only two years.

Q: What is the current condition of the ground storage tank?

A: The condition is poor. Based on my observations, the tank's steel exterior shows uniform pit corrosion indicating the protective tank coating has been neglected. At first look, I thought the tank had a textured coating but then realized that the underlying steel surface was pitted. Such pitting is caused by rust that results when repainting is not done in a timely manner. The lack of tank maintenance is confirmed by previous OUCC testimony. In Charlestown's 2006 rate case, the OUCC noted the ground storage tank's poor condition:

[12] Final Order, Cause No. 33005, September 20, 1977, p. 6.

Q: DOES PETITIONER HAVE CURRENT NEEDS NOT ADDRESSED IN THIS CAUSE?

A: Yes. In addition to the need for a new treatment plant, Petitioner's 1.5 MG raw water storage tank [*is*] *badly in need of repair or replacement*. The tank, which is located on plant grounds, is used as a suction well for the high lift pumps and, although not part of the distribution system, serves as unfinished water storage for the high lift pumps. *The protective coating system for the tank has for the most part entirely failed and corrosion of the sheet metal is imminent* (See RAP Exhibit I, page 3). During the site visit, water foreman Bruce Miller stated that up to one foot or more of iron and manganese sludge has collected in some areas of the tank. (The tank was inspected in August 2004 by Fluid Engineering Corporation.) At the time of the inspection, the tank could have been painted and repaired in accordance to AWWA and OSHA Standards for approximately $170,000. *Finally, the tank is an eyesore that should not be associated with drinking water* (See RAP Attachment 2).

Direct Testimony of Roger A. Pettijohn, Cause no. 42878, p. 7 (emphasis added)

Q: What did the tank inspectors document in the 2004 inspection?

A: The tank inspectors from Fluid Engineering Corporation gave the exterior wall quadrants the lowest rust grades of 0 and 1 indicating rust on 100% and 50% of the surfaces. They noted uniform surface corrosion and pitting on interior surfaces but did not note exterior pitting.[13] Because of the surface rust and the steel's poor condition, the 2004 tank inspection firm recommended full sandblasting of both the tank interior (to SSPC #10 near white blast) and exterior (to SSPC #6 commercial blast) followed by recoating.[14]

[13] On a Society for Protective Coatings rust grade scale of 0 (100% of the surface is rusted) to 10 (no rusting or less than 0.01% of the surface is rusted). *See* Attachment JTP-5 for a copy of the 2004 tank inspection.

[14] SSPC stands for Steel Structures Painting Council now known as the Society for Protective Coatings. SSPC #10 (near white blast) is a more involved sandblasting standard.

Q: Did Charlestown follow the recommendation of the tank inspector and the OUCC to recoat the ground storage tank in a timely manner?

A: No. Based on my review of IURC annual reports, despite the tank's failed coatings, Charlestown delayed tank repainting another seven (7) years until 2011. Charlestown's capital asset ledger booked the GST restoration project on February 1, 2011 at a cost of $233,233.[15]

Q: What was the effect of delaying tank recoating?

A: Based on my observations at the site visit, the delay likely caused progression of corrosion beyond surface rust to include pitting of exterior steel. The inspection conducted in 2004, after iron and manganese sediments had been partially removed, indicated interior steel rusting and pitting.[16] This would have also progressed causing deeper pits and steel loss.

Q: Is the tank currently painted?

A: Yes. The tank exterior has been repainted, but it is beginning to exhibit rust on the walls. I did not inspect the interior and cannot report on its condition. In 2016, the appraisers viewed the tank exterior. From 2013 and 2016 aerial photos, I identified underlying rust areas at the roof/wall interface. These areas appear to currently have a failed coating that should be promptly inspected and addressed. *See* Attachment JTP-7 for aerial photos and GST photos taken in 2005 and 2017.

Q: Does allowing rust to form on a tank's exterior protective coatings reduce a tank's useful life?

A: Yes, especially if the conditions causing the rust to form are not addressed over many years as in this case. Rusting adversely impacts the steel, thereby shortening

[15] Charlestown's response to OUCC Data Request 2.1. *See* Attachment JTP-6

[16] *See* page 36 of Attachment JTP-5.

the tank's useful life compared to the life of a properly maintained tank.

Q: Did the appraisers account for tank condition in the Valuation Report?

A: No. Charlestown responded that the appraisers reported "Percent depreciation was based solely on the age of the specific plant."[17] The appraisers also reported the following regarding whether they considered the specific condition of the plant:[18]

> Individual percentages take into consideration the estimated useful life of the various types of assets plant being evaluated. Had there been a reason to use a different percentage based upon the condition of the facilities toured[,] that could have been considered. The facilities toured such as the water plant, water towers, ground storage tanks, and wells gave no indication that the assets had any value other than what would be typical based upon the age of the asset. Additionally, since many of the assets were underground and the scope did not include excavation of underground facilities, no changes in percent were made for those assets.

Q: What expected useful life did the appraisers assume for Charlestown's ground storage tank?

A: The appraisers assumed a useful life of 75 years for wells, storage tanks, pump station structure, and distribution mains. [19]

Q: Do you agree that 75 years is the expected useful life of Charlestown's GST?

A: No. A 75-year useful life is appropriate for a tank that has been regularly cleaned and inspected, routinely recoated to maintain intact protective coatings thereby preventing rusting and steel loss, and properly maintained. However, Charlestown has not adequately maintained its 1963 GST or the 1978 258,000 gallon standpipe. Based on my review of the 2004 inspection report, historical photographs, and my

[17] Charlestown's response to OUCC DR 2.9. *See* Charlestown's responses to OUCC Data Requests regarding the work of the appraisers in Attachment JTP-8.
[18] Charlestown's response to OUCC DR 2.10.
[19] Attachment GRH2-10, Joint Petitioners' Exhibit 1, Direct Testimony of G. Robert Hall.

visual observation, these two tanks should be considered to have a useful life of no more than 60 years.

Q: Do you have other evidence to support setting the GST's useful life at 60 years?

A: Yes. The IURC calculated its 2% composite depreciation rate for water utilities based on depreciating water storage tanks over 60 years or 1.67% annually.[20] Similarly, the Public Service Commission ("PSC") of Wisconsin published a benchmark depreciation rate spreadsheet.[21] For distribution reservoirs and standpipes, Wisconsin uses service lives ranging between 50 to 65 years and recommended a 1.9% rate (52.6 years). Indiana American's current and proposed depreciation rates for distribution reservoirs and standpipes is 31.9 years (3.13%) and 49.8 years (2.01%) respectively.[22] (*See* Attachment JTP-9 for the IURC, PSC of Wisconsin, and Indiana American's depreciation rates for water storage tanks.) Distribution reservoirs and standpipe depreciation rates are summarized in Table 1.

Table 1 – Depreciation Rates for Distribution Reservoirs and Standpipes

Agency or Company	Depreciation Rate	Years
IURC – water storage tank component in 2% composite rate	1.67%	60
Public Service Commission of WI	1.9%	52.6
Indiana American – current rate	3.13%	31.9
Indiana American – proposed rate	2.01%	49.8

Q: How did the appraisers estimate the tank cost?

A: At the October 3, 2017, meeting with the OUCC, the appraisers explained that to

[20] Small Utility Accounting Manual, IURC Water/Wastewater Division, page 13.
[21] https://psc.wi.gov/Pages/ForUtilities/Water/Accounting.aspx
[22] Attachment GMV-1, Cause No. 44992, line number 60, page 2 of 3.

derive project costs they used their engineering knowledge and contacted contractors. The OUCC requested the appraisers provide the basis and documentation supporting the cost (e.g., vendor quotations, previous bid tabulations, etc.) used by the appraisers. In its response, Charlestown did not provide any written quotes or other supporting documentation but stated "The appraisers arrived at the $0.75 per gallon replacement cost for the 1.5 MG Ground Storage Tank based on a call with Pittsburg Tank & Tower."[23]

Q: Do you agree with the Valuation Report's $1.31 million estimated replacement cost for the ground storage tank?

A: No. The appraisers' 2016 estimated cost for a replacement GST is 31% higher than 2017 budgetary costs I obtained from two water storage tank fabricators.[24] The OUCC's budgetary quotes are conservatively high because they don't reflect lower prices that could be achieved through competitive bidding. (*See* Attachment JTP-10 for copies of the budgetary cost quotes for the GST, the 258,000 gallon Standpipe, and the 500,000 gallon elevated water tank.)

Q: How much higher is the appraisers' estimated GST cost?

A: The appraisers' cost is 31% higher than both of the vendor quotes I obtained as summarized in Table 2. The Covalen tank quote is for a bolted steel tank with an aluminum cover. The Pittsburg Tank & Tower quote is for a welded steel tank.

[23] Charlestown response to OUCC Data Request 10.6.

[24] The OUCC contacted storage tank fabricators Covalen Inc. representing Aquastore® Tanks and Pittsburg Tank & Tower. The OUCC also contacted Phoenix Fabricators for an elevated water tower quote.

Table 2 – 1.5 MG Ground Storage Tank Replacement Costs

Cost Component	Charlestown Valuation Report	OUCC Budgetary Costs	
		Covalen / Aquastore	Pittsburg Tank & Tower
Date of estimate or quote	11/9/2016	9/25/2017	10/17/2017
Tank: 1.5 MG GST	$1,125,000[25]	$828,000	$890,000
Average of budgetary quotes	NA	$859,000	
Appraisers' cost premium over 2017 budgetary quotes	31%	NA	
Site work, piping, & controls	$100,000	$100,000[26]	
Engineering & permitting	$85,000	$67,000[27]	
Total	$1,310,000	$1,026,000	

Q: What is your opinion regarding the 1.5 MG GST valuation?

A: Correcting tank age to actual and vendor cost to the average of budgetary quotes I obtained and reducing useful life to reflect the GST's poor condition from lack of maintenance, I estimate the GST's present value at $103,000 (rounded) instead of the $589,500 listed in the Valuation Report. I compare my present value calculations to the appraisers' calculations in Table 3.

[25] Based on $0.75 per gallon. 1,500,000 gallons times $0.75 per gallon equals $1,125,000.
[26] The OUCC's estimate used the appraiser's estimate for site work, piping, and controls in the absence of a detailed analysis.
[27] The OUCC applied the same 6.9% engineering and permitting allowance used by the appraisers.

Table 3 – Present Value Calculations for the 1.5 MG GST

Item	Valuation Report	OUCC Est.
GST original cost – 1963 low bid	Not reported	$69,500
Estimated total replacement cost	$1,310,000	$1,026,000
Year constructed	1975	1963
Tank age – Nov. 2016	41 years	54 years
Expected useful life	75 years	60 years
Percent depreciated	55%	90%
Total depreciated cost	$720,500	$923,000
Present value	$589,500	$103,000

D. System Storage – 0.25 MG Standpipe and 0.5 MG Elevated Tank

Q: Please describe Charlestown's finished water storage.

A: Finished water is stored in two distribution system water tanks, a 258,000 gallon standpipe ("Hospital tank" or "standpipe") and a 500,000 gallon elevated water tank on Gospel Road ("Gospel Road tank"). The standpipe, located on Charlestown's north side along Edgewood Drive west of Saint Catherine Regional Hospital, is a welded steel tank 20-feet in diameter and 110-feet tall.[28] Charlestown does not own the tank site but has an easement for the site. Caldwell Tanks, Inc. of Louisville, Kentucky, constructed the standpipe in 1978 as part of a $544,000 water improvement project that included: "addition of two new wells; renovation of the high service pumping station; addition of the chemical feed system and the

[28] Information gathered from the manufacturer's plaque affixed to the standpipe's base. Note that a standpipe is defined as a water tank with height greater than the tank diameter. A reservoir or ground storage tank has a diameter that is greater than the tank height.

telemetry system; the construction of a standpipe and transmission main; replacement of deteriorated plastic pipe; renovation of ground and elevated storage tanks; and purchase of a new electronic billing machine."[29] Charlestown's capital asset ledger lists a different date for tank completion of November 24, 1975, and indicates the tank's original cost at $51,000.[30]

Q: What is the standpipe's current condition?

A: The standpipe is in poor condition. The exterior coating is failing with rust areas over the lower half. The protective coating is flaking off the steel. Uniform rust appears to be progressing to deeper pit corrosion. Rusting is also present along welds between the plate steel sections. In addition, tank bottom steel is corroding at the chine (interface between the tank bottom plate and the tank shell), and it appears that moisture can penetrate between the steel tank bottom and the concrete floor where corrosion can occur unseen. (*See* Attachment JTP-11 for standpipe photos.) The appraisers included one standpipe photo in the Valuation Report but it does not show the lower tank shell tank corrosion or chine corrosion.[31]

According to its IURC Annual Reports, Charlestown does not know when it last painted the standpipe. To determine the needed rehabilitation, the standpipe should be emptied and cleaned and then professionally inspected.

Q: Please describe Charlestown's 500,000 gallon Gospel Road elevated tank.

A: Charlestown's newest water storage tank is a 500,000 gallon multi-column toro-ellipsoidal elevated water tower located at the intersection of State Road 403 and

[29] Finding No. 3, Final Order, Cause No. 35005, September 20, 1977, page 6.
[30] Charlestown's response to OUCC Data Request 2.1 in Attachment JTP-6.
[31] Photo 6, Valuation Report, p. 23

Gospel Road. The tank site previously held a 250,000 gallon ground storage reservoir constructed in the 1950s to serve the Louisville Cement Company plant four miles west of Charlestown in Speed, Indiana. The elevated tank is 50-feet in diameter and 146-feet, 3-inches tall to the high water level ("HWL"). The elevated tank was constructed in 2007 by Phoenix Fabricators and Erectors, Inc., of Indianapolis, Indiana, at a cost of $707,773.[32] Charlestown's capital assets ledger indicates the Gospel Road tank's purchase date was October 21, 2007, and the historical cost was $886,191.[33] (*See* Attachment JTP-12 for elevated tank photos.)

Q: Do you agree with the appraisers' estimated replacement cost for the 500,000 gallon elevated tank?

A: No. The appraisers' elevated tank cost estimate exceeds the estimate I made based on budgetary cost quotes from Phoenix Fabricators, manufacturers of Charlestown's existing 2007 tank, and Pittsburg Tank & Tower. I used these vendor quotations to determine the replacement cost summarized and compared to the appraiser's assumed costs in Table 6. The OUCC's replacement cost estimate is $257,000 lower than the appraisers' replacement cost estimate.

[32] Attachment DSC-4, Report on Use of Proceeds from 2008 Bond Issuance, Joint Petitioners' Exhibit 2, Direct Testimony of Donna S. Coomer

[33] Charlestown's response to OUCC Data Request 2.1 in Attachment JTP-6

Table 6 – 500,000 gallon Elevated Tank Replacement Costs

Cost Component	Charlestown Valuation Report	OUCC Budgetary Costs	
		Phoenix Fabricators	Pittsburg Tank & Tower
Date of estimate or quote	11/9/2016	10/4/2017	10/17/2017
500,000 gallon elevated tank	$1,250,000[34]	$985,000	$1,050,000
Average of budgetary quotes	NA	$1,017,500	
Appraisers' cost premium over 2017 budgetary quotes	23%	NA	
Site work, piping, & controls	$100,000	$100,000[35]	
Engineering & permitting	$135,000	$111,750[36]	
Total Replacement Cost	$1,485,000	$1,228,000	

Q: What is your observation regarding the valuation of the 500,000 gallon elevated tank?

A: Decreasing the vendor cost but keeping the appraisers' assumed 75 years useful life and 10% engineering fee, I estimated the elevated tank's present value at $1,081,000 which is $226,000 below the Valuation Report's value. I compare my calculations to the appraisers' calculations in Table 7. In this case, I accepted the 75-year useful life because the tank is less than ten years-old and appears to be in good condition. It does not appear to have the condition issues present with Charlestown's two older storage tanks. With proper maintenance to include regular cleaning, inspection, and recoating, this elevated tank should last 75 years.

[34] Based on the appraisers' assumed cost of $2.50 per gallon of capacity. 500,000 gallons times $2.50 per gallon equals $1,250,000.

[35] The OUCC's estimate used the appraiser's estimate for site work, piping, and controls in the absence of a detailed analysis.

[36] The OUCC applied the same 10% engineering and permitting allowance used by the appraisers.

Table 7 – Present Value Calculations for the 500,000 gallon Elevated Tank

Item	Valuation Report	OUCC Est.
2007 Elev. Tank original cost – payments to Phoenix Fabricators	Not reported	$707,773
Estimated total replacement cost	$1,485,000	$1,228,000
Year constructed	2007	2007
Tank age – Nov. 2016	9 years	9 years
Expected useful life	75 years	75 years
Percent depreciated	12%	12%
Total depreciated cost	$178,200	$147,000
Present value	$1,306,800	$1,081,000

E. Water Treatment and High Service Pumping Facility ("Pump Building")

Q: Please describe the Pump Building.

A: According to the property record card, the Pump Building is a one-story 720-square feet concrete block building with 13-feet tall walls, a concrete floor and a flat roof.[37] The building's quality grade is D+2, meaning it is devoid of any architectural detail and was constructed at the lowest possible cost but meets minimum codes with moderate quality interior finishes, fixtures, and climate control systems.[38] The building is cooled with window air conditioners and heated with propane. Also, the property includes a storage shed and an emergency generator, which was donated by the U.S. Government to Charlestown. The emergency generator has never functioned properly. It is my understanding that this generator is permanently

[37] Property Record Card 10-03-09-600-004.000-003, 2016, Clark County Assessor's Office. *See* Attachment JTP-24

[38] 2011 Real Property Assessment Guidelines, Attachment E Commercial and Industrial Grade, page 8 http://www.in.gov/dlgf/files/2011_Appendix_E_Final.pdf

out of service but has not been removed from the site.[39] (*See* Attachment JTP-13 for photos of the Pump Building.)

Q: Where is the Pump Building located?

A: The Pump Building is located on Charlestown Landing Road immediately adjacent to the Charlestown's sewage treatment plant.

Q: What is the assumed replacement cost for the Pump Building?

A: The Valuation Report indicates a replacement cost of $400,000 without any further breakdown of component costs. In response to discovery, Charlestown provided the following discussion on how the appraisers determined the replacement cost:

> The appraisers jointly agreed upon a $400,000 figure based on the following estimates: $250,000 for the structure; $100,000 for electrical and instrumentation; and $50,000 for mechanical. The appraisers utilized their experience in the industry to determine the replacement cost for the Water Treatment Plant Main Building. The appraisers did not calculate costs for site development, grading, plans, utility extensions, pumps, chemical feed, controls and telemetry.[40]

The appraisers did not provide support for the various component costs or discuss whether their independent valuations of the Pump Building asset were in conflict with each other. The OUCC requested copies of the independent appraisals to review what values each appraiser independently determined and how possible valuation conflicts such as the Pump Building were resolved but the independent appraisals were not provided to the OUCC.

[39] Per Mike Perry, Superintendent of Utilities, as discussed at the OUCC site visit on October 12, 2017.
[40] Charlestown's response to OUCC DR 10.5.

Q: How are independent appraisals useful?

A: Appraisers will differ on asset values and rarely agree especially in situations where the asset inventory, age and condition are unknown due to lack of records (such as the present case for Charlestown). Using more than one appraiser, asset valuations can be reviewed against each other to determine data gaps requiring more information gathering or research that will lead to accurate, fair and reasonable asset values.

Q: Do you agree with the appraisers' estimated $400,000 replacement cost for the Pump Building?

A: No. One of the first things I noticed about the Valuation Report was that the Pump Building replacement cost appeared to be very high. I thought the high cost must include the pumps, but the pumps, motors, and controls are a separately estimated line item in Table 2 at $90,000, and are not part of the building cost. Likewise, the replacement cost of the Chemical Feed Systems at $60,000 and the SCADA system at $50,000 are estimated separately. It appeared to me that the Valuation Report overestimated the cost per square foot to construct a replacement concrete block building.

Q: What replacement cost new did the Clark County Assessor find with respect to the pump building?

A: The replacement cost new ("RCN") shown on the Assessor's property record card is $55,876. But a replacement cost of $400,000 is embedded in the Valuation Report. The property record card also shows the building is 80% depreciated with a remaining value of $11,180. The Assessor's RCN calculation begins with a building base value of $68,983. This value is adjusted downward twice: 1) to $62,086 to account for the D+2 building grade, and 2) to $55,876 to account for

location. It did not appear the Valuation Report includes this downward adjustment.

Q: What would you have determined to be the replacement cost for the Pump Building?

A: I estimated the cost at $120,000 (rounded). This replacement cost includes the unadjusted $68,983 building base value (2016) determined by the Assessor's office, plus an additional $50,000 for electrical and mechanical building systems not included by the Assessor for items such as laboratory plumbing, lab bench, and pump motor control center ($68,983 + $50,000 = $118,983 rounded up to $120,000).

Based on a cost per square foot, the Valuation Report overstates the replacement value of the building. The Assessor's $68,983 base building value equates to a unit cost of $97.71 per square foot. Based on my experience, $100 per square foot is a typical unit cost for a simple concrete block one-story building. However, the Valuation Report assumed $250,000 building cost equates to nearly $350 per square foot, which is 3.5 times greater than the Assessor's base building cost. (Applying the Valuation Report's estimated remaining life of 29% to my estimated $120,000 replacement cost would result in a present value of $35,000.)

F. Water Services

Q: The last line of Table 1 from Joint Petitioners' Appraisal estimates a "Total Cost to Replace" of $3,750,000 and a "Present Value" of $1,875,000 for water services. Are there any flaws in the process leading to these values?

A: Yes. The appraisers indicated that water service data was not available requiring them to make a simplifying assumption. The Valuation Report states "Age and sizing information was not available for the water services and thus were assumed

to have 50 percent of their service life remaining." (Attachment GRH-2 at GRH2-013.) The Valuation Report provided no support for its assumption that it is reasonable to assume the water services have a 50 percent remaining life.

Q: Do you agree that aging of services could not be done?

A: No. My analysis demonstrates that with some effort, services age can be estimated by examining customer additions to make a more reasonable present value estimate. When the flaws that arise due to the Appraisal's simplifying (and inaccurate) assumption are corrected, the "Present Value" of Charlestown's "Water Services" is reduced by $955,000. (*See* Attachment JTP-14 for the OUCC's calculation of customer and water services additions by year, average age of water services, average water services year installed, percent depreciated based on age, and the present value of the water services.)

Q: What information did you find available to determine the facilities' age?

A: I obtained Charlestown's United States Census Bureau population data, and newspaper articles referencing the addition of water system customers to Charlestown's system. These sources show that Charlestown enjoyed a growth period beginning just prior to World War II when the Indiana Army Ammunition Plant was under construction and later during wartime production. This boom fostered economic and population growth, particularly in the 1940s. It was during this time period (and also during the late 1930s) that a larger portion of Charlestown's water system was installed, including water services. By 1950 when Charlestown's population reached 4,785, I estimate that the water system had 1,600 customers. This boom-time construction means Charlestown's water services are

older than the appraisers' assumption that services are at 50% of their 75 year useful life.

Q: What did your analysis of the water services provide?

A: My analysis showed that Charlestown's water services have an average age of 52 years instead of 37.5 years assumed in the Valuation Report. The average installation date was 1964, not 1977. My analysis also shows that many of Charlestown's water services were installed in the 1940s and 1950s, and nearly two-thirds of Charlestown's connections were made by 1969.

Q: Please explain how the information available affects the results of the Valuation Report.

A: The available information shows that the Valuation Report understates the age of Charlestown's "Water Services" and overstates the "Unit Cost to Replace" by $150 to $200. [41] The appraisers also assume a 75-year useful life, which is also overstated because of the materials that would probably have been used, as discussed below.

Q: Please explain how the Valuation Report would tend to overstate the service life of the water services.

A: Water services typically have lower useful lives than water mains. Benchmark ranges of depreciation rates used in other jurisdictions indicate that services have a 45- to 60-year useful life. (*See* Attachment JTP-9 for example depreciation rates.) Indiana American has a current depreciation rate for water services of 4.09% (24.4 years) and has proposed depreciation rates for services of 3.59% (27.8 years). The

[41] As discussed by OUCC Witness Edward Kaufman, the Appraisal effectively assumes the "Water Services" were installed in 1977.5, are 50% depreciated (life of 75 years) and the calculation has an end date of 2015.

appraisers used the same 75-year useful life for both water mains and services.

Q: What types of pipe materials are used for Charlestown's water services?

A: Charlestown lacks information about its water services. Charlestown does not have water service record cards that utilities typically maintain to record locations, install dates, and materials of the water service line and meter. However, the Valuation Report assumes that all water services are 1-inch diameter copper tubing.

Q: Is this assumption reasonable?

A: No. It is unlikely that all water service lines are made of copper. Given the age of Charlestown's system, it is probable that the water services include lead and galvanized iron service lines. Lead service lines were commonly used in the 1930s and 1940s when cast iron water mains were predominately installed. Following World War II, galvanized iron service lines became more common for not only service lines but also for small diameter water mains. It is also unlikely that all water service lines would have 1-inch diameters. Actual service line diameter for a single residential customer is typically ¾ inch.

Q: Please explain how "Unit Price to Replace" for water services is overstated.

A: The appraisers assumed a $1,500 unit price to replace. I used typical service line costs from connection fee filings but excluded the meter cost since the appraisers had accounted for the meters separately. OUCC Witness Carl Seals discusses the errors made by the Valuation Report in its determination of meter ages. Excluding the meter costs, I estimated installed costs of $1,300 for a single service and $1,350 for a dual service. These costs are slightly below the appraisers' cost.

Q: What present value would you place on the water services?

A: The Valuation Report concluded that the water services have a present value of $1,875,000. Based on my review and my assumptions, I estimate the present value of the water services to be $920,000, a difference of $955,000. Attachment JTP-14 is an Excel spreadsheet showing my assumptions, calculations, and present value amount.

G. Water Distribution Mains and Hydrants

1. System Map

Q: Does Charlestown have a water system map?

A: Yes. In 2013, Charlestown hired Saegesser Engineering ("Saegesser") to create a water distribution map and hydraulic model using geographic information system ("GIS") technology. This map shows streets, storage tanks, valves, hydrants, and water main sizes and locations. Saegesser provided this map to Banning Engineers ("Banning") for the 2016 appraisal as a .kml computer file with sixteen (16) Excel spreadsheets listing valves and hydrants and their locations.[42] No other water system information appears on the Saegesser map. Banning then created an interactive ArcView GIS type version of the Saegesser map (the "2016 map") and added water main attributes. Saegesser and the appraisers reported that they did not have access to any prior Charlestown water system map.

[42] Charlestown's responses to OUCC Data Requests 3.1 and 5.1.

Q: What information does the Banning map contain?

A: The interactive Banning map shows streets, the location and size of the water mains, connectivity of the water mains with other water mains, valves, and hydrants on the base map.

Q: What water main attributes appear in the information boxes?

A: The appraisers identify pipe diameter, material (either cast iron, asbestos cement, galvanized iron, PVC, or ductile iron), specific year installed (except for 1940s mains), and length for all water main segments (218 entries). No information was provided that indicates which attributes are actually known and which attributes had to be estimated, assumed, or guessed.

Q: How did Banning determine installation year for the water mains?

A: It is unclear how the appraisers determined water main ages. It does not appear Saegesser Engineering established pipe ages or provided pipe age information to the appraisers. Emails among appraisers noted they had little information to set ages. At our October meeting, Jeff Henson of Banning indicated that on September 17, 2016, the appraisers met with Charlestown utility staff, who orally provided the ages of Charlestown's water main ages based on their experience and recollection.

Jeff Henson also indicated that due to discrepancies between the Saegesser map and discussions with Charlestown staff, the appraisers had a Clark Dietz staff person spend one day checking fire hydrant date stamps.[43] The appraisers reported: "When possible, dates on the hydrants were used to establish the date of water mains installed in nearby areas, using the oldest hydrant date in a given are when

[43] Per discussion at the OUCC / Appraisers meeting at the offices of Banning Engineering on Oct. 3, 2017.

no other information was readily available."[44]

Q; Do you agree with the water main ages used in the Valuation Report?

A: No. It appears the appraisers made simplifying assumptions for the water main ages. The effect is that the Valuation Report indicates water main installation occurring evenly throughout the decades, as summarized below in Table 8.

Table 8 – Summary of the Valuation Report's Assumed Length of Water Main by Assumed Installation Decade[45]

Decade	Length of Water Main Installed (feet)	Length of Water Main Installed (miles)
1930s	0	0
1940s	41,378	7.8
1950s	0	0
1960s	65,844	12.5
1970s	51,896	9.8
1980s	32,192	6.1
1990s	45,720	8.7
2000s	54,400	10.3

2. <u>Hydrants</u>

Q: Can fire hydrant ages be used to determine water main ages?

A: When no other information exists, and when there is knowledge about the utility's hydrant replacement program, hydrant ages can be helpful. This method is based on the premise that hydrants and water mains are generally installed together. However, in older water distribution systems, where hydrants have been replaced but not the water mains, this method can create erroneous results. Relying on

[44] Valuation Report, Section 2.5 Distribution System, page 7
[45] Table 1, Valuation Report, November 2016,

hydrant age in this situation can understate water main ages and overstate present values. Water mains will actually be older than assumed. This appears to be the case for Charlestown.

Q: Has Charlestown replaced many fire hydrants?

A: Yes. It appears Charlestown has replaced more than half of its fire hydrants. Mike Perry, Director of Utilities, stated that Charlestown does not maintain hydrant record cards for tracking fire hydrants, so it is not possible to review hydrant information or determine the exact number of hydrants replaced and the years replaced. In a mailer to water customers in 2009, Mayor Hall acknowledged Charlestown's discolored water problem and hydrant replacements:

> In 2000, more than 50% of the fire hydrants did not work, and had not worked for many years. This prevented any effective flushing of the system. These were replaced or repaired. Others have been added through the years, and more are still needed in order to have the necessary capabilities to effectively flush the lines.[46]

Charlestown also reported it replaces approximately thirty (30) fire hydrants each year at a typical cost of $4,000 per hydrant.[47] Charlestown's plan for water system improvements, prepared by Saegesser Engineering included hydrant replacements estimated at $2,500 per hydrant.[48] The appraisers assumed hydrant replacement would cost $5,500, which overstates the cost and causes the appraised present value to be higher.

[46] Charlestown Water System, Now and in the Future, Where are we today? 2009 page 10. *See* Attachment JTP-15.

[47] Charlestown's response to OUCC Data Request 5.10

[48] Charlestown's response to OUCC Data Request 6.6

Q: What examination did the OUCC perform regarding the fire hydrants?

A: We conducted a sampling of hydrants to determine the date stamps. Following the site visit, OUCC staff viewed fifty hydrants in older City neighborhoods including the downtown and areas north, Pleasant Ridge, North Charlestown, Lake View and Hill View subdivisions, Gospel Road tank area, and areas along Main Street and High Street.

The OUCC found hydrants with dates ranging between 1945 and 2013 but could not read dates on ten of the fifty hydrants (20%) because either they were not date stamped (Waterous type hydrants, Vogt Bros. hydrants) or the date was too painted-over to be read. (*See* Attachment JTP-16 for photographs taken of the hydrants by the OUCC.)

Q: To what extent did the method used to value hydrants for the Valuation Report overstate the present value?

A: Correcting for the flaws identified above, I suggest the hydrant valuation should be $510,000, which is $218,000 less than the $728,200 present value used to establish the purchase price. Attachment JTP-17 is an Excel spreadsheet showing my assumptions, calculations, and present value amounts as well as the hydrants' age, replacement cost, and percent depreciation.[49]

[49] I accepted the appraisers' 50-year service life and assumed the hydrant ages shown on the 2016 map are correct even though the OUCC found older hydrants not reported by the appraisers and hydrants with ages that differed from the reported ages. For hydrants still in service beyond their 50-year service life, I assumed they were 95% depreciated.

3. Mains

Q: What did you first notice about the water main information in the appraisal?

A: Pipe from the 1930s and 1950s is missing from the appraisers' water main listing in Table 1 (page GRH2-014 of Attachment 2). No pipe is reported to have been installed in these decades, which is inaccurate. Charlestown constructed its original system in the 1930s and the 1950s was a period of system growth with documented main extensions.

Q: How do you know Charlestown's water system began in the 1930s?

A: On its IURC Annual Reports, Charlestown reports 1937 as the year its utility was started. There is also the 1938 dedication plaque on the Pump Building discussed earlier in my testimony. Based on my review of news articles, Charlestown began planning its' water system in 1933 and obtained $28,000 in initial funding from the Public Works Administration ("PWA").[50] Construction took two years and the system began serving 100 to 160 customers on December 15, 1937.[51] The original water system cost was $70,000, of which $60,000 was for construction.[52] Finally, on its' Capital Asset Ledger, Charlestown reports adding over 126,000 feet of water main between 1935 and 1938.[53]

Q: Can you provide an example of water mains that were added in the 1950s?

A: Yes. The Louisville Cement Company of Speed, Indiana, paid for the installation of a four-mile (21,473 feet) long extension of 8-inch diameter asbestos cement

[50] Public Works Administration part of the New Deal of 1933 was a large-scale public works construction agency in the United States

[51] *See* Attachment JTP-18 for newspaper reports between 1941 and 1957 about Charlestown's water system.

[52] *Id*.

[53] *See* Attachment JTP-6

water main along State Road 403 between Charlestown and Speed. This main was actually installed in 1953 according to newspaper accounts. (*See* Attachment JTP-19 for topographic maps and articles about the 1953 Charlestown-Speed water main and the main extension in the 1960s to serve the Lake View and High View Subdivisions.) Even greater age errors appear to have occurred for these two subdivisions (2003 assumed year versus the 1962 news account, or 41 years).

The appraisers correctly show the Speed extension on the 2016 map as an 8-inch AC pipe but have incorrectly dated it as being constructed fourteen years later in 1967. This date error creates a 25-year remaining life instead of the correct eleven years, and translates into a $240,500 reduction in the present value for this 8-inch water main.[54]

Q: Do you have another example of a water main with an incorrect age?

A: Yes. Another example of mid-1950s construction is the North Charlestown main extension to serve 130 homeowners in the area just south of the current hospital. In the water main information shown on the 2016 map, the Valuation Report assumes these mains were constructed in 1978 instead of the mid-1950s, thereby creating a 23-year difference in the remaining life (37 years instead of the correct 14 years). Attachment JTP-20 shows topographic maps and a 1955 news article about the main extension. All lines west of State Road 3 are listed as 1978 vintage galvanized iron pipe.

[54] Calculated as 21,473 feet at $60 per foot times (25 years remaining life/75 years useful life) minus (11 years remaining life/75 years useful life) equals $240,500 (rounded). Numerically, the calculation is 21,473 times $60 times (0.3333-0.1467) = $240,455.

Along Edgewood Drive, the appraisers show three separate mains (2-inch, 4-inch and 8-inch), all of which are purported to have the same installation year – 1978. It is improbable construction of three separate lines would occur in the same year along the same street. It is more reasonable to conclude that the smaller mains were installed first in the 1950s (galvanized iron pipe was used extensively after World War II) and later upsized in the 1970s when the hospital and Charlestown's 258,000 gallon standpipe were constructed. A fire hydrant near the hospital is stamped 1970. I previously discussed the Standpipe constructed in 1978 that would be served by these mains. This additional information supports my conclusion that the mains were constructed in different years. Correcting for the incorrect age will decrease the distribution system present value further but I have not quantified the reduction.

In the same area, east of State Road 3, all water mains are shown on the appraisers' 2016 map as being installed in 2003. This area includes the Glendale Subdivision, which was platted in the late 1970s according to the Charlestown water system map made in the late 1970s by Environmental Consultants, Inc. Attachment JTP-20 also shows the Glendale addition (colored purple) in the 1981 topographic map. For housing constructed to the density shown, utility services (water and sewer) would be mandatory and would be installed prior to home construction. Based on my review, I believe the Valuation Report underestimates the age of water mains.

Q: Do you have other concerns with the distribution system present values?

A: Yes. The Valuation Report assume all pipe has a 75-year useful life regardless of the pipe material. Charlestown appears to have nearly 45,000 feet of galvanized

iron pipe that has a shorter expected life of around 60-years due to corrosion. These pipes are also associated with Charlestown's long standing discolored water problem.

Q: Is there another problem with the galvanized iron pipes?

A; Yes. The galvanized iron pipe along with cast iron pipe are in smaller pipe diameters below the Ten States Standards minimum size of 6-inches for fire protection and 3-inch for water mains where fire protection is not provided. As such, they are functionally obsolete and should be prioritized for replacement. Charlestown has over 40,000 feet of undersized water mains that are 3-inch diameter and smaller. The appraisers do not list the actual pipe sizes shown on the 2016 map including 0.75-inch, 1-inch, 1.25 inches, 1.5 inches, and 3-inches. As such the appraisal is not an accurate list of the assets that will be sold to Indiana American. I have summarized Charlestown's length of water main by diameter, material, and year installed based on the 2016 distribution map prepared by Banning and include the install years without correction because of the numerous errors. (*See* Attachment JTP-21.)

Q: Do you have concerns with the water main replacement costs estimated by the appraisers?

A: No. The appraisers estimated replacement costs at between $40 and $105 per foot installed. This cost excludes site restoration costs which the appraisers separately estimated at between $20 and $35 per foot depending on where restoration occurs such as grass areas or pavements. The replacement costs appear to be reasonable and typical for replacements of municipal water mains.

4. Summary

Q: Could more accurate dates have been established?

A; Yes. A good starting point would have been to review existing water system maps to better assign years when the water mains were constructed. I was able to obtain two water system maps for Charlestown's system that the appraisers did not have. The first map was prepared by the engineering firm of Jacobi, Toombs, & Lanz Inc. in 2007. I obtained this map online from IDEM's virtual file cabinet. (*See* Attachment JTP-22.) The second map was prepared in the late 1970s by Environmental Consultants, Inc. (*See* Attachment JTP-23.) I also recommend contacting the City's other engineering consultants in a search for project documents, system maps, and information on asset ages.

Q: Please summarize your concerns regarding the appraised value of fire hydrants and mains.

A: Both the present value and age of fire hydrants is inaccurate or at best unreliable. Inaccurate fire hydrant ages is particularly problematic concern for this appraisal because their age is used to estimate the age of Charlestown's distribution mains. The Valuation Report does not show any mains being installed in the 1930s or the 1950s. Yet documentation indicates large portions of the distribution systems were installed in those decades.

Q: Please summarize your concerns.

A: The methodology used to value the assets includes flaws that affect the value across most categories of plant. Of particular concern is that the Valuation Report does not incorporate into its conclusions the poor condition of certain assets making up the Charlestown Water System. The values presented in the Valuation Report in

Tables 1 and 2 are the results of flawed assumptions including unsupported cost estimates that cast doubt on the both the Replacement cost and the "Present Values" on which the utility purchase is based.

Q: Does this conclude your testimony?

A: Yes.

APPENDIX A

Q: Please describe your educational background and experience.

A: In 1980, I graduated from Purdue University, where I received a Bachelor of Science degree in Civil Engineering, having specialized in Environmental Engineering. I then worked with the Peace Corps for two years in Honduras as a municipal engineer and as a Project Engineer on self-help rural water supply and sanitation projects funded by the U.S. Agency for International Development (U.S. AID). In 1984 I earned a Master of Science degree in Civil Engineering and Environmental Engineering from Purdue University. I have been a Registered Professional Engineer in the State of Indiana since 1986. I accepted an engineering position with Purdue University in 1984, and was assigned to work as a process engineer with the Indianapolis Department of Public Works ("DPW") at the City's Advanced Wastewater Treatment Plants. I left Purdue and subsequently worked for engineering consulting firms, first as a Project Engineer for Process Engineering Group of Indianapolis and then as a Project Manager for the consulting firm HNTB in Indianapolis. In 1999, I returned to the Indianapolis DPW as a project engineer working on planning projects, permitting, compliance monitoring, wastewater treatment plant upgrades, and combined sewer overflow control projects.

Q: Have you previously testified before the Indiana Utility Regulatory Commission?

A: Yes.

APPENDIX B - LIST OF ATTACHMENTS

1	Attachment JTP-1	Well Logs
2	Attachment JTP-2	Wellfield photographs
3 4	Attachment JTP-3	1963 and 1964 *Charlestown Courier* articles about the 1.5 MG GST construction and Pump Building.
5	Attachment JTP-4	Photos of the two dedication plaques at the Pump Building
6 7	Attachment JTP-5	2004 GST Photos and 2004 GST Inspection Report by Liquid Engineering Corporation
8 9	Attachment JTP-6	Capital Asset Ledger – Charlestown's response to OUCC Data Request 2.1
10	Attachment JTP-7	1.5 MG GST aerial photos and photographs taken in 2005 and 2017
11 12 13	Attachment JTP-8	Charlestown responses to OUCC Data Requests regarding the appraisers' work including OUCC DR 2.7 through 2.12 and OUCC DR 7.15
14	Attachment JTP-9	Example Depreciation Rates for Reservoirs and Standpipes
15 16	Attachment JTP-10	Budgetary Cost Estimates for the 1.5 MG GST, 258,000 gallon Standpipe, and 500,000 gallon Elevated Water Tank
17	Attachment JTP-11	258,000 gallon Standpipe photographs
18	Attachment JTP-12	500,000 gallon Elevated Water Tank photographs
19	Attachment JTP-13	Water Treatment and High Service Pumping Facility photographs
20	Attachment JTP-14	Water Services – OUCC Present Value Calculations
21	Attachment JTP-15	2009 Mailer to Water Customers
22	Attachment JTP-16	Hydrant photographs – OUCC site visit, October 12, 2017
23	Attachment JTP-17	OUCC hydrant age and present value calculations
24 25	Attachment JTP-18	*Charlestown Courier* newspaper articles from 1941 to 1957 about the Charlestown Water System

Attachment JTP-19	1953 news articles about the Charlestown – Speed water main project and Lake View and High View subdivisions water mains
Attachment JTP-20	North Charleston and Glendale subdivision water mains
Attachment JTP-21	Water Main Inventory based on the 2016 Map
Attachment JTP-22	2007 Charlestown Water System Drawings by Jacobi, Toombs & Lanz, Inc.
Attachment JTP-23	1978 Charlestown Water System Drawing by Environmental Consultants, Inc. (large size – 24" by 36" drawing)
Attachment JTP-24	Pump Building Property Record Card from the Clark County Assessor's Office

Copy

251075 N
619525 E

DIVISION OF WATER
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA
STATE OFFICE BUILDING
INDIANAPOLIS, INDIANA 46204
Telephone 633-5267 Area Code 317

WWRS

WATER WELL RECORD

WELL LOCATION

(Fill in completely - Refer to instruction sheet)

County in which well was drilled Clark County Civil Township Silver Creek "?"

Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctiv landmarks, etc.

Charlestown Quadrangle - Along Ohio River. Enter Gate 9 on Military Reservation. Straight back Water Line Rd. to Collector Wells Rd. North on Collector Wells Rd. to Charlestown Well Field. ± 200' up river from existing al well

NAME OF WELL OWNER and/or BUILDING CONTRACTOR

Well Owner City of Charlestown, Ind Address

Building Contractor ICI Address

Name of Well Drilling Contractor: Reynolds Supply, Inc.

Address 901 E. Market St. Louisville, Ky. 40206

Name of Drilling Equipment Operator: Ralph Burton

WELL INFORMATION

Depth of well: 60' Date well was completed: 12/77

Diameter of casing or drive pipe: 16" Total Length: ± 40'

Diameter of liner (if used): Total Length:

Diameter of Screen: 12" Nominal Length: 20' Slot Size: .050 #50

Type of Well: Drilled ☐ Gravel Pack ☑ Driven ☐ Other

Use of Well: For Home ☐ For Industry ☐ For Public Supply ☑ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☑ Rev. Rotary ☐ Jet ☐ Bucket Rig ☐

Static water level in completed well (Distance from ground to water level) 24' @ 12-29-77 feet

Bailer Test: Hours Tested ____ Rate ____ g.p.m. Drawdown ____ ft.

Pumping Test: Hours Tested 8 Rate 1325 g.p.m. Drawdown 17' ft.

(Drawdown is the difference between static level and water level at end of test)

Signature Ronald C. Alexander

Date 12/30/77

FOR WELL LOG SPACE USE REVERSE

RAP ATTACHMENT 1
Page 2 of 9

WATER WELL LOG

FOR ADMINISTRATIVE USE ONLY (Well driller does not fill out) 195815

77-#277-2

COUNTY CLARK TWP. 1S RGE. 8E ¼ ¼ SEC 41 CMG

Topo Map CHARLESTOWN 7½

Field Located By: Date 8/24/81

Courthouse Location By Date

Location accepted w/o verification by

Loc. from Charlestown W.L. - not on base

? Ft W of EL. Ft N of SL. Ft E of WL. Ft S of NL.

Ground Elevation 445 Depth to bedrock 12-6-77 Bedrock elevation Aquifer elevation 372 -

Subdivision Name REYNOLDS Lot Number

FC
MC

From	To	FORMATIONS (Color, type of material, hardness, etc.)
0'	1'	Topsoil
1'	3'	Dark brown clay
3'	8'	Light brown clay
8'	13'	" "
13'	18'	Med. brown sandy clay
18'	23'	" " "
23'	28'	Bluish gray clay (soft shale?)
28'	33'	Sand w/ high content gravel
33'	38'	Med. to coarse sand w/ some gravel
38'	43'	" " w/ larger gravel
43'	48'	" " " "
48'	53'	Fine to med. sand w/ some gravel
53'	58'	" " " "
58'	63'	Med. to coarse sand & gravel
63'	68'	" " " "
68'	73'	" " " "
73'		Bottom of test hole
		Test hole went to 73' but bottom of ⊘ screen is only 60' from grade.

44
20
37 2

#28

DIVISION OF WATER
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA
STATE OFFICE BUILDING
INDIANAPOLIS, INDIANA 46209
MElrose 3-6757

250875N
619380E

WATER WELL RECORD

INFORMATION ON WELL LOCATION

County in which well was drilled: Clark Civil Township: _____

Congressional township: 1S Range: 8E Number of section: _____

(Fill in as completely as possible)

Describe in your own words the well location with respect to nearby towns, roads, streets or distinctive landmarks: #4 Well (Indiana Ordnance Property, South of Charlestown, Near Ohio River)
Across from 12-Mile Island near collector well on Iowa road

Name of owner: City of Charlestown Address: City Hall, Charlestown, Indiana

Name of Well Drilling Contractor: Diehl Pump & Supply Company

Address: P.O. Box 21266 Louisville, Kentucky 40221

Name of Drilling Equipment Operator: A. Wenning

INFORMATION ON THE WELL

Completed depth of well: 70 78? ft. Date well was completed: 9-23-63

Diameter of outside casing or drive pipe: 16" Length: 50'

Diameter of inside casing or liner: -- Length: _____

Diameter of Screen: 16" Length: 20' Slot size: #100

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other _____

Use of Well: For home ☐ For industry ☐ For public supply ☒x Stock ☐

Method of Drilling: Cable Tools ☒ Rotary ☐ Rev. Rotary ☐ Jet ☐ Driven ☐

Static water level in completed well (Distance from ground to water level) 15' ft.

Bailer Test: Hours tested _____ Rate _____ g.p.m. Drawdown _____ ft. (Difference between static level and water level at end of test)

Pumping Test: Hours tested _____ Rate 200 g.p.m. Drawdown 5 ft.

Signature _____

Date January 10, 1966

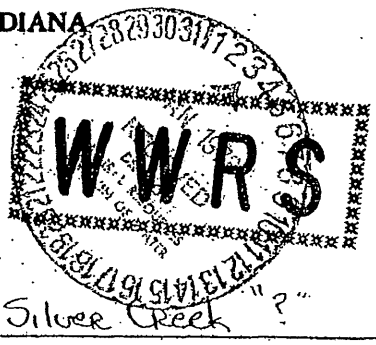
FOR WELL LOG SPACE USE REVERSE SIDE OF THIS SHEET

copy

RAP ATTACHMENT 1
Page 4 of 9

250 950N
619500E

DIVISION OF WATER
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA
STATE OFFICE BUILDING
INDIANAPOLIS, INDIANA 46204
Telephone 633-5267 Area Code 317



WATER WELL RECORD

WELL LOCATION

(Fill in completely - Refer to instruction sheet)

County in which well was drilled Clark Civil Township Silver Creek "?"

Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinct landmarks, etc.

Charlestown Quadrangle - Along Ohio River - Enter Gate 9 on Military Reservation. Back Water Line Road to Collector Wells Rd., North on Collector Wells Rd. to Charlestown Well Field - 30' west from existing old well

NAME OF WELL OWNER and/or BUILDING CONTRACTOR

Well Owner City of Charlestown, Ind. Address

Building Contractor ICI Address

Name of Well Drilling Contractor: Reynolds Supply, Inc.

Address 901 E. Market St. Louisville, Ky. 40206

Name of Drilling Equipment Operator: Ralph Burton

WELL INFORMATION

Depth of well: 74' Date well was completed: 12/6/77

Diameter of casing or drive pipe: 16" Total Length: ± 55'

Diameter of liner (if used): Total Length:

Diameter of Screen: 12" Nominal Length: 20' Slot Size: .050 #50

Type of Well: Drilled ☐ Gravel Pack ☑ Driven ☐ Other

Use of Well: For Home ☐ For Industry ☐ For Public Supply ☑ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☐ Rev. Rotary ☑ Jet ☐ Bucket Rig ☐

Static water level in completed well (Distance from ground to water level) 20' feet

Bailer Test: Hours Tested Rate g.p.m. Drawdown ft.

Pumping Test: Hours Tested 8 Rate 1372 g.p.m. Drawdown 12 ft.

(Drawdown is the difference between static level and water level at end of test)

Signature Ronald C. Alexander

Date 12/30/77

FOR WELL LOG SPACE USE REVERSE SIDE OF THIS SHEET

FOR ADMINISTRATIVE USE ONLY 195810
(Well driller does not fill out)

77-#1 77-1

COUNTY: CLARK TWP. 15 RGE. 8E ¼ ¼ SEC. CM9 41 Subdivision Name

Topo Map CHARLESTOWN 7½

Field Located By [signature] Date 8 | 24 | 81

Courthouse Location By ______ Date ______

Location accepted w/o verification by ______

______ Ft W of EL. Ground Elevation 445 REYNOLDS

? ______ Ft N of SL. Depth to bedrock ______ 12-6-77

______ Ft E of WL. Bedrock elevation ______

______ Ft S of NL. Aquifer elevation 368 — Lot Number ______

FC
MC

for ... Charlestown W.W. - not on base.

WATER WELL LOG

To	From	FORMATIONS (Color, type of material, hardness, etc.)
23'	0'	Topsoil & clay
28'	23'	Light blue to gray clay
43'	28'	" " "
48'	43'	Medium to coarse grain sand
53'	48'	Med. to coarse grain sand w/ some gravel
63'	53'	Same as above
68'	63'	Fine to coarse grain sand & gravel
73'	68'	" " "
77'	73'	Medium to coarse grain sand & gravel
	77'	Bottom of test hole

See Me

445
77
368 —

RAP ATTACHMENT 1
Page 6 of 9

WATER WELL LOG

FORMATIONS (Color, type of material, hardness, etc.)	From	To
Clay	0	28*
Clay and gravel	28	32
Medium sand	32	78
(*) From grade)		

REMARKS:

COUNTY: [illegible] TWP. 1S RGE. 8E ¼ ¼ ¼ SEC. 41

Topo Map: [illegible]

Well log classified By [illegible] Date 1-16-96
Courthouse located By [illegible] Date [illegible]
Field located By [illegible] Date 2-6-96
Acc. w/o verification By [illegible] Date [illegible]

[illegible] driller does not fill out) 195820

[illegible] Ft W of EL. Ground elevation
[illegible] Ft N of SL. Depth to bedrock
[illegible] Ft E of WL. Bedrock elevation
[illegible] Ft S of NL. Aquifer elevation 3655

1200 SE & NW
6600 NE & SW

CMG
41
495'

INSTRUCTIONS

This Water Well Record form is designed to record the most essential data concerning a water well. We request that you be as accurate as possible in recording this information as it may be of great assistance in the planning and development of new water supplies.

An accurate location of the well is equally as important as an accurate well log. Please include all information possible in the space provided for well location.

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water

WELL # 4
DIEHL
9-23-23

WELL RECORD — INDIANA MASTER FILE

DEPARTMENT OF CONSERVATION, DIVISION OF WATER RESOURCES

1. Location: Charlestown, on Ohio R. Flood plain 2 mi. from town
2. Owner: City of Charlestown Address
   Driller: Layne Northern Address
3. Casing: Drive pipe: Depth: ft. Diameter Bl. pipe ins.
   Casing: Depth: 64 ft. Diameter 10 ins.
   Finish: Layne Everdur shutter screen #6 g. #1 opening 10'
4. Depth of Well: 74½
5. Elevation of ground surface at well:
6. Depth to Bedrock ft. El. of Bedrock ft. MSL
7. Use: Dom., Stock, Ind., Air Cond., Oil, etc.
8. Type: Dug, Drilled, etc. Date Drilled: Sp. '37
9. Water Level: 25 ft. below L. S. D. Date: March '37
10. Pumping Test: Layne Deep Well turbine Cap. 150 Elec. 25 HP 125 Gm DDI 24Hrs.
11. Source of Data: SBHenex Qual. good
    Collected by Name OJC Address Date: 10/23/52
    Agency: INDIANA DEPARTMENT OF CONSERVATION
12. Remarks: Town has #2 tubular wells & 2 gr. pack wells.

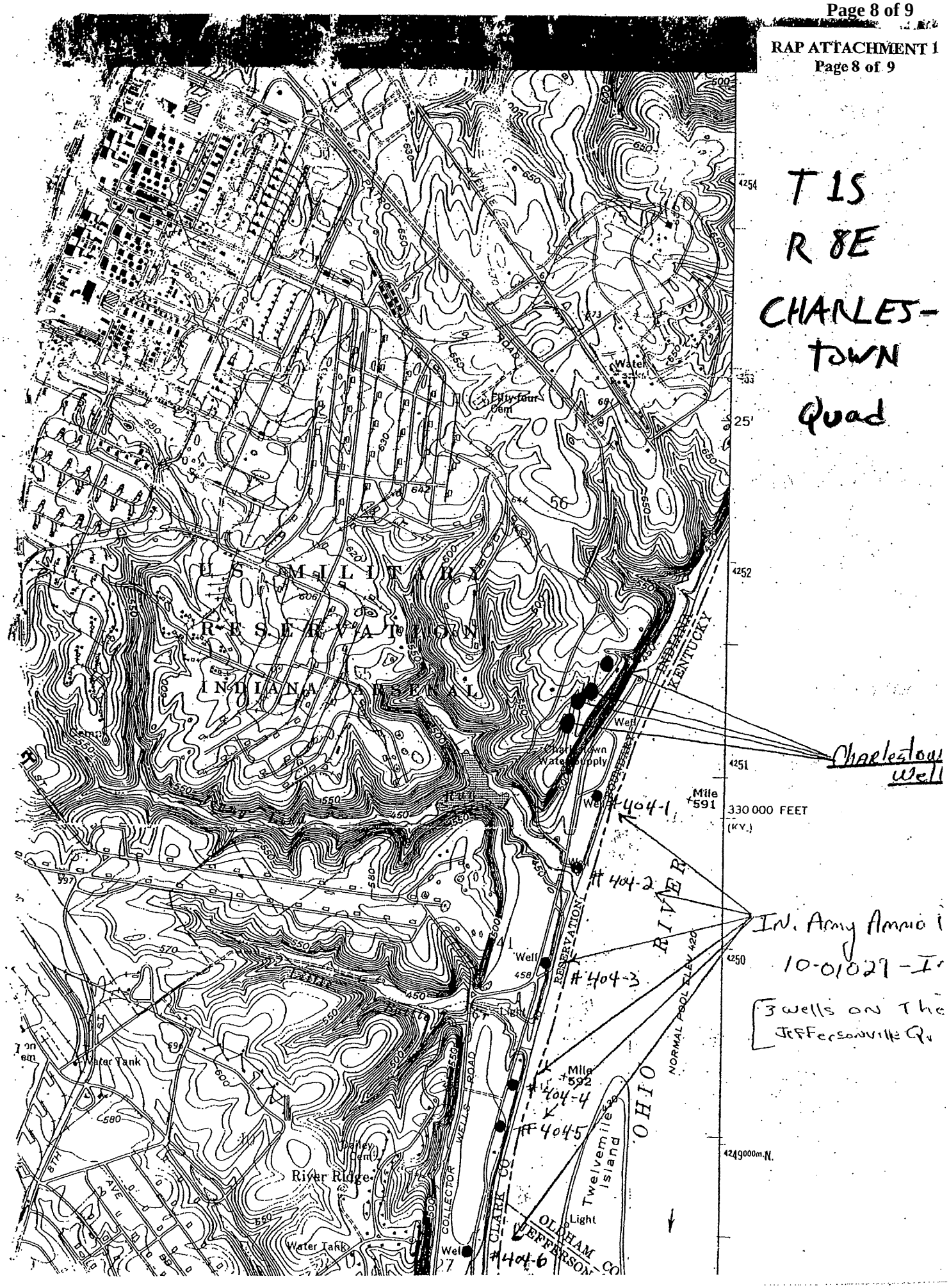
12. Remarks (Cont.) BELIEVE THIS IN GRANT (41)
Topo: Ohio River Flood Plain
13. Type of Bedrock:
14. Geologic Formation:
15. Geologic Age:

WELL LOG

	Depth From	Depth To
Log of 10" city well		
Yellow clay	0	29
Muddy gravel	29	31
Coarse gravel	31	55
medium gravel	55	70
gravel & sand	70	74
Limestone B.R.	74	74½
Well analysis on reverse side		
*—Chief Aquifer Coarse to med. gr.	31	74

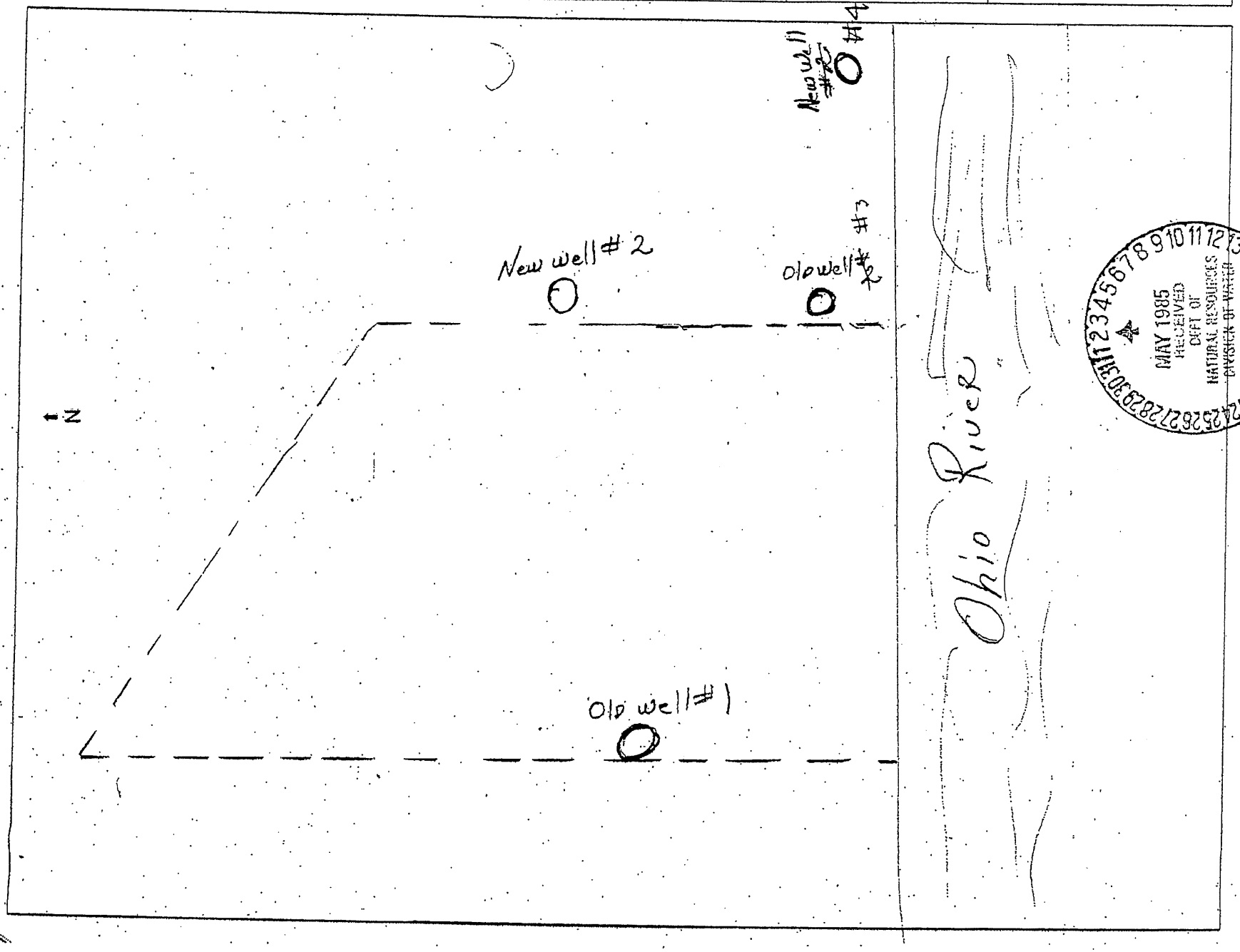
Water Analysis

Color	5	PPM
Turbitity	1	PPM
Sediment	0	
nitrites	0.002	PPM
nitrates	1.5	PPM
chlorides	2.0	PPM
Alkalinity (MC)	285	
Total Hardness	334	
pH	7.3	


T 1S
R 8E
CHARLES-
TOWN
Quad
U.S. MILITARY
RESERVATION
INDIANA ARSENAL
INDIANA
KENTUCKY
Charlestown
Water Supply
Well
#404-1
#404-2
#404-3
#404-4
#4045
#404-6
Mile 591
Mile 592
330 000 FEET
(KY.)
OHIO RIVER
NORMAL POOL ELEV 420
RESERVATION
Twelvemile Island
River Ridge
Water Tank
Light
CLARK CO
OLDHAM
JEFFERSON CO
COLLECTOR WELLS ROAD
4249000m.N.
In. Army Ammo I
10-01027-I
3 wells on The
Jeffersonville Q

FOR OFFICE USE ONLY	Date Received 5/2/85	County Clark	Basin Ohio WM11	Registration No. 10-02242-PS
UTM.N 251075	UTM.E 619225	Township N/A	Range N/A	Section N/A	Topographic Map Charlestown

WATER WITHDRAWAL FACILITY LOCATION SKETCH (Locate facility with reference to water supply, numbered roads, highways, buildings, or distinctive landmarks) This section may be divided for additional maps or separate maps or plats may be attached.



Charlestown Water Utility – Wellfield Photos

Figure 1 Wellfield – view of elevated well and Control Building

Figure 2 Elevated well platforms and concrete platform (abandoned)

Figure 3 Elevated well platforms and Control Building

Figure 4 Well platforms and Control Building (three wells shown)

Charlestown Water Utility – Wellfield Photos

Figure 5 Elevated well platform close-up

Figure 6 Control Bldg. electrical / controls

Figure 7 Inside view - Control Building

Figure 8 Inside view - Control Building

Approval now official

City to receive $140,000 in federal Funds for sewer and water projects

Mayor John Bowen was notified Tuesday that Charlestown had received approval from the House and Home Finance Agency for two public works projects amounting to $140,000 in Federal funds under the accelerated Public Works Program.

The notification came from U. S. Senators Vance Hartke and Birch Bayh and Congressman Winfield K. Denton. The final okay was given Tuesday morning in Washington. Three Federal agencies worked on the project and pushed it through for final approval. These agencies are Area Redevelopment Administration, C.F.A. and A.P.W.P. Mayor Bowen went ot Washington two weeks ago to speed up the request and contacted all the agencies for help.

Funds for accelerated public works projects were rapidly being depleted and it was felt for awhile that Charlestown might lose out.

The funds will be used to complete work on a sewer project to North Charlestown and for expanding water storage and adding new equipment to the water system. The total cost of the two projects is about $281,000. The Federal funds will pay almost half of the projects and city funds will be used to pay for the rest.

Mayor Bowen said that the completion of the two projects will bring Charlestown's city-owned utilities up in modern condition.

Charlestown is in a depressed area which made it eligible for the funds.

Work on the two projects must be started within three months. The blueprints for the sewer system extension are already completed. Bids were taken on the project late last summer. When it was learned that the accelerated public works legislation was in the works before Congress, the City waited to see what would develop.

The sewer project will include an extension from the end of the present sewer line at the corner of Pine Drive and Market Street, north on Market Street to Fifth Street and take in most of north Charlestown on the west side of Market. Theer wil laiso be an attempt to connect those houses on north Charlestown on the west side of Market. There will also be an attempt to connect those houses on S.R. 160 inside the City limits and lying where they drain naturally into the present system.

Improvements to the water system will include a new pump at the wells at the Ohio River, a 1,500,000 gallon ground storage tank on City property near the present skating rink, another pump, and a 12 or 16 inch water line to the elevated storage pressure tank in back of the First Bank of Charlestown.

Cost of the ground storage tank is estimated at $80,000, new pump, $20,000, and an estimated $80,000 for labor. The remainder of the money will be spent for new pipe lines.

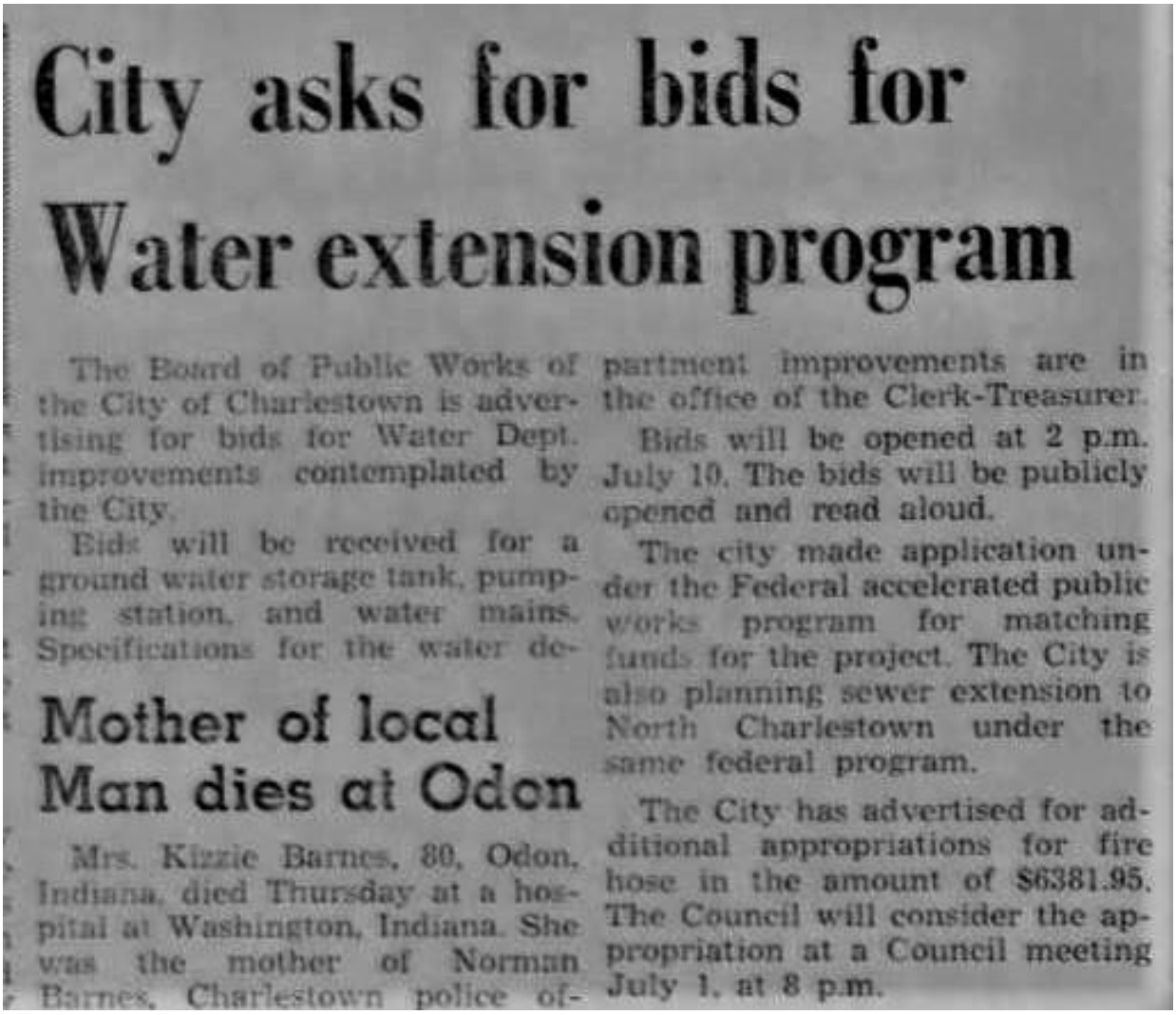
The Mayor stated that as much of the work will be completed as funds will cover. He was very complimentery toward the federal agencies who helped guide the request through agency channels. He also felt that Indiana's two Senators and Congressman Denton were to be thanked for their efforts in helping the City realize the funds.

SWIRLING WATER
rain had fallen on th
ket. Owner Tom Su
routed the stream so

THE CHARLESTOWN COU

Vol. 67 - No. 4930 Charlestown, Indiana, Thursday, March 21, 1963

Figure 1 *Charlestown Courier* article on Federal Aid for the Water Improvement Program March 21, 1963.



City asks for bids for Water extension program

The Board of Public Works of the City of Charlestown is advertising for bids for Water Dept. improvements contemplated by the City.

Bids will be received for a ground water storage tank, pumping station, and water mains. Specifications for the water department improvements are in the office of the Clerk-Treasurer.

Bids will be opened at 2 p.m. July 10. The bids will be publicly opened and read aloud.

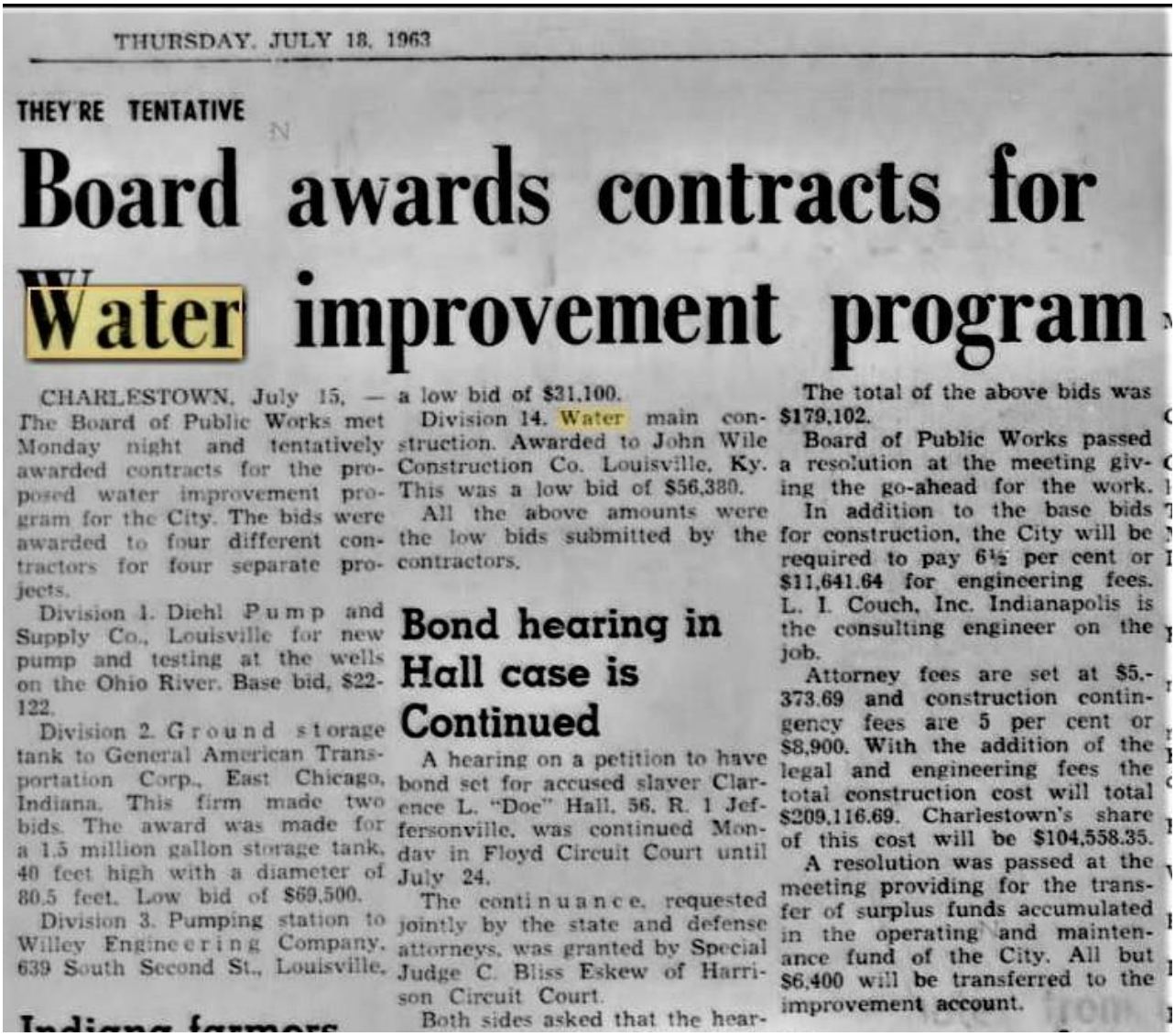
The city made application under the Federal accelerated public works program for matching funds for the project. The City is also planning sewer extension to North Charlestown under the same federal program.

The City has advertised for additional appropriations for fire hose in the amount of $6381.95. The Council will consider the appropriation at a Council meeting July 1, at 8 p.m.

Mother of local Man dies at Odon

Mrs. Kizzie Barnes, 80, Odon, Indiana, died Thursday at a hospital at Washington, Indiana. She was the mother of Norman Barnes, Charlestown police of-

Figure 2 *Charlestown Courier* article on Water Improvement Program bidding June 13, 1963.



THURSDAY, JULY 18, 1963

THEY'RE TENTATIVE

Board awards contracts for Water improvement program

CHARLESTOWN, July 15, — The Board of Public Works met Monday night and tentatively awarded contracts for the proposed water improvement program for the City. The bids were awarded to four different contractors for four separate projects.

Division 1. Diehl Pump and Supply Co., Louisville for new pump and testing at the wells on the Ohio River. Base bid, $22-122.

Division 2. Ground storage tank to General American Transportation Corp., East Chicago, Indiana. This firm made two bids. The award was made for a 1.5 million gallon storage tank, 40 feet high with a diameter of 80.5 feet. Low bid of $69,500.

Division 3. Pumping station to Willey Engineering Company, 639 South Second St., Louisville, a low bid of $31,100.

Division 14. Water main construction. Awarded to John Wile Construction Co. Louisville, Ky. This was a low bid of $56,380.

All the above amounts were the low bids submitted by the contractors.

Bond hearing in Hall case is Continued

A hearing on a petition to have bond set for accused slayer Clarence L. "Doc" Hall, 56, R. 1 Jeffersonville, was continued Monday in Floyd Circuit Court until July 24.

The continuance, requested jointly by the state and defense attorneys, was granted by Special Judge C. Bliss Eskew of Harrison Circuit Court.

Both sides asked that the hear-

The total of the above bids was $179,102.

Board of Public Works passed a resolution at the meeting giving the go-ahead for the work.

In addition to the base bids for construction, the City will be required to pay 6½ per cent or $11,641.64 for engineering fees. L. I. Couch, Inc. Indianapolis is the consulting engineer on the job.

Attorney fees are set at $5,-373.69 and construction contingency fees are 5 per cent or $8,900. With the addition of the legal and engineering fees the total construction cost will total $209,116.69. Charlestown's share of this cost will be $104,558.35.

A resolution was passed at the meeting providing for the transfer of surplus funds accumulated in the operating and maintenance fund of the City. All but $6,400 will be transferred to the improvement account.

Figure 3 *Charlestown Courier* news article on Water Improvement Program bid results and contract awards July 18, 1963.

Charlestown, Indiana, Thursday, October 3, 1963

Public works Projects moving Along nicely

Work is progressing on two public works project in Charlestown. The sewer extension to North Charlestown is nearing completion with about two weeks work left to finish the project.

The water improvement project costing $250,000 is well into its second week with a 12-inch line from the new water tower on Charlestown Landing Road to the water tower in the alley running back of Indiana Bell Telephone Company office nearing completion.

Concrete foundations for the 1,500,00 gallon water storage tank on Charlestown Landing Road was poured Tuesday and Wednesday.

Work on the new pumping facility at the well on the Ohio River is also almost completed.

50-year pin Awarded to Elmer Prather

Elmer C. Prather, Route 2, Charlestown received a 50-year

Figure 4 *Charlestown Courier* news article on Water Improvement Program progress, October 3, 1963.

Vol. 68 - No. 4981 The Charlestown Courier, Charlestown, Indiana Thursday, March 26, 1964

B. P. W. shown plans of proposed $575,000 sewage treatment plant.

The Board of Public Works of Charlestown received a briefing on the proposed $575,000 sewage treatment plant for the city Monday night. Ernest R. Hamilton, Associates of Indianapolis, the engineering consultant for the job was employed by the previous administration to draw up plans for the plant and assist the city in making application to the Federal Government for funds under the Accelerated Public Works program.

Mr. Hamilton explained the program and the plans to members, present, Mayor Canby Bottorff, and Councilmen James Lewis, Jr. and Hiram Abbott.

The City is asking for $284,500 from the government. The City would be required to pay half of the program or a like amount of $284,500. This would require the City to sell bonds totaling the full amount of the City's share.

The proposed treatment plant would be built near the intersection of State Road 62 and Charlestown Landing Road or further south on Charlestown Landing Road near the new water storage plant.

Sewage would be pumped from the two present disposal plants to the new plant for treatment. Treatment of the raw sewage would include digester tanks, treatment by chlorine, removing the sludge from the tanks, further treatment, drying the sludge and running the purified remainder to the Ohio River by pipeline.

The State Board of Health has recommended that Charlestown erect a treatment plant for many years.

The treatment plant site would include two digester tanks, an office building and grounds sufficiently large to house the plant. It is proposed that the building be large enough for a two vehicle garage, laboratory, room for a generator, office space and heating and humidifier equipment.

The two large concrete digester tanks would be laid on a sand pad to prevent cracking and damage.

The previous administration contracted with Ernest Hamilton Associates for a preliminary fee of $26,000 to draw up plans and specifications. The City at that time made application to the State Revolving Fund for a loan of $29,000 to pay this fee.

Mr. Hamilton told the Board of Public Works Tuesday night that he had been assured by Senator Vance Hartke that Charlestown is at the top of the list to receive funds as soon as the U. S. Senate passes the new bill authorizing the funds for this year. He told the group that the bill for $1 and half billion had already passed the House.

Mr. Hamilton stated that Charlestown is at the top of the list to receive funds according to the Chicago Office of Health, Education and Welfare of the U. S. Government. Officials believe that the funds will be available in 60 to 90 days.

The Indiana State Board of Health has already given tentative approval of the plans.

The Board of Public Works is holding off making the $26,000 payment to the Hamilton firm until the government loan is made available.

Hamilton and Associates is the engineering firm in charge of the sewer extension program to North Charlestown. He asked to meet with Mayor Bottorff and Councilman Lewis Thursday to finish with the contractor who put in the sewer. The entire board expressed dissatisfaction with the contractor for failing to clean up after the sewer was put in last fall.

The Board hopes to get this d

State Commission approves Clark's Proposed 3-unit plan

Teacher group Votes support of

The May Primary will be another day of decision for the voters of Clark County and es-

That is, all of the school systems in the county were to be merged into a single unit under

expressed by the school authorities in Clarksville, who now seem to prefer the single unit

Figure 5 *Charlestown Courier* news article on sewage treatment plant project with reference to new water storage plant March 26, 1964.

Figure 1 – Charlestown Water System 1938 Dedication Plaque on Pump Building

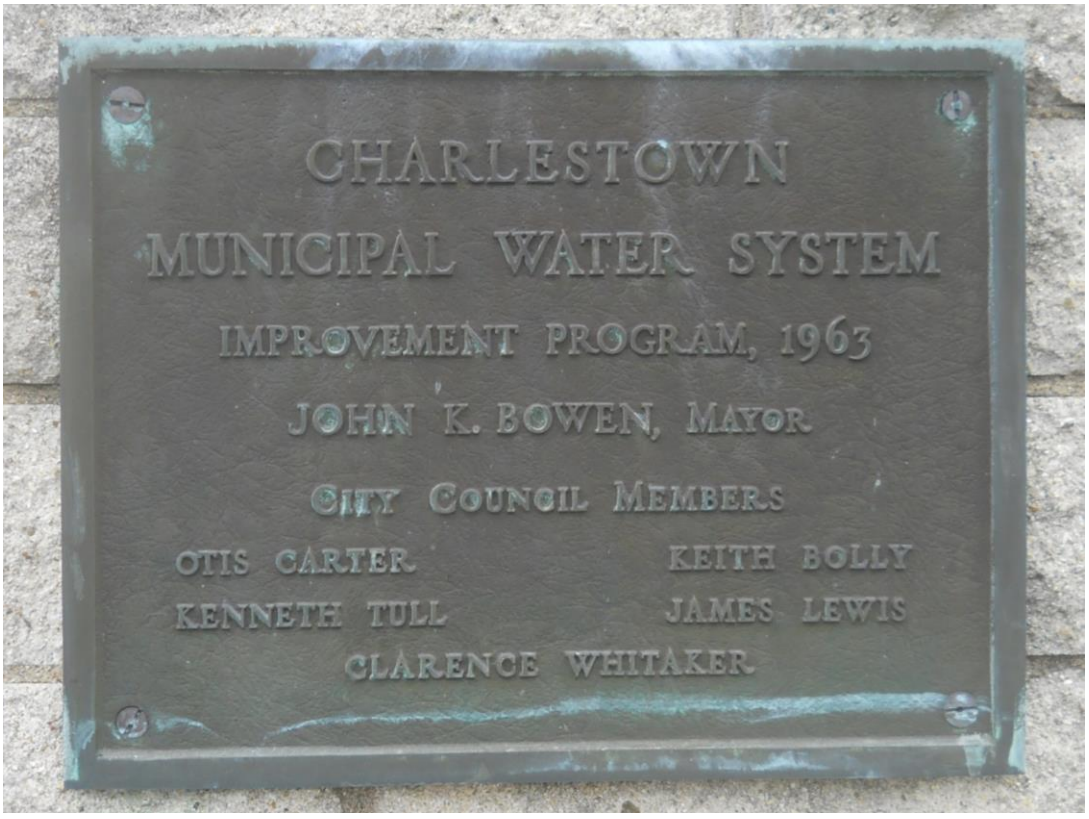


Figure 1 – Charlestown Water System 1963 Improvement Program Plaque on Pump Building

LIQUID ENGINEERING CORPORATION

November 4, 2004

Mr Allan Lesnet
Charlestown Water Department
304 Main Cross
Charlestown, IN 47111

RE: Tank Assessment Report Submittal

Dear Mr Lesnet:

Thank you for choosing Liquid Engineering Corporation for your water system maintenance. I have enclosed the reporting that was compiled from information gathered during the assessment of your tank(s). This reporting includes the following:

- Visual Condition binder - A fully illustrated and concise format including photos and narratives that reflect the current condition and recommend any applicable remediation.
- Recommendations/Cost Estimate binder - Detailed cost analysis for upgrades or repairs necessary to bring the facility into optimum compliance with requirements, standards, regulations and recommendations from entities like NRWA, AWWA, OSHA, NFPA, and EPA. This includes a narrative summary of deficiencies and/or maintenance issues identified during the assessment.
- Regulatory Compliance binder - Explains the standards and regulations associated with each of the identified discrepancies and recommendations.

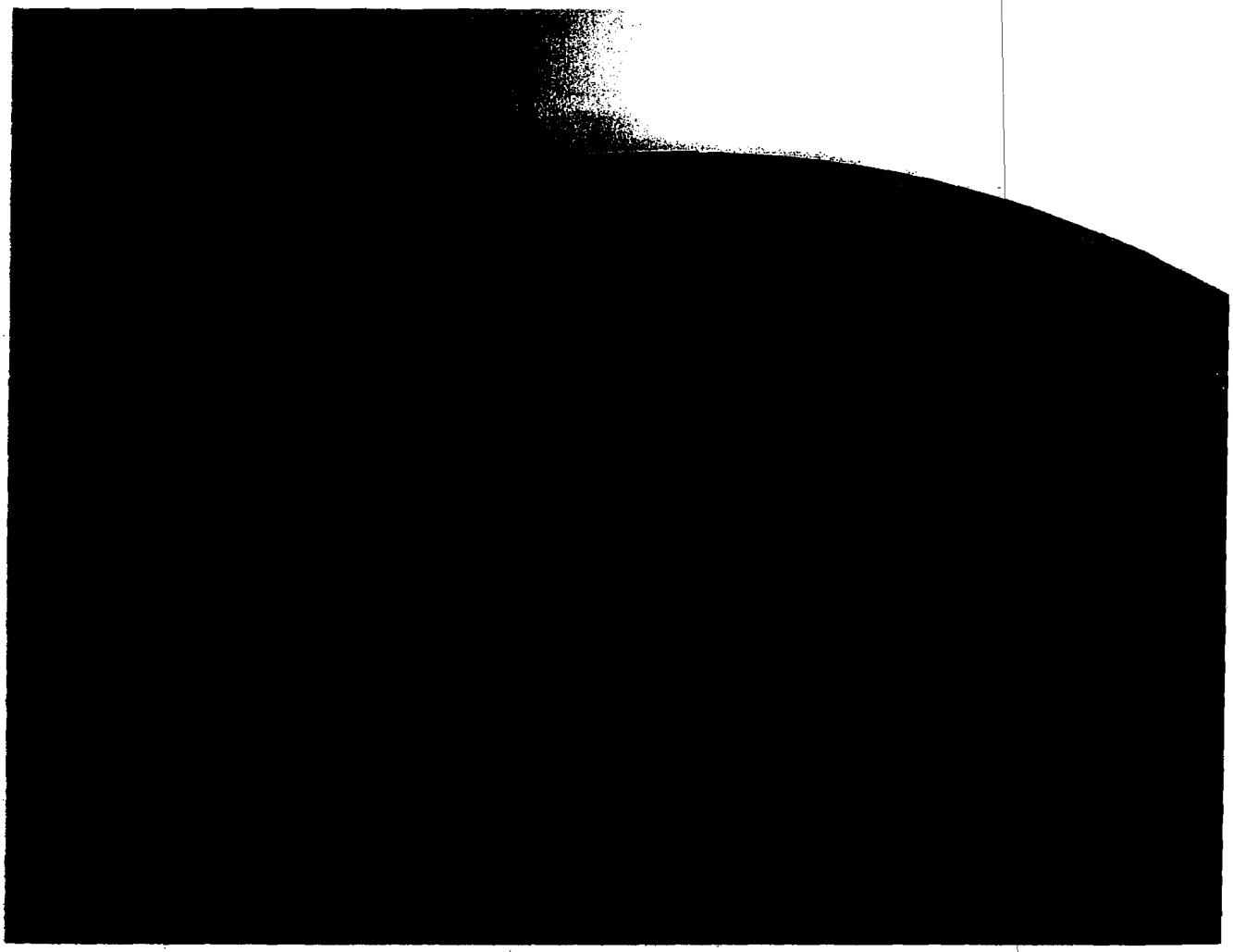
In the near future, I will be contacting you to review the information contained in the above-mentioned documentation and help you prioritize any recommended maintenance. In the event you have any immediate needs or questions regarding this reporting, please feel free to call me at 800 438-2187.

Once again, thank you for choosing Liquid Engineering Corporation. We truly appreciate the opportunity to work with you and your staff.

Sincerely,
LIQUID ENGINEERING CORPORATION

Mike Felten
Operations Analyst

7 East Airport Road • P.O. Box 80230 Billings, MT 59108-0230 • 800-438-2187 • 406-651-0105 • Fax 406-651-0120
lecmail@liquidengineering.com • www.liquidengineering.com



Charlestown Water Department
304 Main Cross
Charlestown, IN 47111
1,500,000 Gallon G.S.T.
August 21, 2004
Allan Lesnet, Primary Contact
(812) 256-7129
Liquid Engineering Corporation (LEC) Job No. 24288

If there are any questions concerning the information contained within this report, please call Liquid Engineering Corp. at 1-800-438-2187

Charlestown Water Dept.
1,500,000 Gallon G.S.T.
(LEC) Job No. 24288

Due to the heightened awareness of the possibility of unauthorized access to water tanks and water contamination, ladder guards, locks on manways and locks on all valves should be considered a public safety requirement.

We recommend installing an electronic monitoring system on the roof hatch and replacing all standard air vents with Security Vent Shrouds.

Charlestown Water Dept.
1,500,000 Gallon G.S.T.
(LEC) Job No. 24288

Photo shows the condition of the foundation. We recommend repairing any cracks and spalling in the concrete with a commercial non-shrinking grout, then caulking around the base of the tank to foundation connection to prevent water from entering under the tank and sealing the foundation with a concrete sealant.

We also recommend electrically grounding the tank for lightning protection as required by OSHA, (general duty clause) (see glossary).

6" gap between ground level and tank
Grading work to keep water away from tank

Charlestown Water Dept.
1,500,000 Gallon G.S.T.
(LEC) Job No. 24288

None issue

Photo shows the condition of the shell. Currently there is no drain valve. We recommend installing a frost proof drain valve near the shell-to-floor connection, complete with locking device to prevent unauthorized draining of the tank and a splash pad to direct water away from the foundation, in accordance with TSS, section 7.0.5: Drains, (see glossary pg. 11).

Charlestown Water Dept.
1,500,000 Gallon G.S.T.
(LEC) Job No. 24288

Photo shows the condition of the existing shell manway. The following items are required to bring tank in compliance with AWWA D100-96, section 7.1: Shell manways, OSHA and TSS, (see glossary pg. 8):

We recommend:

Post **Confined Space Entry** signs

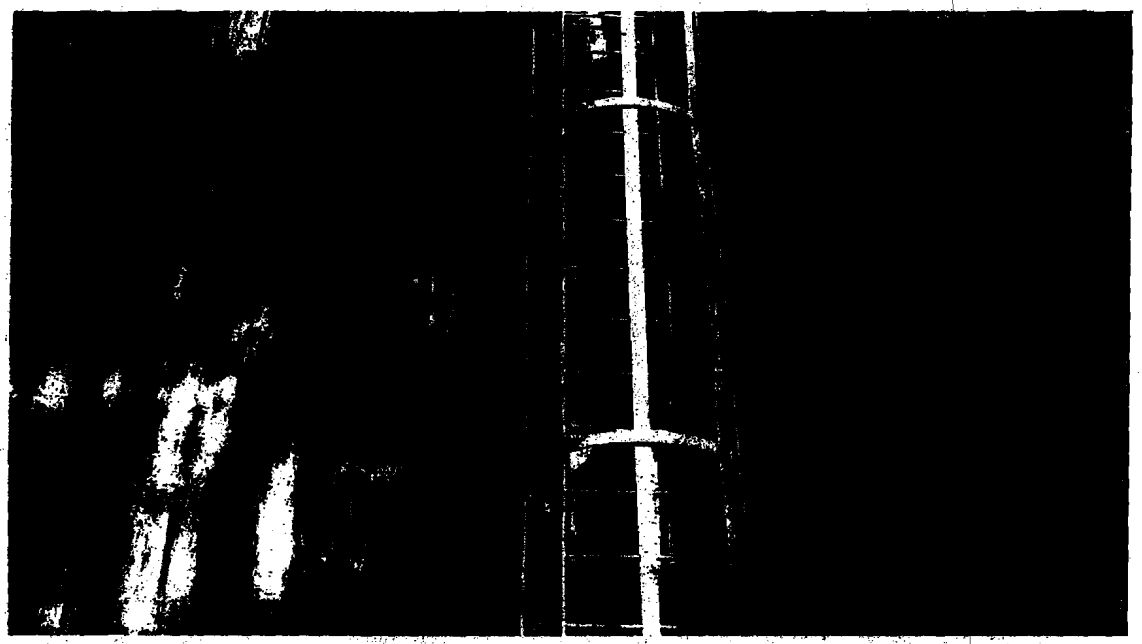
We further recommend:

Install 36" second shell manway 180° from primary manway
Install stainless steel bolts on existing manway

Note: For safety reasons we have recommended installing a 36" manway instead of the required 24" manway.

Charlestown Water Dept.
1,500,000 Gallon G.S.T.
(LEC) Job No. 24288

Recommendation
* Notch rail or Cable grab system



Shell ladder in above photo is not in compliance with OSHA and AWWA D100-96, Section 7.4: Ladders, 7.4.1: Outside tank ladder, regulations. We recommend replacement of the ladder for the following reasons:

Non-compliant	For compliance
Non anti-skid ladder rungs Ladder dimensions	Install AWWA and OSHA approved shell ladder complete with standoffs every 10' on centers, a cable type ladder safety climb device and post a **Fall Protection Required** sign.

For adequate fall protection, we have recommended installing a cable type ladder safety climb device.

Ladders installed on this tank will be in compliance with AWWA, TSS and OSHA, (see glossary pg. 17).

Charlestown Water Dept.
1,500,000 Gallon G.S.T.
(LEC) Job No. 24288

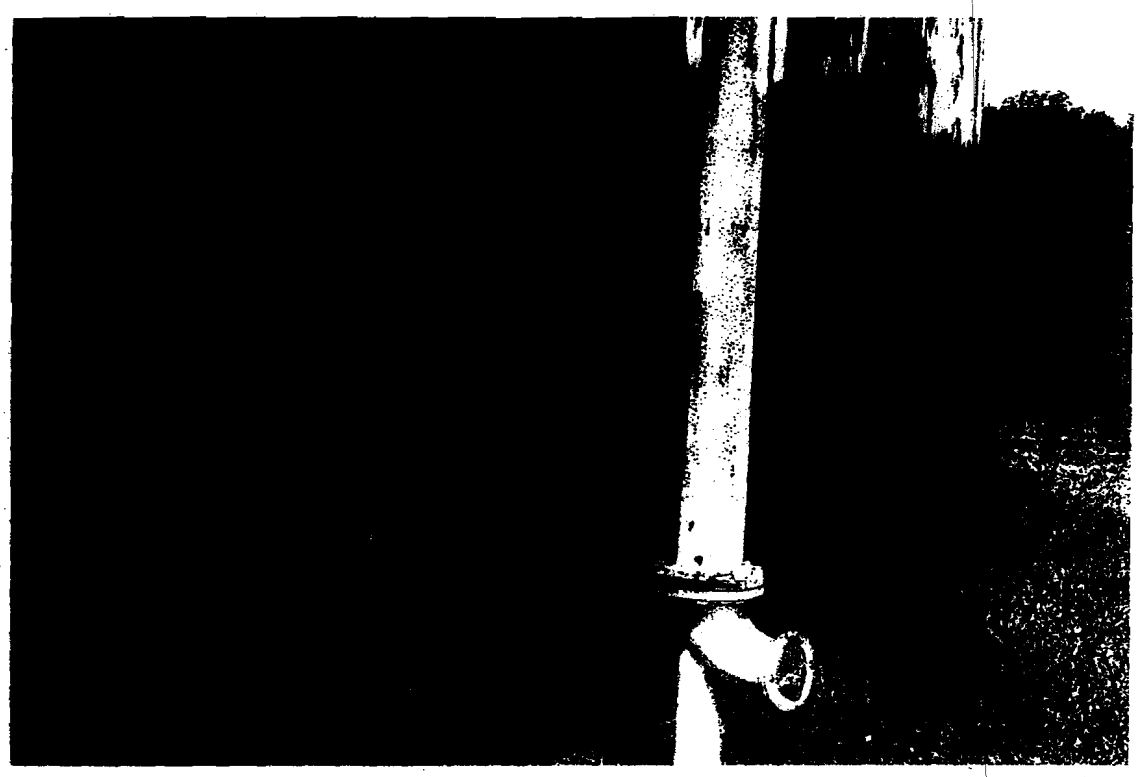


Photo shows the overflow pipe. The overflow pipe is not equipped with a flapper valve. We recommend installing a flapper valve, new screen on the existing overflow pipe and a splash pad to direct the water away from the tank's foundation as required by AWWA (see glossary pg. 14).

* Grading to Ensure water can flow away from tank

Charlestown Water Dept. 1,500,000 Gallon G.S.T. (LEC) Job No. 24288

→ Subjective for safety
→ maybe from ladder to hatch less expensive

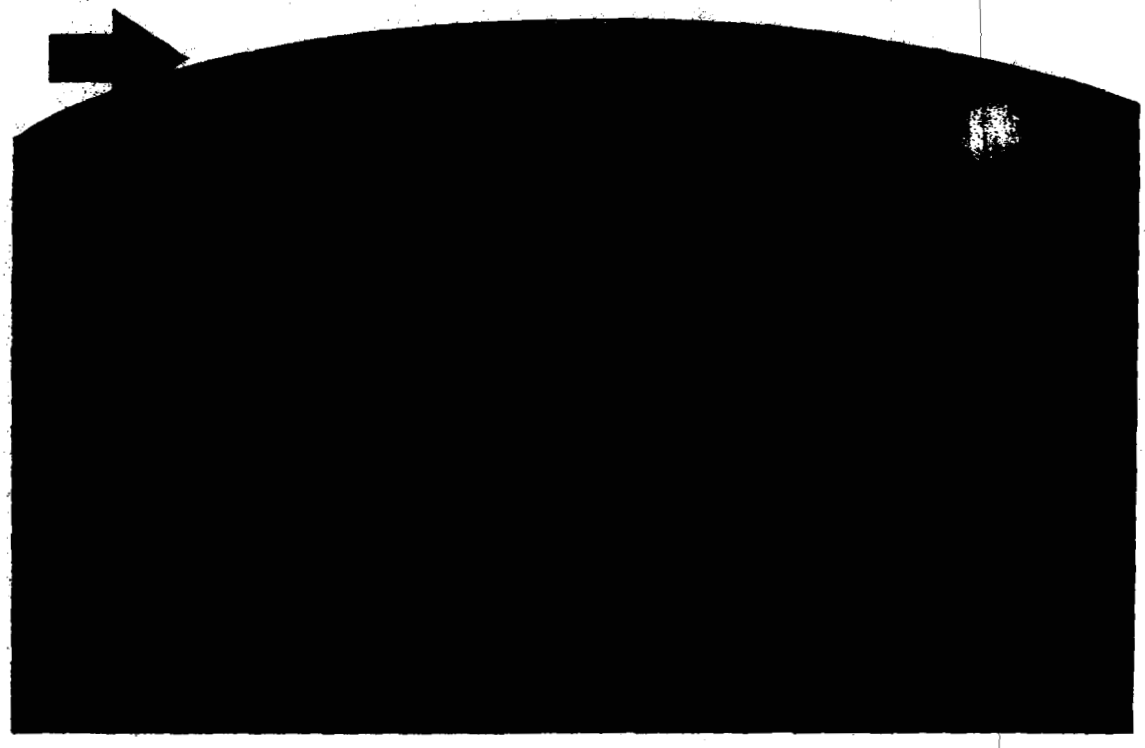


Photo shows the tank roof is not equipped with an OSHA required fall protection system. We recommend installing an approved 42" high handrail system around the circumference of the tank roof, complete with toeboard, intermediate rail and a stainless steel gate chain at the junction of the shell-to-roof access ladder and tank roof as required by OSHA (see glossary).

Charlestown Water Dept.
1,500,000 Gallon G.S.T.
(LEC) Job No. 24288

Photo shows the condition of the roof manway. Roof openings on this tank require the following to be in compliance with OSHA, AWWA and TSS Section 7.0.8: Access, (see glossary pg. 23):

We recommend:

Post **Confined Space Entry** signs

We further recommend:

Install 36" second manway 180° from primary manway
Install exterior platform for rescue tripod, complete with tripod and winch
Install interior rescue platform
Install new lock on primary manway

Note: For safety reasons we have recommended installing a 36" manway instead of the required 24" manway.

RAP ATTACHMENT 2
Page 11 of 21

Charlestown Water Dept. 1,500,000 Gallon G.S.T. (LEC) Job No. 24288

9/11 measure minimal likely
Ensure that screen is on vent

The existing vent does not provide protection against the introduction of chemical or biological agents. We recommend installing a security vent shroud.

Photo shows the condition of the existing roof vent. **An improperly vented tank may cause external pressure to act on the tank which can cause buckling even at low pressure differential.** We recommend replacing the existing roof vent with a vacuum/pressure, frost proof vent and screen in compliance with AWWA and TSS, (see glossary).

Charlestown Water Dept.
1,500,000 Gallon G.S.T.
(LEC) Job No. 24288

Include w/ Painting

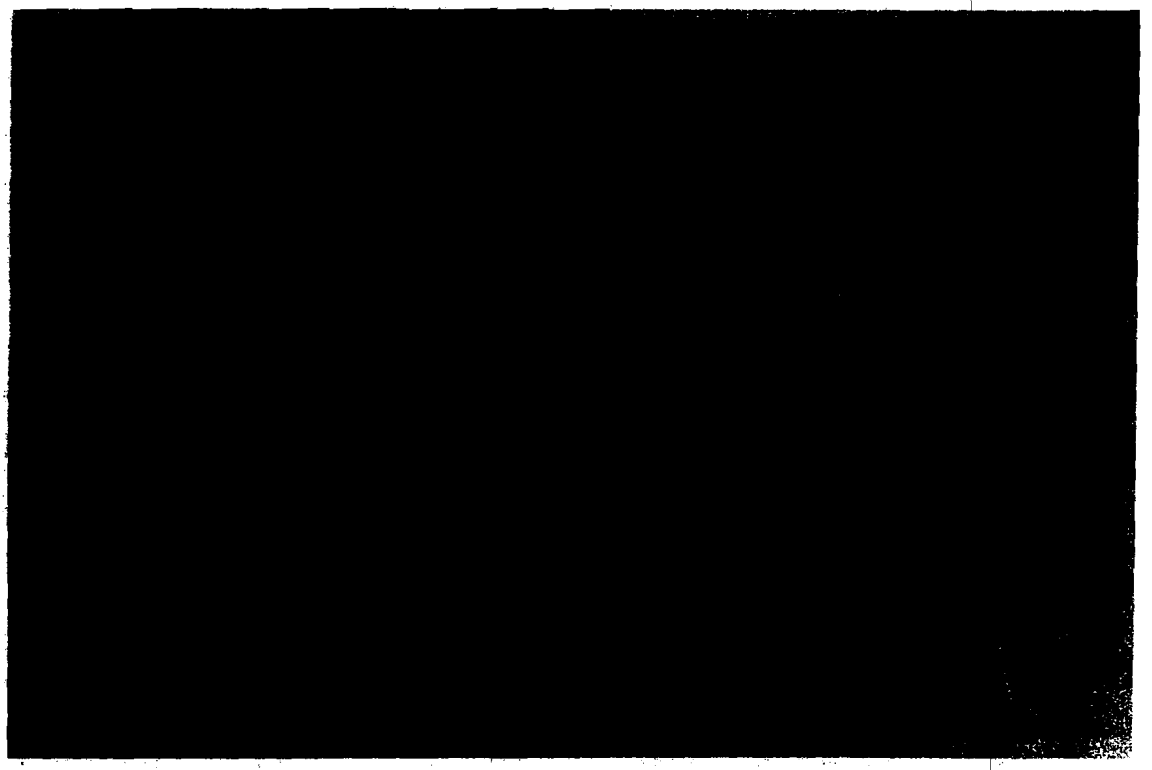
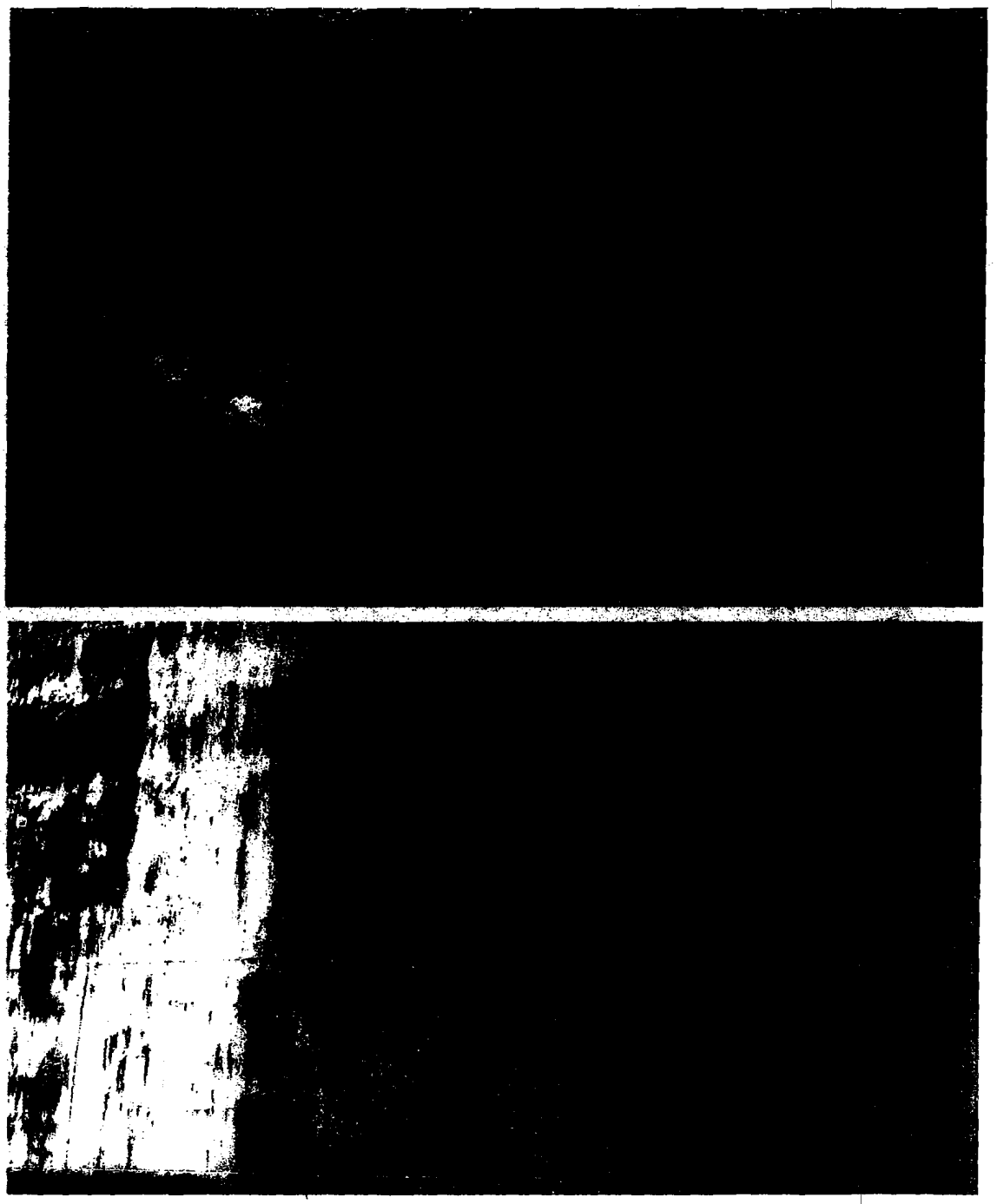


Photo shows the tank interior and exterior roof portions of the cathodic protection system. Painting of the interior of a large tank requires that it be rigged with scaffolding (pic-boards). We recommend removal of the cathodic protection system and installing inverted, tapped, plugged welding flanges in the handholes and as needed, to allow rigging cables to be inserted into the tank, as needed, to facilitate the rigging of the tank interior.

Charlestown Water Dept.
1,500,000 Gallon G.S.T.
(LEC) Job No. 24288



Photos show the condition of the exterior paint system. We recommend sandblasting the tank exterior to an SSPC #6 (commercial blast) condition, applying one (1) full coat of epoxy, then applying one (1) finish coat of polyurethane.

Charlestown Water Dept.
1,500,000 Gallon G.S.T.
(LEC) Job No. 24288

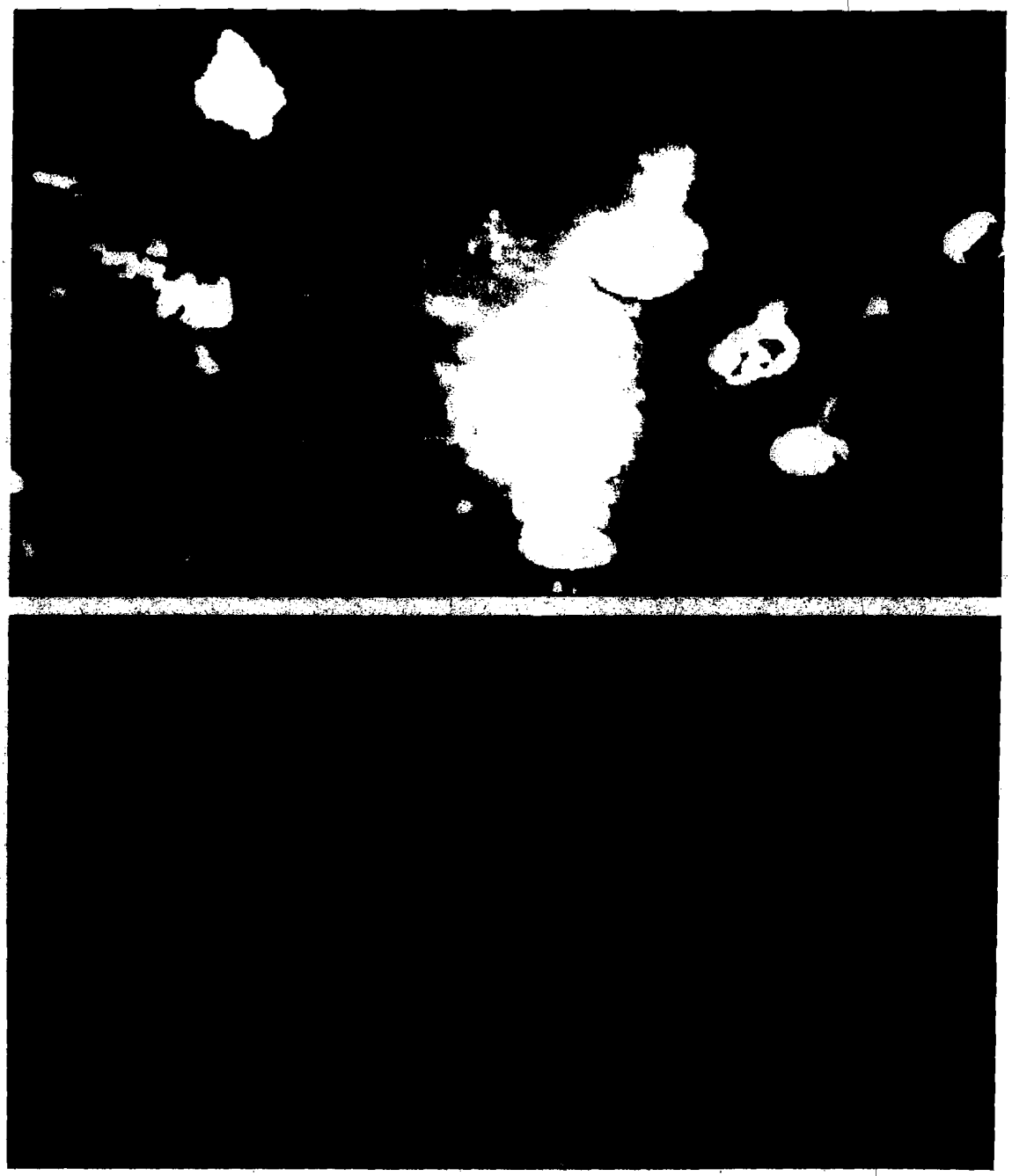
Photo shows the condition of the interior roof-to-rim angle connection. Notice the rust forming in the crevice between the roof and rim angle. We recommend, after sandblasting and painting, caulking around the entire circumference of this connection to prevent premature failure of a new interior liner.

RAP ATTACHMENT 2
Page 15 of 21

Charlestown Water Dept.
1,500,000 Gallon G.S.T.
(LEC) Job No. 24288

Photo shows the condition of the rafter-to-support column and rafter-to-shell connections. We recommend rewelding the rafter-to-support column and rafter-to-shell connections to reinforce.

Charlestown Water Dept.
1,500,000 Gallon G.S.T.
(LEC) Job No. 24288



Photos show the condition of the interior liner. We recommend sandblasting all rusted and abraded areas of the tank interior to an SSPC #10 (near white blast) condition, brushblast all remaining areas, stripe coating all seams and welds, then applying an epoxy liner to achieve 8-10 mils of dry film thickness.

GROUND STORAGE INSPECTION REPORT

JOB NO: LEC 24288 DATE: 8/21/04 INSPECTOR: Team 13

TANK OWNER: Charlestown Water Department OWNER'S ORDER NO:

OWNER'S REPRESENTATIVE: Allan Lesnet TITLE: Primary Contact

MAILING ADDRESS: 304 Main Cross

PHYSICAL ADDRESS: 304 Main Cross

CITY, STATE: Charlestown, IN ZIP: 47111

COUNTY TANK IS LOCATED IN: Clark SEISMIC ZONE OF COUNTY: 2

TELEPHONE: (812) 256-7129 FAX: (812) 256-7140

LOCATION OF TANK:

Charlestown Water Department
304 Main Cross
Charlestown, IN 47111
August 21, 2004
Allan Lesnet
Primary Contact
(812) 256-7129

ORIGINAL CONTRACT NO: unknown YEAR BUILT: circa 1970

ORIGINAL MANUFACTURER: unknown CAPACITY: 1,500,000 Gallon

DATE OF LAST INSPECTION: 1987 TYPE: Potable

DIAMETER: 65' HEIGHT: 60'

TYPE CONSTRUCTION: WELDED: X RIVETED: BOLTED:

WHO IS CUSTOMER'S INSURANCE CARRIER: unknown

CODE UPDATES

ITEM	REQUIRES UPDATE	NOT APPLICABLE
Lightning Protection	X	
Shell Manway(s)	X	
Manway Davit(s)	X	
Confined Space Entry Signs	X	
Shell to Roof Access Ladders	X	
Safety Climb Devices	X	
Standoffs on 10' Centers	X	
Handrails	X	
Safety Chain in Handrail Opening	X	
Flapper Valve & Screen on O'flow	X	
Vacuum-Pressure Frost Proof Vent	X	
Roof Manway	X	
Second Roof Manway		X
Interior Shell Ladder	X	
Heater Pipe		N/A
Water Level Indicator		X
Thermometer		X

RECOMMENDATIONS

NUMBERS REFER TO REPORT PAGES
00. INDICATES THERE WAS NO PHOTOGRAPH AVAILABLE TO DEMONSTRATE

00. Post a **"Warning, Tampering With This Facility is a Federal Offense"** (US code title 42, section 300i-1) sign $25

2. Install an electronic monitoring system on the roof hatch $2,450
Monitoring of the electronic system ..... $50 monthly

3. Repair any cracks and spalling in the concrete with a commercial non-shrinking grout, then caulk around the base of the tank to foundation connection to prevent water from entering under the tank and seal the foundation with a concrete sealant $1,450

Electrically ground the tank for lightning protection as required by OSHA, (general duty clause) and NFPA $1,275

4. Install a frost proof drain valve, complete with locking device to prevent unauthorized draining of the tank and a splash pad to direct water away from the foundation $1,950

5. Post **Confined Space Entry** signs ..... $25 ea.
Install 36" second shell manway 180° from primary manway $3,650
Install stainless steel bolts on existing manway ..... $550 set

6. Install AWWA and OSHA approved shell ladder with standoffs every 10' on centers $3,900
Install a cable type ladder safety climb device $1,850
Post a **Fall Protection Required** sign $25

7. Install a flapper valve, a new screen on the existing overflow pipe and a splash pad to direct the water away from the tank's foundation $550

8. Install an approved 42" high handrail system around the circumference of the tank roof, complete with toeboard, intermediate rail and a stainless steel gate chain at the junction of the shell-to-roof access ladder and tank roof as required by OSHA $10,946

RECOMMENDATIONS

NUMBERS REFER TO REPORT PAGES

9. Post **Confined Space Entry** signs ..... $25 ea.
Install 36" second roof manway 180° from primary manway $3,150
Install exterior platform for rescue tripod complete with tripod and winch $5,000
Install interior rescue platform $5,200
Install new lock on primary manway ..... No chare with order

10. Install a security vent shroud ..... Call for custom pricing

Replace the existing roof vent with a vacuum/pressure, frost proof vent and screen in compliance with AWWA $4,810

11. Remove the cathodic protection system, weld steel plates over the handhole openings to prevent the ingress of contaminants into the water supply $2,250

13. Caulk around the entire circumference of the roof-to-rim angle connection to prevent premature failure of a new interior liner $4,084

14. Reweld the rafter-to-support column and rafter-to-shell connections to reinforce $4,950

00. Perform earthquake analysis to determine if tank meets the seismic zone requirements for which it is located. This will include recommendations to bring tank into compliance with tank seismic zone 2 ..... $4,500

12. EXTERIOR COATING SYSTEM: Sandblast the tank exterior to an SSPC #6 (commercial blast) condition, applying one (1) full coat of epoxy, then applying one (1) finish coat of polyurethane $59,168

RECOMMENDATIONS

NUMBERS REFER TO REPORT PAGES

15. INTERIOR COATING SYSTEM: Sandblast all rusted and abraded areas of the tank interior to SSPC #10 (near white blast) condition, brushblast all remaining areas, stripe coat all seams and welds, then apply an epoxy liner to achieve 8-10 mils dry film thickness..... $46,338

The recommendations listed above can be incorporated into a 3-5 year program.

00. We recommend our Extended Warranty Program to ensure the tank is maintained on a yearly basis.....$19,168 yearly
.....$1,644 monthly
Paying on a monthly basis will accrue no interest
A sample maintenance agreement is enclosed in this packet

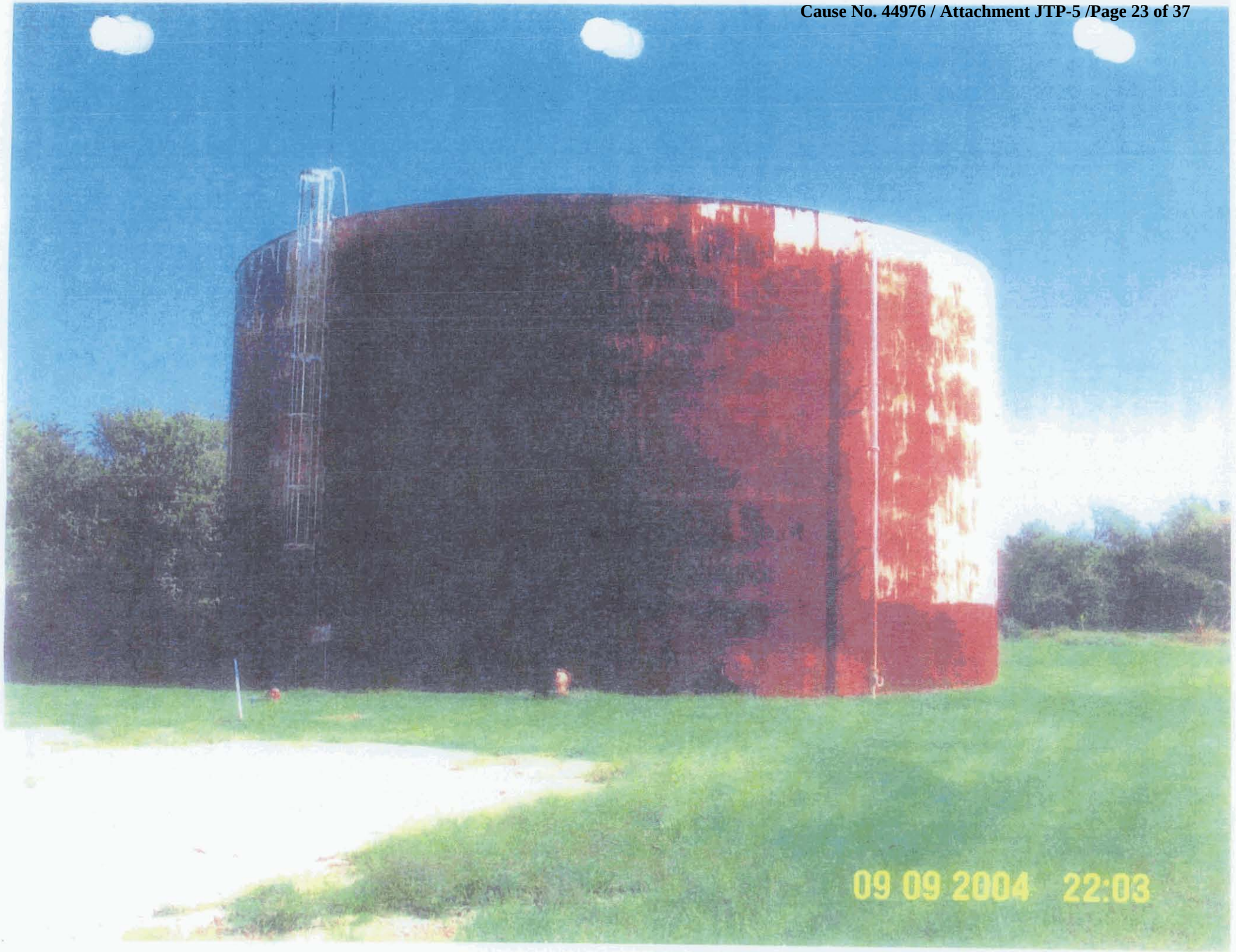
BASED ON THE NUMBER OF ITEMS ACCEPTED, PRICES MAY VARY.
All Prices are in U.S. Dollars
If union labor or prevailing wage is required add 20%
Copies of this inspection report are available for an additional cost per copy, call 1-800-438-2187

The inspection report and comments reflect the general condition of the tank. However, we can not guarantee that additional deficiencies may not become apparent during the cleaning, repair or paint process of the tank. It is recommended that $15,000 be set aside for latent defects.

The handling, removal and/or disposal of hazardous or contaminated materials such as asbestos, lead, chemical or any like substance that requires special handling is not included in the price submitted for work herein. Paint prices do not include lead abatement or containment.

Appendix 5

Ground Storage Tank Photos & Inspection Report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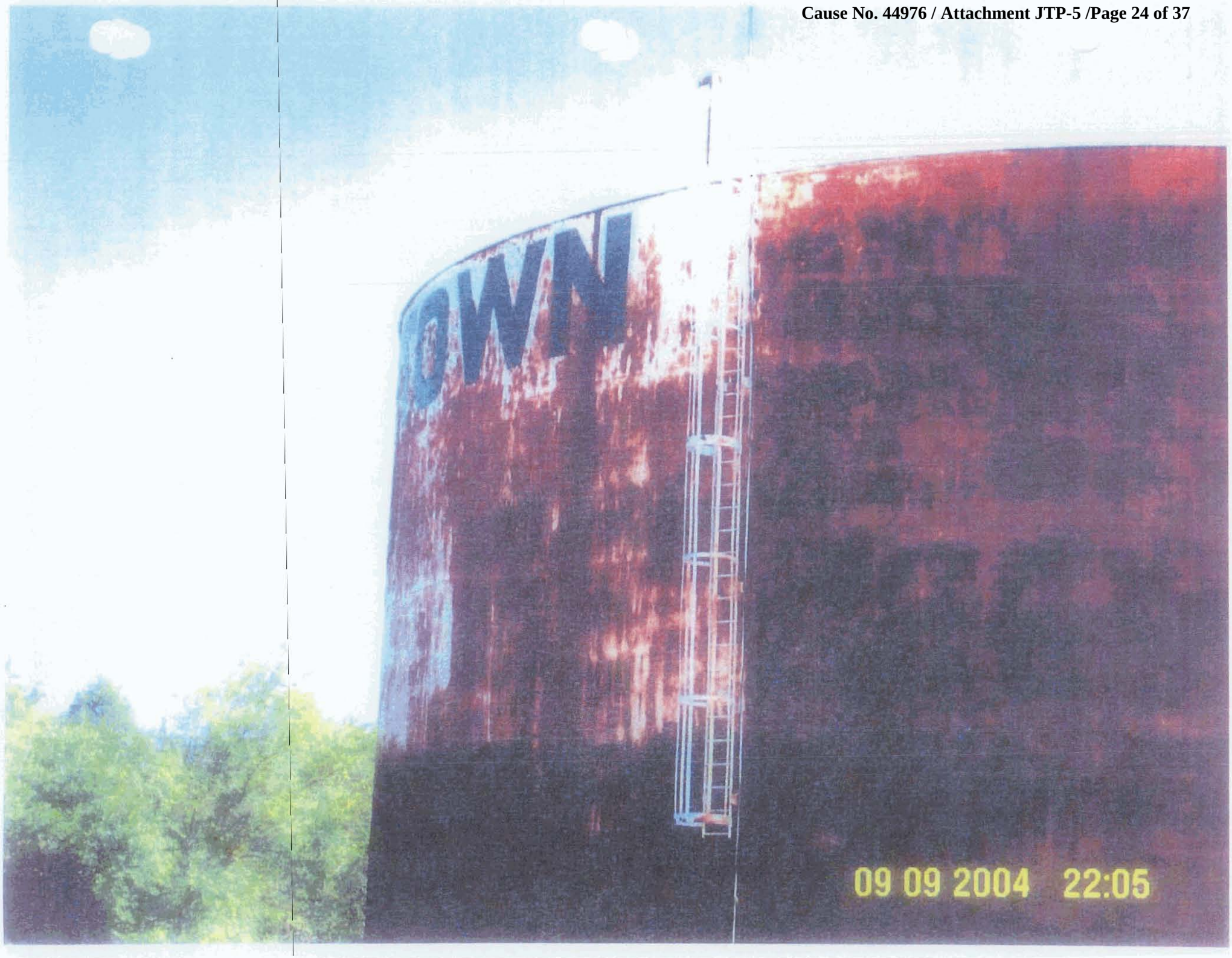
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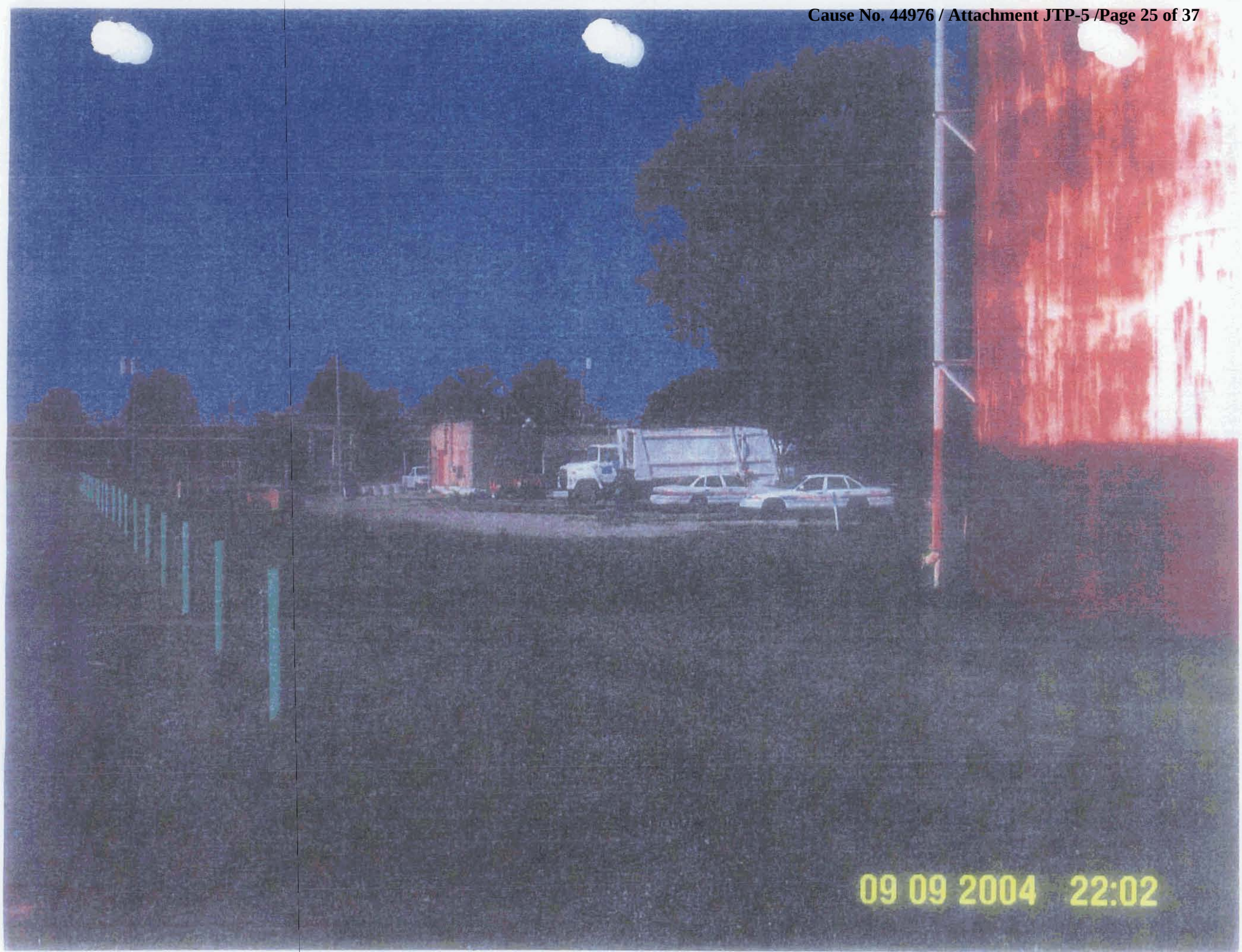
09 09 2004 22:02

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P.O. Box 80230 Billings, MT 59108-0230
866-298-4423 • 406-294-6930
Fax: 406-652-0581

CODE UPDATES

ITEM	REQUIRES UPDATE	NOT APPLICABLE
Lightning Protection	X	
Shell Manway(s)	X	
Manway Davit(s)	X	
Confined Space Entry Signs	X	
Shell to Roof Access Ladders	X	
Safety Climb Devices	X	
Standoffs on 10' Centers	X	
Handrails	X	
Safety Chain in Handrail Opening	X	
Flapper Valve & Screen on O'flow	X	
Vacuum-Pressure Frost Proof Vent	X	
Roof Manway	X	
Second Roof Manway		X
Interior Shell Ladder	X	
Heater Pipe		N/A
Water Level Indicator		X
Thermometer		X

RECOMMENDATIONS

NUMBERS REFER TO REPORT PAGES

00. INDICATES THERE WAS NO PHOTOGRAPH AVAILABLE TO DEMONSTRATE

00. Post a **"Warning, Tampering With This Facility is a Federal Offense"** (US code title 42, section 300i-1) sign $25

2. Install an electronic monitoring system on the roof hatch $2,450
Monitoring of the electronic system ..... $50 monthly

3. Repair any cracks and spalling in the concrete with a commercial non-shrinking grout, then caulk around the base of the tank to foundation connection to prevent water from entering under the tank and seal the foundation with a concrete sealant $1,450

Electrically ground the tank for lightning protection as required by OSHA, (general duty clause) and NFPA $1,275

4. Install a frost proof drain valve, complete with locking device to prevent unauthorized draining of the tank and a splash pad to direct water away from the foundation $1,950

5. Post **Confined Space Entry** signs ..... $25 ea.
Install 36" second shell manway 180° from primary manway $3,650
Install stainless steel bolts on existing manway ..... $550 set

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Install a cable type ladder safety climb device $1,850
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RECOMMENDATIONS

NUMBERS REFER TO REPORT PAGES

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Install new lock on primary manway.....No chare with order

10. Install a security vent shroud.....Call for custom pricing

Replace the existing roof vent with a vacuum/pressure, frost proof vent and screen in compliance with AWWA..... $4,810

11. Remove the cathodic protection system, weld steel plates over the handhole openings to prevent the ingress of contaminants into the water supply..... $2,250

13. Caulk around the entire circumference of the roof-to-rim angle connection to prevent premature failure of a new interior liner..... $4,084

14. Reweld the rafter-to-support column and rafter-to-shell connections to reinforce..... $4,950

00. Perform earthquake analysis to determine if tank meets the seismic zone requirements for which it is located. This will include recommendations to bring tank into compliance with tank seismic zone 2..... $4,500

12. EXTERIOR COATING SYSTEM: Sandblast the tank exterior to an SSPC #6 (commercial blast) condition, applying one (1) full coat of epoxy, then applying one (1) finish coat of polyurethane $59,168

RECOMMENDATIONS

NUMBERS REFER TO REPORT PAGES

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The recommendations listed above can be incorporated into a 3-5 year program.

00. We recommend our Extended Warranty Program to ensure the tank is maintained on a yearly basis.....$19,168 yearly
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A sample maintenance agreement is enclosed in this packet

BASED ON THE NUMBER OF ITEMS ACCEPTED, PRICES MAY VARY.
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The inspection report and comments reflect the general condition of the tank. However, we can not guarantee that additional deficiencies may not become apparent during the cleaning, repair or paint process of the tank. It is recommended that $15,000 be set aside for latent defects.

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Liquid Engineering Corporation

Potable Water Reservoir Contamination, Health and Safety Report

Job No. 24286 Utility Charlestown Tank 1.5mg Stnl On-grade

Inspector A. Olson Team Leader T. Spurling Date 8/21/04 **Form 1**

Complies With: AWWA • OSHA • ANSI • NIOSH • NAVFAC • NFPAC

• Contamination & Health Checklist •

Air Vents	Type: mushroom # 1 Screen Conditions: Good (Fair) Poor
Hatches	Type: Round # 1 Secured Properly: (Yes) No Properly Sealed: Yes (No)
Exterior Overflow	Flapper: Yes (No) Screen: (Yes) No Gasket: Yes (No) Condition: Good (Fair) Poor
Cathodic Covers	Covers in Place: (Yes) No Gaskets: Yes No Properly Sealed: Yes No # of Covers 25
Roof to Wall Joint	Welded: (Yes) No Properly Sealed: (Yes) No
Roof Integrity	Holes: Yes (No) Cracking: Yes (No) Standing Water: (Yes) No Other: Soft Spots
Wall Integrity	Holes: Yes (No) Cracking: Yes (No) Other:
Manway Integrity	Leaks: Yes (No) Condition: Good Fair (Poor)
Water Clarity	General Appearance: Fair Odor: none Other:
Floating Surface Debris	Type: none observed Source:
~~Hypalon Floating Cover~~	Condition: Good Fair Poor Holes: Yes No Tears: Yes No
Telemetry Penetrations	Properly Sealed: Yes No
Other Discrepancies	

• Facility Safety Compliance Checklist •

Exterior Ladder

Overall Ladder	Condition: Good (Fair) Poor Offset Landings Yes / (No) #: Height:
Ladder Vandal Guard	Present: Yes / No / (None) Vandal Guard Locked: Yes / No
Ladder Rails & Rungs	Condition: (Good) Fair Poor Missing/Damaged Rungs: Yes (No)
Rung Spacing & Depth	Spacing: 11½ in. *(max 12")* Toe depth: 9½ in. *(min. 7")*
Rail Spacing & Size	Width: 2" in. *(min 2")* Thickness: ½ in. *(min. ¼")* Rail to Rail: 15½ in. *(max 16")*
Safety Climb System	Type: (Cage) Notched Rail Cable Grab Other None Condition: (Good) Fair Poor
Number & Locations	Wall 1 Leg Roof Riser Pipe Other
Ladder Attachments	(Welded) (Bolted) Other

Manways

Type and Size	Type: (Round) Oval Square Other Size: 24" *(24" - 18"X22" min.)* # 1
Support Structure	Dogged (Davit Arm) (Bolted) Other Condition: Good Fair (Poor)
Number & Locations	Wall 1 Roof Riser Pipe Other

Hatches

Hatch Type and Size	(Round) Square Rectangle Other *(24" - 24"X15" min.)* 24"
Hatch & Lid Lip Height	Hatch *(4" min.)* 5" Lid *(2" min.)* 2"

Balconies & Railing

Deck/Walkways	Condition: Good Fair Poor Width:
Hand Rails	Condition: Good Fair Poor Height *(42" min.)* No. Rails *(min. 2)*
Toe Rail	Condition: Good Fair Poor Height *(4" min.)*
Welds/Attachments	Condition: Good Fair Poor

Roof

Safety Tie-Off Points	Condition: Good Fair Poor # Ø
Antennas	Types: Transmitting- *Point to Point / Omni Directional* Receiving #

Other Discrepancies

Additional Information

DISCLAIMER

Unless otherwise noted, the findings contained in this report were neither prepared nor reviewed by a licensed Professional Engineer, but are based on the experience, training and *visual examination* of the inspecting Dive Maintenance Technician.

Liquid Engineering Corporation

Steel Potable Water Reservoir Inspection Report

Job No. 24286 Utility Charlestown Water Dept. Tank 1.5mg Steel On-grade

AMERICAN WATER WORKS ASSOCIATION
ANSI/AWWA M42 / D101-53 (R86)

SSPC Legend
Society for Protective Coatings

RUST GRADE	DESCRIPTION
10	No rusting, or < 0.01% of surface is rusted
9	Minute rusting, < 0.03% of surface is rusted
8	Few isolated rust spots, < 0.1% of surface is rusted
7	Few isolated rust spots, < 0.3% of surface is rusted
6	Extensive rust spots, < 1% of surface is rusted
5	Rusting to the extent of 3% of surface area
4	Rusting to the extent of 10% of surface area
3	Approximately 1/6th of the surface (17%) is rusted
2	Approximately 1/3rd of the surface (33%) is rusted
1	Approximately ½ of the surface (50%) is rusted
0	Approximately 100% of the surface is rusted

NACE Legend
National Association of Corrosion Engineers

CORROSION GRADE	DESCRIPTION
A	None
B	Uniform Surface Corrosion
C	Pitting
D	Concentration Cell
E	Galvanic
F	Stress Corrosion Cracking
G	Erosion Corrosion
H	Intergranular
I	Dealloying

AWS Legend
American Welding Society

WELD GRADE	DESCRIPTION
L	Satisfactory
M	Spatter
N	Porosity
O	Convexity / Concavity
P	Cracks
Q	Inclusions
R	Incomplete Fusion
S	Incomplete Penetration
T	Undercut
U	Underfill
V	Overlap
W	Unable to Evaluate

INTERIOR RESERVOIR ROOF1

	QUADRANT 1			QUADRANT 2			QUADRANT3			QUADRANT 4		
	SSPC	NACE	AWS	SSPC	NACE	AWS	SSPC	NACE	AWS	SSPC	NACE	AWS
Vents	5	B,D	L									
Roof Panels	7	D	W	7	D	W	5	D	W	5	D	W
Roof Support Structure	2	B,D	W	2	B,D	W	2	B,D	W	2	B,D	W
Roof Support Gussets												
Painting Ring												

ctive Coating — Good (Fair) Poor: Blistering - Chalking - Checking - Cracking (Delamination) - Growth - Pinholes - Staining - Saggs/Runs

Blisters / Avg. Size _____ Pitting / Avg. Size _____

INTERIOR RESERVOIR WALLS1

	QUADRANT 1			QUADRANT 2			QUADRANT3			QUADRANT 4		
	SSPC	NACE	AWS	SSPC	NACE	AWS	SSPC	NACE	AWS	SSPC	NACE	AWS
Wall to Roof Weld	1	B	W	1	B	W	1	B	W	1	B	W
Lower Ring Panels	6	B,C	L	6	B,C	L	6	B,C	L	6	B,C	L
Middle Ring Panels	6	B,C	L	6	B,C	L	6	B,C	L	6	B,C	L
Upper Ring Panels	8	B,C	L	8	B,C	L	8	B,C	L	8	B,C	L
Interior Ladder												

Protective Coating — Good Fair (Poor) (Blistering) Chalking - Checking - Cracking - Delamination - Growth - Pinholes (Staining) - Saggs/Runs

Blisters / Avg. Size ½" Pitting / Avg. Size 1/16

INTERIOR RESERVOIR FLOOR1

	QUADRANT 1			QUADRANT 2			QUADRANT3			QUADRANT 4		
	SSPC	NACE	AWS	SSPC	NACE	AWS	SSPC	NACE	AWS	SSPC	NACE	AWS
Perimeter Weld	2	B	L		Unable		To	Evaluate				
Floor Sketches (Panels)	1	B	W		Due To		Sediment					

Protective Coating — Good Fair (Poor) (Blistering) Chalking - Checking - Cracking (Delamination) - Growth - Pinholes (Staining) Saggs/Runs

(Blisters) Avg. Size 1 Pitting / Avg. Size _____

Liquid Engineering Corporation

Steel Potable Water Reservoir Inspection Report

Job No. 24286 Utility Charlestown Water Dept. Tank 1.5Mg Steel On-grad

INTERIOR RESERVOIR SUPPORT COLUMNS1

	QUADRANT 1			QUADRANT 2			QUADRANT3			QUADRANT 4		
	SSPC	NACE	AWS	SSPC	NACE	AWS	SSPC	NACE	AWS	SSPC	NACE	AWS
Column Structures	5	B	W	5	B	W	5	B	W	5	B	W
Column Base Structure	Unable			TO			Evaluate					
Column To Roof Stucture	6	B,D	W	6	B,D	W	6	B,D	W	6	B,D	W

Protective Coating: Good Fair (Poor): Blistering - Chalking - Checking - Cracking (Delamination) - Growth - Pinholes - (Staining) - Saggs/Runs

Blisters / Avg. Size _____ Pitting / Avg. Size _____

INTERIOR RESERVOIR PLUMBING COMPONENTS

	QUADRANT 1			QUADRANT 2			QUADRANT3			QUADRANT 4		
	SSPC	NACE	AWS	SSPC	NACE	AWS	SSPC	NACE	AWS	SSPC	NACE	AWS
Inlet Plumbing										1	B	L
Outlet Plumbing										1	B	L
Manways										Ø	B	L
Floor Drains												
Interior Overflows							2	B	W			

EXTERIOR RESERVOIR ROOF1

	QUADRANT 1			QUADRANT 2			QUADRANT3			QUADRANT 4		
	SSPC	NACE	AWS	SSPC	NACE	AWS	SSPC	NACE	AWS	SSPC	NACE	AWS
Vents	5	B,D	L									
[illegible] Panels	Ø	B	L	Ø	B	L	Ø	B	L	Ø	B	L
[illegible]ess Hatches	Ø	B	L									

Protective Coating: Good Fair Poor: Blistering - Chalking - (Checking) - Cracking - (Delamination) - Growth - Pinholes - (Staining) - Saggs/Runs

Blisters / Avg. Size _____ Pitting / Avg. Size _____

EXTERIOR RESERVOIR WALLS1

	QUADRANT 1			QUADRANT 2			QUADRANT3			QUADRANT 4		
	SSPC	NACE	AWS	SSPC	NACE	AWS	SSPC	NACE	AWS	SSPC	NACE	AWS
Wall to Roof Weld	1	B	L	1	B	L	1	B	L	1	B	L
Lower Ring Panels	Ø	B	L	Ø	B	L	Ø	B	L	Ø	B	L
Middle Ring Panels	Ø	B	L	Ø	B	L	Ø	B	L	Ø	B	L
Upper Ring Panels	Ø1	B	L	Ø1	B	L	Ø	B	L	Ø	B	L
Interior Overflows							2	B	W			

Protective Coating: Good Fair (Poor): Blistering - Chalking - (Checking) - Cracking - (Delamination) - Growth - Pinholes - Staining - Saggs/Runs

Blisters / Avg. Size _____ Pitting / Avg. Size _____

FOOTINGS / FOUNDATION1

Footings / Foundations Satisfactory Yes Cracking Hairl Spalling None Erosion/Exposed Aggregate Present

Anchor Bolts N/A Satisfactory _____ Loose _____ Rusted / Corroded _____ (If Excessive) Diameter = _____

TOWER SUPPORT STRUCTURES1

Tower Legs / Columns Satisfactory _____ Alignment _____ Settling _____ Rust / Corrosion _____

Riser Pipe Satisfactory _____ Alignment / Settling N/A Frost Casing _____ Rusted / Corroded _____

[illegible]ls & Turnbuckles Satisfactory _____ Turnbuckle Tension N/A Rod Tension _____ Cotter Pins/Rod Nuts _____

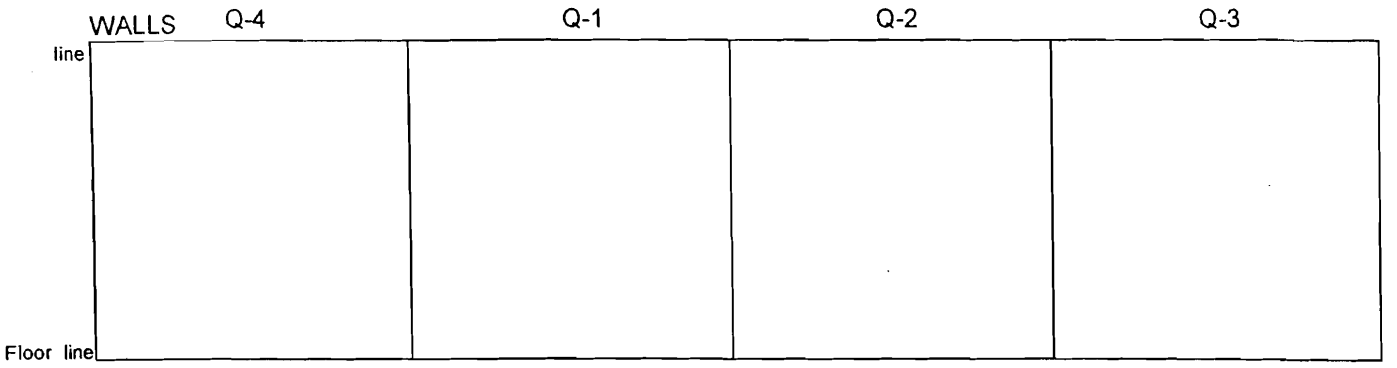
[illegible], shoes / Brackets Satisfactory _____ Coating _____ Rusted / Corroded _____ Pitting / Cracking _____

[illegible]ner _____

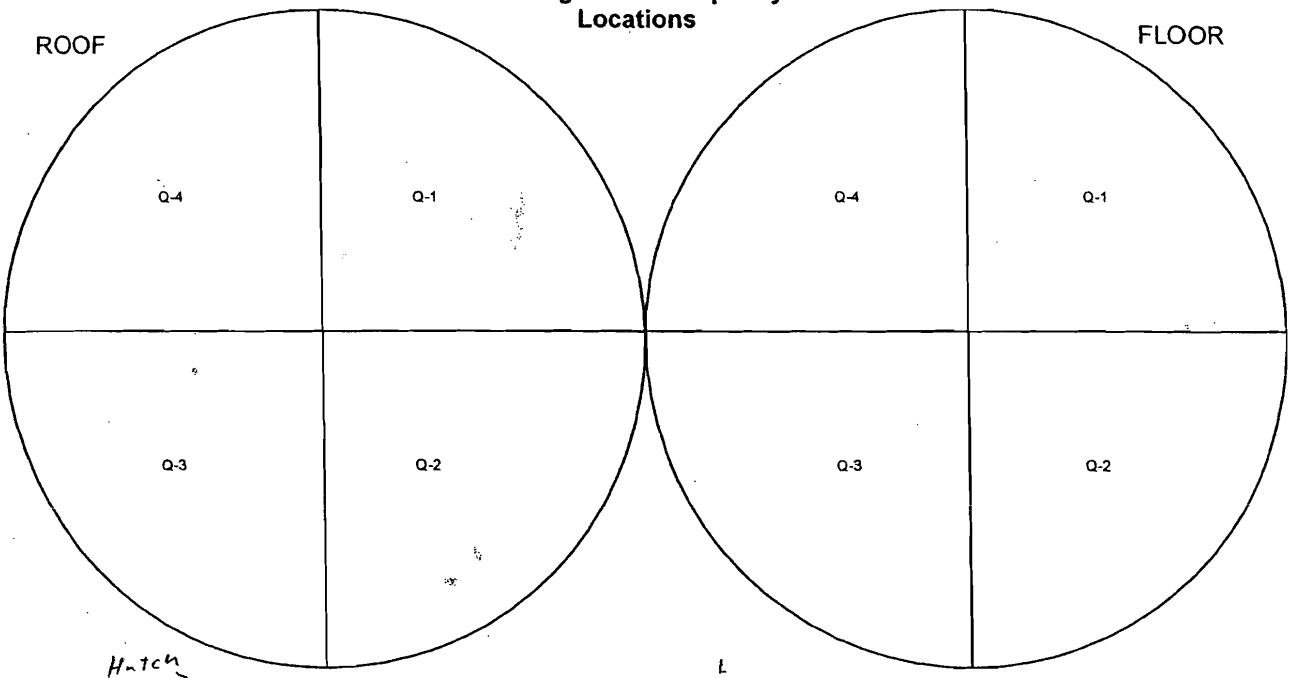
Liquid Engineering Corporation

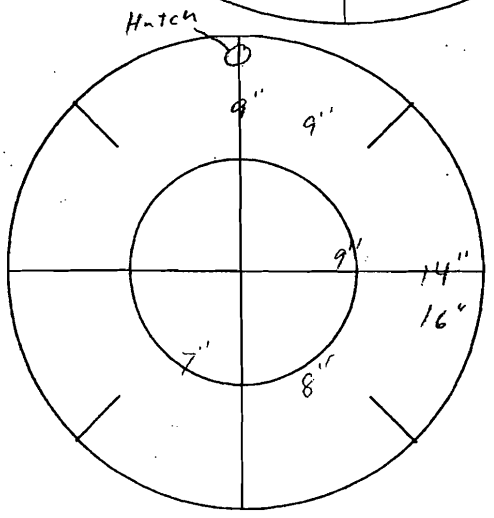
Circular Tank Diagram / Information Worksheet

Job# 24286 Tank Name: 1.5mg Steel On-grade Date: 8/21/04



Testing and Discrepancy Locations



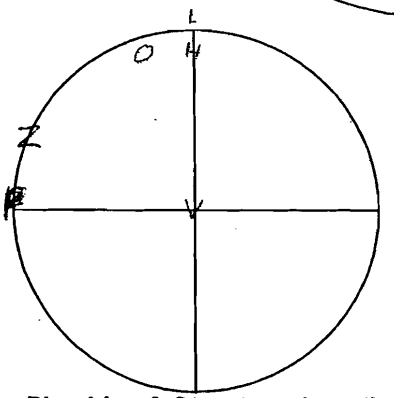


Sediment Depth Measurements

Average Sediment Depth= The sum of all measurements taken, divided by the number of measurements taken.

Average Sediment Depth:_____ Cubic Yardage:_____

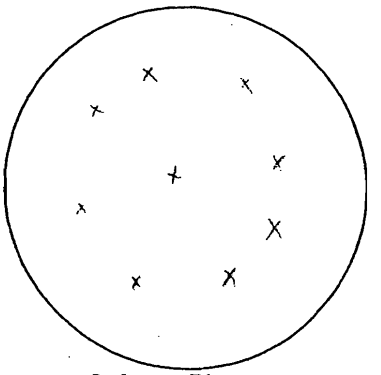
Type of Sediment: Iron Manganese



Plumbing & Structure Location

Plumbing and Structure Codes

O=Outlet X=Inlet Z=Manway
V=Vent D=Drain S=Sump
L=Ladder H=Hatch P=Overflow
F=Float level Indicator
T=Telemetry



Column Placement =+

Type of Column

Base Structure

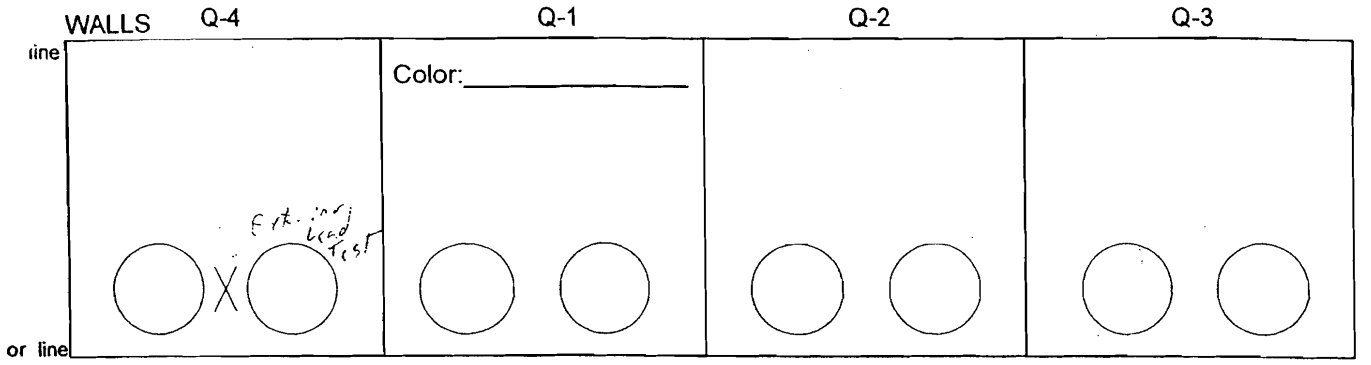
Top Structure

Steel Concrete Other:_____

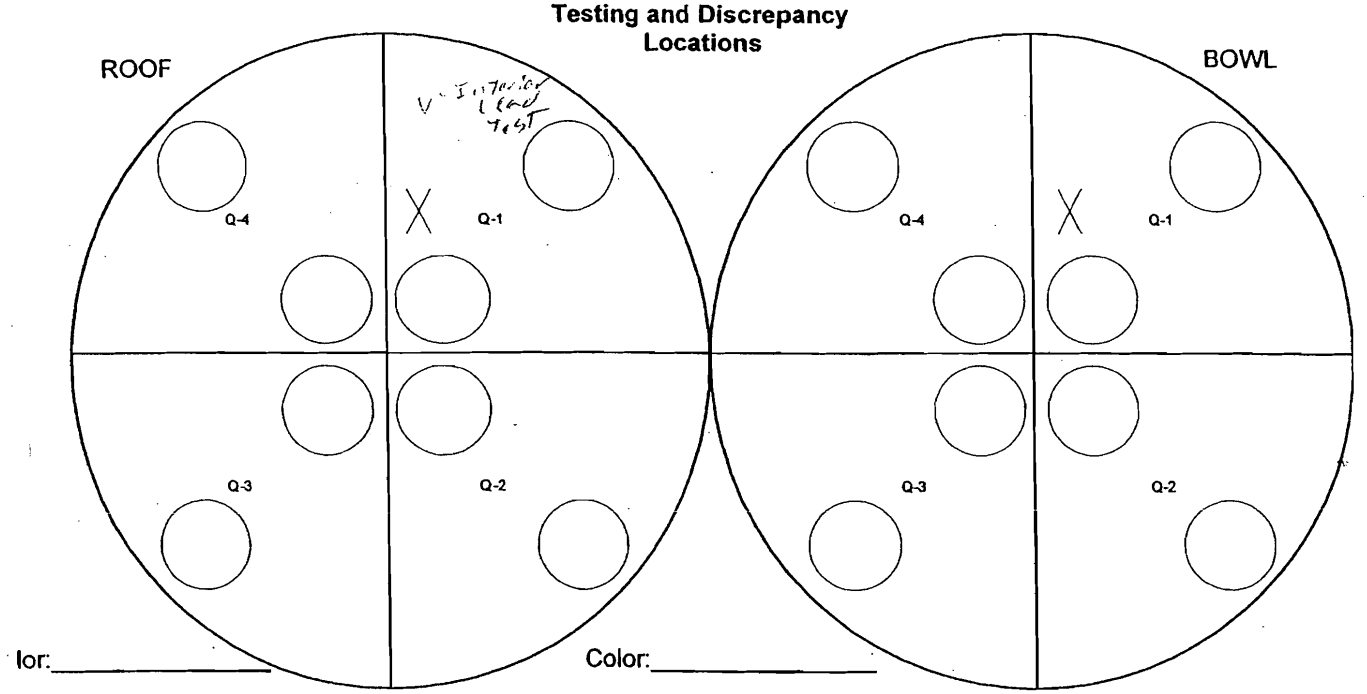
Liquid Engineering Corporation

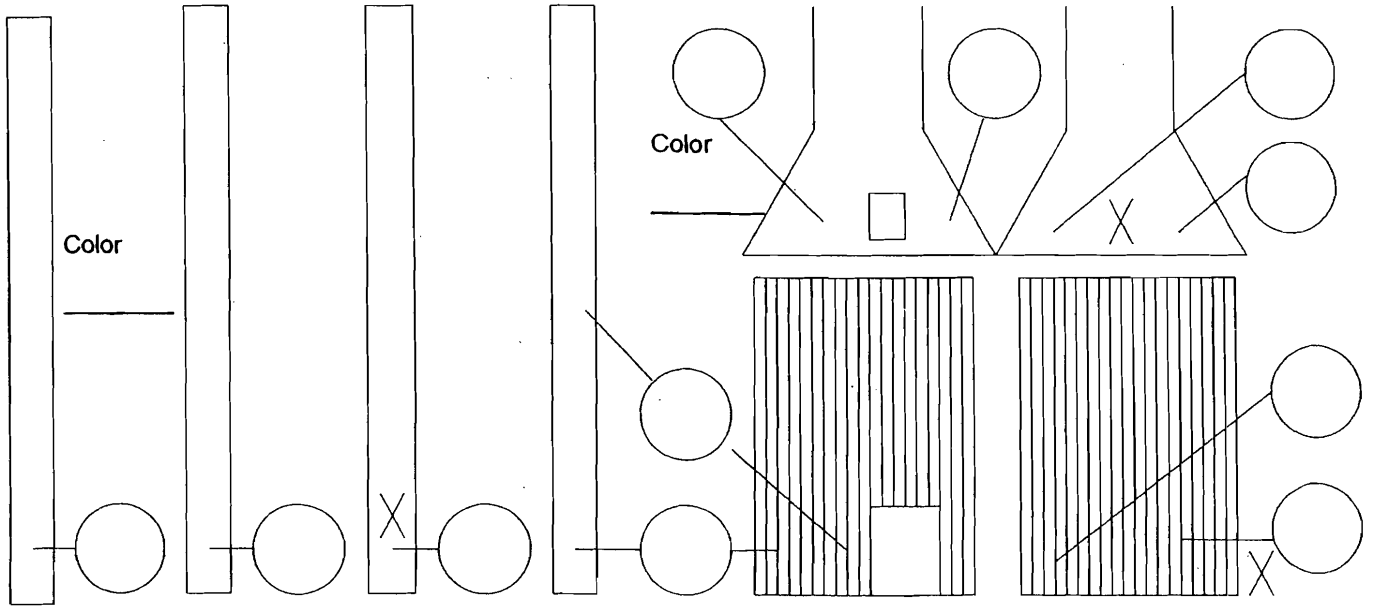
Circular Tank Diagram / NDT ☐ **DFT** ☐ **Coating Adhesion** ☐ **Presence of Lead** ☒

Job# 24286 Tank Name: 1.5mg Steel On-grade Date: 8/21/04



Testing and Discrepancy Locations





Liquid Engineering Corporation

Section 17: Immediate Needs Assessment

Job No.: 24286 Tank Name: 1.5mg Steel On-grade Date 8/21/04

Health & Safety Items

- ☐ Safety Climb System Installation: _____
- ☐ Vent Screen Repairs: _____

II. Testing Items

- ☐ Dye Testing For Leak Evaluation: _____
- ☑ Presence of Lead Test (Interior / Exterior): Completed-Passed

III. Destructive Testing Items

- ☐ % Of Lead Test (Interior / Exterior) *(Coating samples are removed for laboratory analysis)*: _____
- ☐ Coating Adhesion Testing (Interior / Exterior): _____

Specific written authorization required to perform destructive testing. Destructive tests include touch-up of coating system.

IV. Repair Items

- ☐ Epoxy Coating Repairs: _____
- ☐ Temporary Leak Repairs: _____
- ☐ Float Operated Level Indicator Repairs / Maintenance: _____
- ☐ Hypalon Repairs: _____

V. Security Related Items *(Critical security upgrade information is immediately available.)*

- ☒ Tank Vents Are Not Equipped With A Security Vent Shroud. _____
- ☒ Tank Hatches Are Not Equipped With A Security Hatch Locking Device. _____
- ☒ Tank Perimeter Not Adequately Secured: _____
- ☐ EPA - Mandated Vulnerability Assessment Not Completed: _____

Additional Description of Recommended Work

LEC's Team 13 Began The Cleaning Process And After A couple of Hours of Cleaning To Remove Sediment, The Utility Reps As well As The Mayor were Able To See The Condition Of The Wall Areas As well As A Sample Area of What The Floors Condition Is In, The Charlestown Water Dept. And LEC Team 13 Made An Agreement That we would Clean For 2 Full Bottom Times (200min) And Then The 3rd Diver would Perform An Inspection Of The Int. For The original Contract Amount which was Based on 2/3 of A day.

The above noted additional work is considered immediately necessary and recommended to be completed. Some items may be completed in conjunction with work currently being performed while the field crew is on site.

Authorized Utility Signature: _____

Signing above acknowledges that recommendations have been made for additional work that may be necessary and can be completed while the LEC crew is on site. Signing above does not authorize additional work. An additional work authorization will be prepared to authorize any additional work desired.

Liquid Engineering Corporation

Steel Water Reservoir Exterior Condition Worksheet

Job No.: 24286 Tank Name: 1.5mg Steel On-Grade Date 8/21/04

Section 9. General Tank Security

Is the tank surrounded by a security fence?	(Yes)	No
Are the access gates locked?	(Yes)	No
Is the tank equipped with a vandal guard on the primary access ladder?	Yes	(No)
Is the vandal guard locked?	Yes	No
Are all of the access hatches equipped with electronic monitoring devices?	Yes	(No)
Are all of the vents equipped with security vent shrouds?	Yes	(No)
Does the exterior of the tank show signs of trespass?	Yes	(No)
Does the surrounding geography of the tank obscure it from public view?	Yes	(No)
Are the external plumbing components housed in a secure vault or out building?	(Yes)	No
Is the area surrounding the tank well lit?	(Yes)	No
Are there any additional security features associated with this tank or surrounding area? If yes, describe in additional remarks section.	Yes	(No)

Additional Remarks and Measurements

OUCC DATA REQUEST #2

Indiana-American Water Company, Inc.
and
City of Charlestown

Cause No 44976

September 5, 2017

For Joint Petitioner City of Charlestown:

Q 2.1. The City of Charlestown's 2016 Water Utility Annual Report represents a current year depreciation expense of $53,494 (2016 Annual Report at F-3, column (d)).

Please provide the calculations the Charlestown Water Utility used to determine its 2016 depreciation expense as represented in the noted annual report. If Excel was used, please provide a copy of the Excel spread sheet with formulas intact.

Objection: The City objects to the Data Request on the basis of the foregoing general objections.

Response: Please see Attachment 2.1. The City utilizes a program called KeyAssets to maintain its capital assets ledger. KeyAssets calculates the amount of depreciation based upon the purchase date and type of asset.

Installed by the City of Charlestown, 0

Assets with Total Depreciation Report

Order by Location Name with no Salvage Date

Location WATER

Fund #	Dept #	Asset #	Location	Asset Name	Purchase Date	Check #	Serial #	Historical Cost	Salvage Value	% Depreciated	Prior Accum Depreciation	Depreciation This Year
601	601001	258	WATER	Scada System Antenna Hosp Tank	05/19/2002	0	INV# 240 RIVER CITY C	$8200.00	$0.00	10.0000	$8200.00	$0.00
	Subtotal							$8200.00	$0.00		$8200.00	$0.00
601	601001	21	WATER	1999 Case Backhoe 580L #5926	03/19/1999	0	JJG0245926	$60000.00	$0.00	10.0000	$60000.00	$0.00
601	601001	102	WATER	2006 Ford F250 5989	08/15/2005		1FTSX21P96EA15989	$29480.45	$0.00	10.0000	$29480.45	$0.00
601	601001	104	WATER	2005 Chev Dump Tr 3295	10/19/2005		1GBE4C1255F513295	$42790.00	$0.00	10.0000	$42790.00	$0.00
601	601001	105	WATER	2005 Trail King Trl 6908	09/22/2005		1TKC024264B046908	$9238.00	$0.00	10.0000	$9238.00	$0.00
601	601001	106	WATER	2005 Cat Backhoe 4536	05/18/2005		FDP24536	$66288.00	$0.00	10.0000	$66288.00	$0.00
	Subtotal	AUTOS						$207796.45	$0.00		$207796.45	$0.00
601	601001	137	WATER	Ins-building Water Company Chas. Landing	02/15/1938	0	EST COST	$8994.80	$0.00	2.0000	$8994.80	$0.00
601	601001	551	WATER	Pump Station & House	01/01/2008		Located at DA Inc.	$150000.00	$0.00	5.0000	$60000.00	$7500.00
	Subtotal	BUILDINGS						$158994.80	$0.00		$68994.80	$7500.00
601	601001	124	WATER	Rc-generator	10/15/2002	0	34698	$1500.00	$0.00	10.0000	$1500.00	$0.00
601	601001	131	WATER	Rc-wheeler Cast Iron Cutter 029828l	08/03/1997	0	029828L	$3000.00	$0.00	10.0000	$3000.00	$0.00
601	601001	132	WATER	Rc-hydro Stop	04/26/1993	0		$18000.00	$0.00	10.0000	$18000.00	$0.00
601	601001	134	WATER	Rc-briggs Straton Pump Model 553swt	09/17/1999	0	0980 91906	$1300.00	$0.00	10.0000	$1300.00	$0.00
601	601001	144	WATER	Rc-Water Tower Chas Land Road Rear Water	04/23/1938	0		$38000.00	$0.00	2.0000	$38000.00	$0.00
601	601001	145	WATER	Rc-Hospital Water Tower	11/24/1975	0		$51000.00	$0.00	2.0000	$41820.00	$1020.00
601	601001	241	WATER	Ac-water Meters	12/01/2001	0		$96754.85	$0.00	10.0000	$96754.85	$0.00
601	601001	450	WATER	Street Machine Kit w/software	06/08/2007		Meter Reader	$4100.00	$0.00	20.0000	$4100.00	$0.00
601	601001	451	WATER	Hershey Hot Rod EZ Reader	06/18/2007		Meter Reader	$4100.00	$0.00	20.0000	$4100.00	$0.00
601	601001	550	WATER	Radio Tansmitting Unit	01/01/2008		ELpro 905U1 RTU	$1641.00	$0.00	10.0000	$1312.80	$164.10
601	601001	554	WATER	Signal Loop Isolator	02/25/2008		Gospel Rd Water Tank	$1154.00	$0.00	10.0000	$923.20	$115.40
601	601001	688	WATER	1986 Fiat Allis Ditch Witch	10/13/2010		6B210B	$12500.00	$0.00	20.0000	$12500.00	$0.00

Assets with Total Depreciation Report

Order by Location Name with no Salvage Date

Location WATER

Fund #	Dept #	Asset #	Location	Asset Name	Purchase Date	Check #	Serial #	Historical Cost	Salvage Value	% Depreciated	Prior Accum Depreciation	Depreciation This Year
601	601001	704	WATER	Front End Loader	11/17/2010			$11000.00	$0.00	20.0000	$11000.00	$0.00
	Subtotal		EQUIPMENT					$244049.85	$0.00		$234310.85	$1299.50
601	601001	452	WATER	Charlestown Water Tank	10/21/2007		Gospel Road	$886191.00	$0.00	2.0000	$159514.38	$17723.82
	Subtotal		IMPROVEMENTS O/T BUILDINGS					$886191.00	$0.00		$159514.38	$17723.82
601	601001	79	WATER	Se-water Main 12 In 46,542 Ft. $38.68 Ft	06/01/1935	0		$1761561.00	$0.00	2.0000	$1761561.00	$0.00
601	601001	238	WATER	Se-water Pipes 60773 Ft 8in $34.54 Ft	06/01/1938	0		$2099099.42	$0.00	2.0000	$2099099.42	$0.00
601	601001	239	WATER	Se-water Pipes 6 In 18685 Ft 32.65 Ft	06/01/1938	0		$610065.25	$0.00	2.0000	$610065.25	$0.00
601	601001	240	WATER	Se- Water Pipes Pl/Ridge 24076.6ft $32.65ft	05/01/2002	0		$786101.00	$0.00	2.0000	$220108.20	$15722.02
601	601001	442	WATER	SLC Water Meters	05/01/2007			$96321.00	$0.00	20.0000	$96321.00	$0.00
601	601001	453	WATER	Water Tank Fence	10/21/2007		403 At Gospel Road	$11126.00	$0.00	5.0000	$5006.70	$556.30
601	601001	485	WATER	Water Lines (Park Street-Gospel	12/01/2007		2507- 003b	$234685.00	$0.00	2.0000	$42243.30	$4693.70
601	601001	493	WATER	Pitpads and Readers	07/06/2007		New Meters	$6089.00	$0.00	20.0000	$6089.00	$0.00
601	601001	496	WATER	SLC Water Meters	05/08/2007		131@ 136.34 plus parts	$18877.00	$0.00	20.0000	$18877.00	$0.00
601	601001	501	WATER	SLC Water Meters	05/25/2007		250@133.34	$33335.00	$0.00	20.0000	$33335.00	$0.00
601	601001	562	WATER	Danbury Oaks Water Meters	04/01/2008		Water Meters	$24358.00	$0.00	20.0000	$24358.00	$0.00
601	601001	564	WATER	Water Tank System	09/01/2008		Gospel Road	$299933.00	$0.00	2.0000	$47989.28	$5998.66
601	601001	748	WATER	Restoration of Water Tank Ctown Land	02/01/2011		Wells, Lines, & Tank	$233233.00	$0.00	0.0000	$0.00	$0.00
	Subtotal		INFRASTRUCTURE					$6214783.67	$0.00		$4965053.15	$26970.68
601	601001	60	WATER	Land Water Tower @ Water & Main In Alley	07/17/1937	0	18-8-0690	$1000.00	$0.00	0.0000	$0.00	$0.00
601	601001	138	WATER	Land 2.5 Acres Water Co. Chas Landing Rd	01/15/1938	0	EST COST	$1725.00	$0.00	0.0000	$0.00	$0.00
	Subtotal		LAND					$2725.00	$0.00		$0.00	$0.00
	Subtotal		WATER					$7722740.77	$0.00		$5643869.63	$53494.00
TOTAL:								$7722740.77	$0.00		$5643869.63	$53494.00

City of Charlestown – 1.5 MG Ground Storage Tank Aerials and Photos

Figure 1 - December 2002 – Aerial of Charlestown's 1.5 MG Ground Storage Tank showing extensive rusting of the roof and west half of the tank steel. Also shown is the Pump Building.

Figure 2 - March 2005 – Aerial of Charlestown's 1.5 MG Ground Storage Tank showing extensive rusting of the roof steel.

Figure 3 – June 2010 – Aerial of Charlestown's 1.5 MG Ground Storage Tank showing the progression of roof rusting. Note the standby generator south of the Pump Building (lower left).

Figure 4 – November 2013 – Aerial of Charlestown's 1.5 MG Ground Storage Tank showing the tank has been repainted. Note that the roof shows rust pockets at the roof-wall interface.

Figure 5 – September 2013 – Aerial of Charlestown's Pump Building and 1.5 MG Ground Storage Tank showing the tank roof rust pockets at the roof-wall interface.

Figure 6 - September 2016 – Oblique view of Charlestown's 1.5 MG Ground Storage Tank showing the repainted tank, Pump Building, and standby (nonfunctioning) generator (lower left).

Figure 7 – 1.5 MG Ground Storage Tank. Photo taken in 2005.

Figure 8 – 1.5 MG GST & Pump Bldg. Oct. 12, 2017 photo.

Figure 9 – 1.5 MG GST showing extensive rust. Photo taken in 2005.

Figure 10 – 1.5 MG Ground Storage Tank showing manway and roof access ladder.

Figure 11 – 1.5 MG GST. Oct. 12, 2017 photo.

Figure 12 – Photo of corrosion pitting. Oct. 12, 2017

Figure 13 – 1.5 MG GST showing rust streaks. Oct. 12, 2017

Figure 14 – 1.5 MG GST showing rust streaks. Photo taken in 2005.

OUCC DATA REQUEST #2

Indiana-American Water Company, Inc.
and
City of Charlestown

Cause No 44976

September 5, 2017

Q 2.7. Referring to Attachment GRH-2, at page GRH2-003, please describe the scope of the "on-site inspection" made by the appraisers.

Objection: The City objects to the Data Request on the basis of the foregoing general objections. The City objects to the Data Request on the basis that the Data Request seeks information not in the possession of the City and not within the personal knowledge of the City.

Response: While the City is not in possession of or have personal knowledge of information responsive to the Data Request, the City requested the appraisers to respond, and their response, for which the City makes no representations as to accuracy, is set forth below:

> On-site inspections were made on September 17, 2016 by Bob Carlson and Wes Christmas of Clark Dietz and Jeff Henson, Kent Elliott and Christina Uphaus from Banning Engineering and representatives of Saegesser Engineering. Representatives from Clark Dietz and Banning Engineering each spent approximately 4 hours on site, excluding travel time. Prior to this date, field work was performed by Banning Engineering to help verify quantities, age and locations of existing water mains, valves and hydrants.
>
> On-site inspections included review of system information with Utility personnel, visual inspection of the well field and wells, raw water storage tank, treatment facility, stand pipe and elevated tank.
>
> Treatment facility pumps, chemical feed systems, electrical and control systems, emergency power equipment and general site and building condition were all evaluated with respect to age, capacity and estimated remaining service life based on observed condition. The ground storage tank, elevated tank and stand pipe were evaluated based on age and external inspection of their present condition. On-site well field and well inspection was limited to site access and security.

OUCC DATA REQUEST #2

Indiana-American Water Company, Inc.
and
City of Charlestown

Cause No 44976

September 5, 2017

Q 2.8. In his prefiled verified direct testimony, Mayor G. Robert Hall discusses the appraisal of the City of Charlestown's water utility. Mayor Hall sponsors a copy of the appraisal as Attachment GRH-2.

What monetary amount did each appraisal firm charge for its work to appraise the City of Charlestown's water utility?

How many hours did each appraiser work to conduct his or her analysis?

Objection: The City objects to the Data Request on the basis of the foregoing general objections. The City objects to the Data Request on the basis that the Data Request seeks information not in the possession of the City and not within the personal knowledge of the City.

Response: Clark-Dietz charged $11,900 for the appraisal. Banning Engineering charged $9,600 for the appraisal. Mills, Biggs, Haire & Reisert charged $4,000 for the appraisal.

While the City is not in possession of or have personal knowledge of information responsive to the second half of the Data Request, the City requested the appraisers to respond, and their response, for which the City makes no representations of accuracy, is set forth below:

> Clark Dietz had 80 hours and Banning Engineering had 97.25 hours in preparation of the appraisal. These amounts do not include the upfront proposal time and travel time.

OUCC DATA REQUEST #2

Indiana-American Water Company, Inc.
and
City of Charlestown

Cause No 44976

September 5, 2017

Q 2.9. Refer to Table 1 on page GRH2-014 of Attachment GRH-2, specifically the column titled "Percent Depreciated."

Are the percentages listed for each Item based solely on the age of the specific plant? If no, on what else are the percentages based?

Objection: The City objects to the Data Request on the basis of the foregoing general objections. The City objects to the Data Request on the basis that the Data Request seeks information not in the possession of the City and not within the personal knowledge of the City.

Response: While the City is not in possession of or have personal knowledge of information responsive to the second half of the Data Request, the City requested the appraisers to respond, and their response, for which the City makes no representations as to accuracy, is set forth below:

Percent depreciated was based solely on the age of the specific plant.

OUCC DATA REQUEST #2

Indiana-American Water Company, Inc.
and
City of Charlestown

Cause No 44976

September 5, 2017

Q 2.10. Refer to Table 1 on page GRH2-014 of Attachment GRH-2, specifically the column titled "Percent Depreciated."

Do the individual percentages consider the specific condition of the plant being valued? If yes, how is the condition of the plant recognized in the appraisers' calculation? If no, why not?

Objection: The City objects to the Data Request on the basis of the foregoing general objections. The City objects to the Data Request on the basis that the Data Request seeks information not in the possession of the City and not within the personal knowledge of the City.

Response: While the City is not in possession of or have personal knowledge of information responsive to the second half of the Data Request, the City requested the appraisers to respond, and their response, for which the City makes no representations as to accuracy, is set forth below:

> Individual percentages take into consideration the estimated useful life of the various types of assets plant being evaluated. Had there been a reason to use a different percentage based upon the condition of the facilities toured that could have been considered. The facilities toured such as the water plant, water towers, ground storage tanks, and wells gave no indication that the assets had any value other than what would be typical based upon the age of the asset. Additionally, since many of the assets were underground and the scope did not include excavation of underground facilities, no changes in percent were made for those assets.

OUCC DATA REQUEST #2

Indiana-American Water Company, Inc.
and
City of Charlestown

Cause No 44976

September 5, 2017

Q 2.11. Refer to Table 1 on page GRH2-014 of Attachment GRH-2, specifically to the Distribution Mains portion and the column titled "Service Life."

The second line-item entry of '2-inch PVC' has an estimated service life of 76 years. The other line-item entries for each item show a service life of 75 years. Please explain this difference.

Objection: The City objects to the Data Request on the basis of the foregoing general objections. The City objects to the Data Request on the basis that the Data Request seeks information not in the possession of the City and not within the personal knowledge of the City.

Response: While the City is not in possession of or have personal knowledge of information responsive to the second half of the Data Request, the City requested the appraisers to respond, and their response, for which the City makes no representations as to accuracy, is set forth below:

> The use of 76 years was a typo in the appraisal. The net effect of changing the useful life from 76 years to 75 years for the 2 inch PVC would be a $1,074 reduction in the appraised value.

OUCC DATA REQUEST #2

Indiana-American Water Company, Inc.
and
City of Charlestown

Cause No 44976

September 5, 2017

Q 2.12. On page 13 of his prefiled verified direct testimony, Mayor G. Robert Hall states the City of Charlestown procured a $7.2 million guaranteed investment by Indiana-American Water Company, Inc. (Hall at 13:19) In addition, in his prefiled verified direct testimony, William A. Saegesser discusses $7.2 million worth of improvements to the City of Charlestown's water utility. (Saegesser at page 5)

Did the need for improvements decrease the results of the joint appraisal (Attachment GRH-2)? If yes, explain how (including any calculations) the need for improvements decreased the appraised value of the Charlestown water system. If no, explain why the need for improvements does not influence the value of the Charlestown water system.

Objection: The City objects to the Data Request on the basis of the foregoing general objections. The City objects to the Data Request on the basis that the Data Request seeks information not in the possession of the City and not within the personal knowledge of the City.

Response: While the City is not in possession of or have personal knowledge of information responsive to the Data Request, the City requested the appraisers to respond, and their response, for which the City makes no representations as to accuracy, is set forth below:

> No. As stated in the appraisal, the valuation is based upon a typical RCNLD calculation such as has been done historically in water and wastewater utility appraisals. RCNLD calculates the replacement cost less depreciation and does not include any calculations for improvements. Again, the use of RCNLD is standard industry practice for utility valuations in Indiana.

Q 7.15. In response to OUCC Data Request No. 2.7, in which the OUCC requested a description of the scope of the "on-site inspection" made by the appraisers, the City indicated it had no personal knowledge but provided a response it had requested from the appraisers.

a) Please state which appraiser provided the quoted response.

b) Please provide a copy of the written request to the appraiser that elicited the response provided.

c) Please provide in their entirety any and all responses received by the City from any of the appraisers regarding the response provided to OUCC Data Request No. 2.7.

d) Please provide any and all notes or reports of the on-site inspections prepared by each of the appraisers.

Objection: The City objects to the Data Request on the basis of the foregoing general objections. The City also specifically objects to the Data Request to the extent that it seeks documents or information not in the possession, custody, or control of the City.

Response: a) The City understands that the appraisers worked on the responses together and provided the responses to the City.

b) Please see Attachment (OUCC) 7.15.

c) Please see Attachment (OUCC) 7.15.

d) Please see Joint Petitioner's Exhibit 1, Attachment GRH-2. Please also see Attachment (OUCC) 3.3. The City is not in possession of other notes or reports prepared by the appraisers and objects to further requesting such information from the appraisers in accordance with the above-noted objection.

From: Wes E. Christmas [mailto:Wes.Christmas@clarkdietz.com]
Sent: Wednesday, August 30, 2017 5:25 PM
To: Bill Saegesser (Bill@SaegesserEngineering.com) <Bill@SaegesserEngineering.com>
Cc: Jeff Henson <jhenson@banning-eng.com>; Robert D. Carlson <Robert.Carlson@clarkdietz.com>
Subject: RE: Charlestown

Bill-

Jeff, Bob and I have discussed and developed the attached response to the questions from the OUCC. Please let us know if there is any additional information you need.

Wes E. Christmas, PE, ENV SP
Clark Dietz, Inc.
812.670.4120

From: Jeff Henson
Sent: Wednesday, August 30, 2017 2:41 PM
To: 'Wes E. Christmas' <Wes.Christmas@clarkdietz.com>; Robert D. Carlson <Robert.Carlson@clarkdietz.com>
Cc: Bill Saegesser (Bill@SaegesserEngineering.com) <Bill@SaegesserEngineering.com>
Subject: RE: Charlestown

I have two comments. I think we should avoid the discussion in 3 a and b about accelerating or decreasing depreciation on assets unless you have specific items that occurred on. If you state this, your next set of questions will be to list the assets you modified depreciation for and I am not aware of any on our side. Your example in b of a replacement just means that it now has a new useful life based upon its age but I don't remember making any adjustments because of condition, either up or down.

The question in 4 is answered with a value that would decrease the appraisal. I also gathered the wrong hours on the project so ours is slightly higher than yours since we did the deeper investigation of the customer list and got it more accurate.

That being the case I would modify Bob's answers to incorporate some of his answers and some of mine as below in red.

Let me know if you are all ok with this and I can get a clean copy to Bill.

Jeff Henson, CPA
VP of Operations
Banning Engineering PC
853 Columbia Rd, Suite 101 | Plainfield, IN 46168 | Ph: (317) 707-3731 | Cell: (317) 503-7899 | Fax: (317) 707-3631
jhenson@banning-eng.com | BanningEngineering.com

BANNING ENGINEERING
Over 20 Years of Making Your Project Our Priority

From: Wes E. Christmas [mailto:Wes.Christmas@clarkdietz.com]
Sent: Wednesday, August 30, 2017 12:05 PM
To: Jeff Henson <jhenson@banning-eng.com>; Robert D. Carlson <Robert.Carlson@clarkdietz.com>
Cc: Bill Saegesser (Bill@SaegesserEngineering.com) <Bill@SaegesserEngineering.com>
Subject: RE: Charlestown

Jeff-

Bob had already reviewed the questions and prepared the information below. You can incorporate as you see fit. I think Bob's comments are generally consistent with yours:

1. On site inspections were made on September 17, 2016 by Bob Carlson and Wes Christmas of Clark Dietz and **Jeff Henson, Kent Elliott and Christina Uphaus** from Banning Engineering and Saegasser Engineering. Representatives from Clark Dietz each spent approximately 4 hours on site, excluding travel time. Prior to this date, field work was performed by Banning Engineering to help verify quantities, age and locations of existing water mains, valves and hydrants.

   On site inspections included review of system information with Utility personnel, visual inspection of the well field and wells, raw water storage tank, treatment facility, stand pipe and elevated tank.

   Treatment facility pumps, chemical feed systems, electrical and control systems, emergency power equipment and general site and building condition were all evaluated with respect to age, capacity and estimated remaining service life based on observed condition. The ground storage tank, elevated tank and stand pipe were evaluated based on age and external inspection of their present condition. On site well field and well inspection was limited to site access and security.

2. 80 hours.

~~3.~~ (a): Percent depreciated was based on actual age adjusted for current condition. This comparison resulted in percent depreciation that reflectes remaining anticipated service life~~. Some items were given accelerated depreciation based on less than average condition while others reflect longer anticipated remaining service based on above average condition.~~

   a. (b): Individual percentages take into consideration the ~~specific condition~~ estimated useful life of the various types of assets ~~plant~~ being evaluated. ~~Items in better than average condition for their age were given a longer anticipated service life while items~~

~~in less than average condition for their age were adjusted down to reflect their estimated useful service life. For example, recent motor replacements on the high lift pumps is reflected in more stated remaining service life~~ . Had there been a reason to use a different percentage based upon the condition of the facilities toured that could have been considered. The facilities toured such as the water plant, water towers, ground storage tanks, and wells gave no indication that the assets had any value other than would be typical based upon the age of the asset. Additionally, since most of the assets were underground and the scope did not include excavation of underground facilities, no changes in percent were made.

4. ~~I see no reason for the difference. This difference may be a typo. 75 years can be used for both~~. The use of 76 years was a typo in the appraisal. The net effect of changing the useful life from 76 years to 75 years for the 2 inch PVC would be a $1,074 reduction in the appraised value

5. Needed improvements to the system are not reflected in our analysis. They neither increase or decrease the calculated value of the system. Needed improvements will be a future cost to whomever owns and operates the system. Deferred maintenance items that have resulted in assigning a lower anticipated remaining service life of various components are included in the analysis and therefore do influence the value of the system.

Wes E. Christmas, PE, ENV SP
Clark Dietz, Inc.
812.670.4120

From: Jeff Henson [mailto:jhenson@banning-eng.com]
Sent: Wednesday, August 30, 2017 11:55 AM
To: 'bill@saegesserengineering.com' <bill@saegesserengineering.com>; Robert D. Carlson <Robert.Carlson@clarkdietz.com>
Cc: Wes E. Christmas <Wes.Christmas@clarkdietz.com>
Subject: RE: Charlestown

Here are my responses in red. Wes and Bob, mark it up as you see fit to make changes. Please use track changes so that we can see your changes. I will be out of the office tomorrow but will be able to review your changes so that we can get these to Bill by end of the day tomorrow.

Jeff Henson, CPA
VP of Operations
Banning Engineering PC
853 Columbia Rd, Suite 101 | Plainfield, IN 46168 | Ph: (317) 707-3731 | Cell: (317) 503-7899 | Fax: (317) 707-3631
jhenson@banning-eng.com | BanningEngineering.com

BANNING ENGINEERING
Over 20 Years of Making Your Project Our Priority

From: bill@saegesserengineering.com [mailto:bill@saegesserengineering.com]
Sent: Monday, August 28, 2017 1:30 PM
To: Wes Christmas <wes.christmas@clark-dietz.com>; Jeff Henson <jhenson@banning-eng.com>
Cc: Casey Saegesser <casey@saegesserengineering.com>; Shane Spicer <shane@saegesserengineering.com>
Subject: Charlestown

Wes and Jeff,

Charlestown and Indiana American have filed a petition with IURC to allow Charlestown to sell its water distribution system to IAW. The OUCC has ask several questions which we cannot answer but hopefully you can. Please send us your responses to the following questions. You can invoice us for your time.

We need to respond to the OUCC questions by the end of this week, so any help that you can provide will be greatly appreciated. I understand that most of the questions are somewhat vague so please feel free to add any qualifying statements to your responses that you believe are appropriate.

Thanks,

Bill Saegesser

1. Please describe the scope of the on-site inspection made by the appraisers.
2. How many hours did each appraiser work to conduct the analysis?
3. With regard to "percent depreciated"...
    a. are the percentages listed for each item based solely on the age of the specific plant? If not, on what else are the percentages based?
    b. do the individual percentages consider the specific condition of the plant being valued? If yes, how is the condition of the plant recognized in the appraisers' calculation. If not, what not?
4. With regard to "service life"...The second line-item entry of '2-inch PVC' has an estimated service life of 76 years. The other line-item entries for each item show a service life of 75 years. Please explain this difference.
5. Did the need for improvements to the distribution system decrease the results of the appraisal? If yes, explain how (including any calculations) the need for improvements decreased the appraised value of the water system. If no, explain why the need for improvements does not influence the value of the water system.

SAEGESSER ENGINEERING, INC.
Civil Engineering and Land Surveying

William A. Saegesser
Saegesser Engineering, Inc.
88 West McClain Avenue
Scottsburg, Indiana 47170

O: 812.752.8123
F: 812.752.7271
C: 812.595.1439

www.SaegesserEngineering.com
Bill@SaegesserEngineering.com

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   On site inspections were made on September 17, 2016 by Bob Carlson and Wes Christmas of Clark Dietz and Jeff Henson, Kent Elliott and Christina Uphaus from Banning Engineering and representatives of Saegasser Engineering. Representatives from Clark Dietz and Banning Engineering each spent approximately 4 hours on site, excluding travel time. Prior to this date, field work was performed by Banning Engineering to help verify quantities, age and locations of existing water mains, valves and hydrants.

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4. With regard to "service life"...The second line-item entry of '2-inch PVC' has an estimated service life of 76 years. The other line-item entries for each item show a service life of 75 years. Please explain this difference.
   The use of 76 years was a typo in the appraisal. The net effect of changing the useful life from 76 years to 75 years for the 2 inch PVC would be a $1,074 reduction in the appraised value

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the appraised value of the water system. If no, explain why the need for improvements does not influence the value of the water system.

Needed improvements to the system are not reflected in our analysis. They neither increase nor decrease the calculated value of the system. Needed improvements will be a future cost to whomever owns and operates the system. Any potential deferred maintenance items that could resulted in assigning a lower anticipated remaining service life of various components were considered in the analysis and therefore do influence the value of the system.

From: bill@saegesserengineering.com
Sent: Monday, August 28, 2017 1:30 PM
To: Wes Christmas; Jeff Henson
Cc: Casey Saegesser; Shane Spicer
Subject: Charlestown

Wes and Jeff,

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Bill Saegesser

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From: Jeff Henson <jhenson@banning-eng.com>
Date: August 31, 2017 at 2:11:44 PM EDT
To: "'Wes E. Christmas'" <Wes.Christmas@clarkdietz.com>, "Bill Saegesser (Bill@SaegesserEngineering.com)" <Bill@SaegesserEngineering.com>
Cc: "Robert D. Carlson" <Robert.Carlson@clarkdietz.com>
Subject: RE: Charlestown

Bill,

After some further thought and some discussions with Wes, we have altered the answer to the question 5. If you have any questions, please contact me at your convenience.

Thanks

Jeff Henson, CPA
VP of Operations
Banning Engineering PC
853 Columbia Rd, Suite 101 | Plainfield, IN 46168 | Ph: (317) 707-3731 | Cell: (317) 503-7899 | Fax: (317) 707-3631
jhenson@banning-eng.com | BanningEngineering.com

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5. Did the need for improvements to the distribution system decrease the results of the appraisal? If yes, explain how (including any calculations) the need for improvements decreased

the appraised value of the water system. If no, explain why the need for improvements does not influence the value of the water system.

No. As stated in the appraisal, the valuation is based upon a typical RCNLD calculation such as has been done historically in water and wastewater utility appraisals. RCNLD calculates the replacement cost less depreciation and does not include any calculations for improvements. Again, the use of RCNLD is standard industry practice for utility valuations in Indiana.

Small Utility Accounting Manual

Water/Wastewater Division

In practice, many utilities use various depreciation rates based on the asset lives of the plant account group, which is a common error found on the utility Annual Report filings and in some rate case filings. For example, for office furniture, a depreciation rate of 5% may be used for an expected service life of 20 years or for a truck, a depreciation rate of 20% may be used based on a service life of five years. Neither of these rates is correct.

On the surface, it may seem illogical for a water utility to apply a 2% depreciation rate to vehicles and furniture knowing these assets will not last for 50 years (2% * 50 years = 100%). However, it is important to remember that the 2% composite rate is a combination of asset classes with various useful lives. For instance, transmission and distribution mains are depreciated over 75 years or 1.33%. Fire hydrants and water storage tanks are depreciated over 60 years, or 1.67%, while Transportation Equipment is depreciated over 7 years (14.29%) and Office Furniture and Equipment over 25 years (4%). When depreciation rates for each asset class is combined, a composite depreciation rate of 2% results. Thus, when applying the 2% rate to the Utility Plant in Service balance, Transportation Equipment is really being depreciated over 7 years.

To record monthly Depreciation Expense, subtract land costs from the total Utility Plant in Service balance, multiply the remaining balance by the appropriate composite depreciation rate listed on the previous page, then divide by 12 months. Thus, the accounting entry may appear as follows:

	Debit	Credit
Acct. 403 Depreciation Expense	$1,417	
Acct. 108 Accumulated Depreciation		$1,417
To record monthly depreciation expense.		

Calculation: Utility Plant(less land) x Depreciation rate= Depreciation Expense
$1,000,000 x 1.7% = $17,000/12 months = $1,417/month

Accumulated Depreciation

While Depreciation Expense is recorded on the Income Statement, its impact is recorded in a separate contra account on the Balance Sheet called Accumulated Depreciation, under Utility Plant in Service. Showing Accumulated Depreciation separately on the Balance Sheet has the effect of preserving the historical cost of assets on the Balance Sheet. The T-account below is a representation of Accumulated Depreciation showing the effect of the monthly entry above.

Accumulated Depreciation	
	$432,541
	1,417
	$433,958

Effect of Depreciation:

Income Statement: Depreciation Expense reduces Net Income.
Balance Sheet: Accumulated Depreciation reduces the net carrying value of the asset.
Retained Earnings is affected by Net Income.

Wisconsin Municipal Water Utilities
Benchmark Ranges of Depreciation Rates
Effective Date is January 1, 2008

Account Number	Account Title	Service Life Range of Years Min	Max	Net Salvage Range of Percents Min	Max	Recommeded Range of Deprec. Rates - Percents Min	Max	**Recommended Depreciation Rate**
	Source of Supply Plant							
311	Structures and Improvements	30	40	-15%	0%	2.5%	3.8%	**3.2%**
312	Collecting and Impounding Reservoirs	50	70	0%	0%	1.4%	2.0%	**1.7%**
313	Lake, River and Other Intakes	50	70	-5%	0%	1.4%	2.0%	**1.7%**
314	Wells and Springs	30	45	-10%	0%	2.2%	3.7%	**2.9%**
316	Supply Mains	50	75	-10%	0%	1.3%	2.2%	**1.8%**
317	Other Water Source Plant	20	25	0%	0%	4.0%	5.0%	**4.5%**
	Pumping Plant							
321	Structures and Improvements	30	40	-15%	0%	2.5%	3.8%	**3.2%**
323	Other Power Production Equipment	20	30	-10%	0%	3.3%	5.5%	**4.4%**
325	Electric Pumping Equipment	20	30	-10%	0%	3.3%	5.5%	**4.4%**
326	Diesel Pumping Equipment	20	30	-10%	0%	3.3%	5.5%	**4.4%**
328	Other Pumping Equipment	20	30	-10%	0%	3.3%	5.5%	**4.4%**
	Water Treatment Plant							
331	Structures and Improvements	30	40	-15%	0%	2.5%	3.8%	**3.2%**
332	Sand and Other Media Filtration Equipment	30	40	-20%	0%	2.5%	4.0%	**3.3%**
333	Membrane Filtration Equipment	15	20	-5%	0%	5.0%	7.0%	**6.0%**
334	Other Water Treatment Equipment	15	20	-5%	0%	5.0%	7.0%	**6.0%**
	Transmission and Distribution Plant							
341	Structures and Improvements	30	40	-15%	0%	2.5%	3.8%	**3.2%**
342	Distribution Reservoirs and Standpipes	50	65	-10%	0%	1.5%	2.2%	**1.9%**
343	Transmission and Distribution Mains	85	100	-10%	0%	1.0%	1.3%	**1.3%**
345	Services	45	60	-30%	0%	1.7%	2.9%	**2.9%**
346	Meters	16	25	0%	0%	4.0%	6.3%	**5.5%**
348	Hydrants	55	75	-20%	0%	1.3%	2.2%	**2.2%**
349	Other Transm. and Distribution Plant	15	30	0%	0%	3.3%	6.7%	**5.0%**
	General Plant							
390	Structures and Improvements	30	40	0%	0%	2.5%	3.3%	**2.9%**
391	Office Furniture and Equipment	15	20	0%	0%	5.0%	6.7%	**5.8%**
391.1	Computer Equipment	3	5	0%	0%	20.0%	33.3%	**26.7%**
392	Transportation Equipment	5	15	10%	25%	6.7%	20.0%	**13.3%**
393	Stores Equipment	15	20	0%	0%	5.0%	6.7%	**5.8%**
394	Tools, Shop and Garage Equipment	15	20	0%	0%	5.0%	6.7%	**5.8%**
395	Laboratory Equipment	15	20	0%	0%	5.0%	6.7%	**5.8%**
396	Power Operated Equipment	10	20	10%	25%	5.0%	10.0%	**7.5%**
397	Communication Equipment	5	10	0%	0%	10.0%	20.0%	**15.0%**
397.1	Communication Equipment - SCADA	10	12	0%	0%	8.3%	10.0%	**9.2%**
398	Miscellaneous Equipment	15	20	0%	0%	5.0%	6.7%	**5.8%**

NOTE 1: In the event any class of plant shall become fully depreciated by the use of these rates with due consideration for net salvage, if any, then no further accrual for such class of plant shall be made.

NOTE 2: The net salvage percentages listed with a negative sign indicate a negative net salvage.

NOTE 3: The recommended **Total Utility Composite** depreciation rate range is **2.0% to 2.5%**.

Cause No. 44992
Attachment GMV-1
1 of 3

Indiana American Water Company
Cause No 44992
Comparison of Current and Proposed Depreciation Accrual Rates on Utility Plant in Service Balances as of December 31, 2016

Line Number	Subsidiary Account	NARUC Account	Account Description	Utility Plant In Service Per Books 12/31/2016	Current Depreciation Expense: Total Current Annual Depreciation Rate	Current Depreciation Expense: Total Current Depreciation Expense	Proposed Depreciation Expense: Proposed Annual Depreciation Rate	Proposed Depreciation Expense: Total Proposed Depreciation Expense	Difference in Current vs Proposed Depreciation Expense
1	301000	301.10	Organization	$ 507,257.39	0.00%	$ -	0.00%	$ -	$ -
2	302000	302.10	Franchises	2,677.34	0.00%	-	0.00%	-	-
3	303200	303.20	Land and Land Rights SS	12,122,809.09	0.00%	-	0.00%	-	-
4	303300	303.20	Land and Land Rights P	134,753.62	0.00%	-	0.00%	-	-
5	303400	303.30	Land and Land Rights WT	2,748,268.87	0.00%	-	0.00%	-	-
6	303500	303.40	Land and Land Rights TD	2,803,076.42	0.00%	-	0.00%	-	-
7	303600	303.50	Land and Land Rights AG	629,734.57	0.00%	-	0.00%	-	-
8	304100	304.10	Struct & Improve SS	7,204,007.72	2.16%	155,606.57	3.22%	232,242.00	76,635.43
9	304200	304.20	Struct & Imp Pumping - Johnson County	4,058,379.00	2.58%	104,706.18	2.62%	106,430.00	1,723.82
10	304200	304.20	Struct & Imp Pumping - Carter Street	3,598,452.59	2.58%	92,840.08	2.59%	93,045.00	204.92
11	304200	304.20	Struct & Imp Pumping - Northwest	9,875,306.79	2.58%	254,782.92	2.82%	278,199.00	23,416.08
12	304200	304.20	Struct & Imp Pumping - Hertzsch and Babb	2,870,781.64	2.58%	74,066.17	2.69%	77,342.00	3,275.83
13	304200	304.20	Struct & Imp Pumping - Other	5,459,573.70	2.58%	140,857.00	2.31%	126,158.00	(14,699.00)
14	304300	304.30	Struct & Imp WT - Johnson County	5,688,776.95	3.10%	176,352.09	2.45%	139,203.00	(37,149.09)
15	304300	304.30	Struct & Imp WT - Carter Street	5,211,502.87	3.10%	161,556.59	2.85%	148,482.00	(13,074.59)
16	304300	304.30	Struct & Imp WT - White River and Buck Creek	4,853,731.80	3.10%	150,465.69	3.22%	156,289.00	5,823.31
17	304300	304.30	Struct & Imp WT - Northwest	20,372,644.68	3.10%	631,551.99	2.39%	486,829.00	(144,722.99)
18	304300	304.30	Struct & Imp WT - Middle Fork and Main Station	4,052,722.77	3.10%	125,634.41	2.69%	108,973.00	(16,661.41)
19	304300	304.30	Struct & Imp WT - Hertzsch and Babb	13,002,029.38	3.10%	403,062.91	2.50%	325,613.00	(77,449.91)
20	304300	304.30	Struct & Imp WT - Warsaw	4,587,342.60	3.10%	142,207.62	2.53%	116,275.00	(25,932.62)
21	304300	304.30	Struct & Imp WT - West Lafayette	8,282,595.53	3.10%	256,760.46	2.51%	208,212.00	(48,548.46)
22	304300	304.30	Struct & Imp WT - Other	6,387,283.92	3.10%	198,005.80	2.08%	133,220.00	(64,785.80)
23	304301	304.32	Struct & Imp WT Depr Pntng (IN)	197,248.24	7.54%	14,872.52	2.52%	4,971.00	(9,901.52)
24	304302	304.32	Struct & Imp WT WH Repaint	1,055,894.97	7.54%	79,614.48	2.52%	26,548.00	(53,066.48)
25	304310	304.30	Struct & Imp WT Paint	4,808,949.42	3.10%	149,077.43	2.08%	100,026.00	(49,051.43)
26	304312	304.32	Struct & Imp WT Wste Handl/Trm	5,085.58	7.54%	383.45	2.52%	128.00	(255.45)
27	304390	304.30	Struct & Imp WT Mix & Set Bldg	948,799.41	3.10%	29,412.78	2.08%	19,735.00	(9,677.78)
28	304391	304.30	Struct & Imp WT Pur Bldg (IN)	314,078.85	3.10%	9,736.44	2.08%	6,533.00	(3,203.44)
29	304392	304.30	Struct & Imp WT Wsh Wtr Twr Bl	-	3.10%	-	2.08%	-	-
30	304400	304.40	Struct & Imp TD	3,371,297.52	4.09%	137,886.07	2.77%	93,506.00	(44,380.07)
31	304500	304.50	Struct & Imp AG	6,674,559.34	3.54%	236,279.40	3.75%	250,556.00	14,276.60
32	304510	304.50	Struct & Imp AG Cap Lease	-	3.54%	-	3.75%	-	-
33	304600	304.60	Struct & Imp Offices	2,214,038.38	3.54%	78,376.96	3.66%	80,970.00	2,593.04
34	304610	304.60	Gen Structures - HVAC	1,815.87	3.54%	64.28	3.69%	67.00	2.72
35	304620	304.00	Struct & Imp Leasehold	354,242.48	7.68%	27,205.82	2.65%	9,403.00	(17,802.82)
36	304700	304.70	Struct & Imp Store,Shop,Garage	7,130,350.41	3.20%	228,171.21	2.08%	147,964.00	(80,207.21)
37	304800	304.80	Struct & Imp Misc	465,672.85	3.47%	16,158.85	1.45%	6,764.00	(9,394.85)
38	305000	305.00	Collect & Impounding	10,436,465.06	1.36%	141,935.92	1.24%	129,157.00	(12,778.92)
39	306000	305.00	Lake, River & Other Intakes - Northwest	46,000,607.23	1.66%	763,610.08	2.07%	951,495.00	187,884.92
40	306000	305.00	Lake, River & Other Intakes - Other	3,890,852.70	1.66%	64,588.15	2.36%	91,902.00	27,313.85
41	307000	307.00	Wells & Springs	16,153,080.72	2.90%	468,439.34	2.77%	447,309.00	(21,130.34)
42	308000	308.00	Infiltration Galleries & Tunnels	61,677.83	0.37%	228.21	10.59%	6,532.00	6,303.79
43	309000	309.00	Supply Mains	14,146,322.63	2.69%	380,536.08	1.42%	201,327.00	(179,209.08)
44	310000	310.10	Power Generation Equip	10,437,481.01	2.86%	298,511.96	2.28%	237,654.00	(60,857.96)
45	311200	311.20	Pump Equipment Electric	37,730,884.67	3.24%	1,222,480.66	1.39%	522,755.00	(699,725.66)
46	311250	311.20	Pump Equipment Electric TD	-	3.24%	-	1.39%	-	-
47	311300	311.30	Pump Equipment Diesel	677,079.33	3.69%	24,984.23	4.39%	29,695.00	4,710.77
48	311350	311.30	Pump Equipment Diesel TD	-	3.69%	-	4.39%	-	-
49	311400	311.40	Pump Equipment Hydraulic	67,635.59	4.83%	3,266.80	2.12%	1,433.00	(1,833.80)
50	311500	311.50	Pump Equipment Other	599,757.17	3.24%	19,432.13	3.00%	17,993.00	(1,439.13)
51	311520	311.50	Pump Equipment SS	7,432,288.75	3.24%	240,806.16	3.00%	222,784.00	(18,022.16)
52	311530	311.50	Pumping Equipment WT	163,856.00	3.24%	5,308.93	3.00%	4,916.00	(392.93)

Cause No. 44992
Attachment GMV-1
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Indiana American Water Company
Cause No 44992
Comparison of Current and Proposed Depreciation Accrual Rates on Utility Plant in Service Balances as of December 31, 2016

Line Number	Subsidiary Account	NARUC Account	Account Description	Utility Plant In Service Per Books 12/31/2016	Current Depreciation Expense: Total Current Annual Depreciation Rate	Current Depreciation Expense: Total Current Depreciation Expense	Proposed Depreciation Expense: Proposed Annual Depreciation Rate	Proposed Depreciation Expense: Total Proposed Depreciation Expense	Difference in Current vs Proposed Depreciation Expense
53	311540	311.50	Pumping Equipment TD	320,762.94	3.24%	10,392.72	3.00%	9,623.00	(769.72)
54	320100	320.10	WT Equipment Non-Media	80,885,095.19	4.15%	3,356,731.45	2.31%	1,868,992.00	(1,487,739.45)
55	320190	320.19	WT Equipment Set Basin,Clear Well	11,486,046.15	4.15%	476,670.92	2.69%	308,975.00	(167,695.92)
56	320191	320.19	WT Equipment Filter Plant Piping (IN)	16,936,210.23	4.15%	702,852.72	2.69%	454,266.00	(248,586.72)
57	320192	320.19	WT Equipment Wash Water Tank (IN)	205,340.66	4.15%	8,521.64	2.69%	5,524.00	(2,997.64)
58	320193	320.19	WT Equipment Chemical Feed (IN)	9,462,629.91	4.15%	392,699.14	2.69%	254,545.00	(138,154.14)
59	320200	320.20	WT Equipment Filter Media	4,532,332.02	4.15%	188,091.78	9.40%	425,958.00	237,866.22
60	330000	330.00	Dist Reservoirs & Standpipes	38,169,390.23	3.13%	1,194,701.91	2.01%	765,496.00	(429,205.91)
61	330001	330.00	Tank Repainting	-	3.13%	-	2.69%	-	-
62	330002	330.98	Dist Res & Stand Orig Paint (P	476,988.08	3.13%	14,929.73	11.69%	55,760.00	40,830.27
63	330003	330.98	Dist Res & Stand Orig Repaint	12,770,078.95	3.13%	399,703.47	11.69%	1,492,503.00	1,092,799.53
64	330100	330.10	Elevated Tanks & Standpipes	11,683,140.26	3.13%	365,682.29	2.01%	234,831.00	(130,851.29)
65	330200	330.20	Ground Level Facilities	5,093,722.97	3.13%	159,433.53	2.01%	102,384.00	(57,049.53)
66	331001	331.01	TD Mains Not Classified by Size	641,661,828.46	1.64%	10,523,253.99	1.70%	10,907,818.00	384,564.01
67	331200	331.20	TD Mains 6in to 8in	1,861,770.71	1.64%	30,533.04	1.70%	31,650.00	1,116.96
68	332000	332.00	Fire Mains	1,000.00	1.64%	16.40	1.00%	10.00	(6.40)
69	333000	333.00	Services	137,704,831.24	4.09%	5,632,127.60	3.59%	4,940,499.00	(691,628.60)
70	334100	334.10	Meters	19,894,482.72	6.15%	1,223,510.69	5.20%	1,034,240.00	(189,270.69)
71	334110	334.11	Meters Bronze Case	27,309,285.11	7.44%	2,031,810.81	6.17%	1,686,230.00	(345,580.81)
72	334120	334.12	Meters Plastic Case	9,397,706.09	5.25%	493,379.57	8.80%	827,043.00	333,663.43
73	334130	334.13	Meters Other	8,415,789.02	6.15%	517,571.02	4.48%	377,432.00	(140,139.02)
74	334131	334.13	Meters Other-Rem Rdr Unts	5,890,329.96	6.15%	362,255.29	4.48%	263,887.00	(98,368.29)
75	334200	334.20	Meter Installations	53,420,500.36	2.84%	1,517,142.21	2.45%	1,310,890.00	(206,252.21)
76	334201	334.20	Meter Installation Other	2,710,137.08	2.84%	76,967.89	2.45%	66,398.00	(10,569.89)
77	334300	334.30	Meter Vaults	11,160,015.21	2.84%	316,944.43	14.79%	1,650,189.00	1,333,244.57
78	335000	335.00	Hydrants	56,831,809.91	3.81%	2,165,291.96	2.25%	1,279,225.00	(886,066.96)
79	339100	339.10	Other Plant & Equipment SS	-	6.05%	-	3.49%	-	-
80	339300	339.30	Other Plant & Equipment WT	11,057.31	6.05%	668.97	3.49%	386.00	(282.97)
81	339500	339.50	Other Plant & Equipment TD	93,900.03	6.05%	5,680.95	11.53%	10,831.00	5,150.05
82	339600	339.60	Other Plant & Equipment CPS	112,057.28	4.23%	4,740.02	0.00%	-	(4,740.02)
83	340100	340.10	Office Furniture & Equipment	217,439.57	5.99%	13,024.63	0.00%	-	(13,024.63)
84	340100	340.10	Office Furniture & Equipment	1,897,573.51	5.99%	113,664.65	5.00%	1,461.62	(112,203.03)
85	340210	340.21	Comp & Periph Mainframe	348,949.86	18.08%	63,090.13	0.00%	-	(63,090.13)
86	340210	340.21	Comp & Periph Mainframe	12,055.40	18.08%	2,179.62	20.00%	(47,306.46)	(49,486.08)
87	340220	340.22	Comp & Periph Personal	620,376.72	17.81%	110,489.09	0.00%	-	(110,489.09)
88	340220	340.22	Comp & Periph Personal	958,731.10	17.81%	170,750.01	20.00%	(390,693.44)	(561,443.45)
89	340230	340.23	Comp & Periph Other	1,266,117.37	17.83%	225,748.73	0.00%	-	(225,748.73)
90	340230	340.23	Comp & Periph Other	7,278,541.50	17.83%	1,297,763.95	20.00%	1,290,198.15	(7,565.80)
91	340240	340.24	Comp & Periph Capital Lease	-	18.08%	-	20.00%	(6,466.38)	(6,466.38)
92	340300	340.30	Computer Software	24,048,744.14	7.69%	1,849,348.42	10.00%	2,627,621.92	778,273.50
93	340310	340.31	Comp Software Mainframe	331,803.47	21.30%	70,674.14	0.00%	-	(70,674.14)
94	340310	340.31	Comp Software Mainframe	730,333.31	21.30%	155,561.00	20.00%	(611,632.38)	(767,193.38)
95	340320	340.32	Comp Software Personal	308,583.27	19.87%	61,315.50	0.00%	(109,545.93)	(170,861.43)
96	340325	340.35	Comp Software Customized	1,066,301.67	17.32%	184,683.45	0.00%	-	(184,683.45)
97	340325	340.35	Comp Software Customized	2,455,957.66	17.32%	425,371.87	20.00%	512,099.04	86,727.17
98	340330	340.33	Comp Software Other	342,518.79	17.32%	59,324.25	0.00%	-	(59,324.25)
99	340330	340.33	Comp Software Other	355,537.05	17.32%	61,579.02	20.00%	46,493.97	(15,085.05)
100	340500	340.50	Other Office Equipment	33,812.16	9.62%	3,252.73	0.00%	-	(3,252.73)
101	340500	340.50	Other Office Equipment	21,144.62	9.62%	2,034.11	6.67%	(234.59)	(2,268.70)
102	341100	341.10	Trans Equip Lt Duty Trks	1,352,764.47	9.09%	122,966.29	4.12%	55,800.00	(67,166.29)
103	341200	341.20	Trans Equip Hvy Duty Trks	1,871,628.81	7.29%	136,441.74	6.53%	122,199.00	(14,242.74)
104	341300	341.30	Trans Equip Autos	2,725,256.59	9.38%	255,629.07	12.52%	341,081.00	85,451.93

Cause No. 44992
Attachment GMV-1
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Indiana American Water Company
Cause No 44992
Comparison of Current and Proposed Depreciation Accrual Rates on Utility Plant in Service Balances as of December 31, 2016

Line Number	Subsidiary Account	NARUC Account	Account Description	Utility Plant In Service Per Books 12/31/2016	Current Depreciation Expense: Total Current Annual Depreciation Rate	Current Depreciation Expense: Total Current Depreciation Expense	Proposed Depreciation Expense: Proposed Annual Depreciation Rate	Proposed Depreciation Expense: Total Proposed Depreciation Expense	Difference in Current vs Proposed Depreciation Expense
105	341400	341.40	Trans Equip Other	1,017,173.95	5.42%	55,130.83	12.75%	129,656.00	74,525.17
106	342000	342.00	Stores Equipment	15,962.41	3.80%	606.57	0.00%	-	(606.57)
107	342000	342.00	Stores Equipment	98,259.35	3.80%	3,733.86	4.00%	(390.62)	(4,124.48)
108	343000	343.00	Tools,Shop,Garage Equip	178,615.38	5.73%	10,234.66	0.00%	-	(10,234.66)
109	343000	343.00	Tools,Shop,Garage Equip	5,862,497.32	5.73%	335,921.10	4.00%	49,271.13	(286,649.97)
110	343100	343.10	Tools,Shop,Garage Equip-Othr	-	5.73%	-	4.00%	-	-
111	344000	344.00	Laboratory Equipment	311,867.30	8.71%	27,163.64	0.00%	-	(27,163.64)
112	344000	344.00	Laboratory Equipment	1,066,252.21	8.71%	92,870.57	6.67%	(20,286.85)	(113,157.42)
113	345000	345.00	Power Operated Equipment	1,329,751.83	2.95%	39,227.68	2.25%	29,864.00	(9,363.68)
114	346000	346.00	Comm Equip Not Classified	89,748.29	7.26%	6,515.73	6.67%	(175,904.01)	(182,419.74)
115	346100	346.10	Comm Equip Non-Telephone	1,198,242.12	7.26%	86,992.38	6.67%	79,923.00	(7,069.38)
116	346100	346.10	Comm Equip Non-Telephone	350,005.14	7.26%	25,410.37	0.00%	-	(25,410.37)
117	346190	346.10	Remote Control & Instrument	8,764,560.27	7.26%	636,307.08	6.67%	584,596.00	(51,711.08)
118	346200	346.20	Comm Equip Telephone	134,510.10	7.26%	9,765.43	6.67%	8,972.00	(793.43)
119	347000	347.00	Misc Equipment	161,382.35	3.76%	6,067.98	0.00%	-	(6,067.98)
120	347000	347.00	Misc Equipment	4,753,301.18	3.76%	178,724.12	5.00%	291,636.82	112,912.70
121			**Subtotal - Water Plant in Service:**	$ 1,541,868,269.57		$ 46,781,695.36		$ 41,522,633.00	$ (5,259,062.36)
122	353200	353.20	WW Land & Ld Rights Collect	$ 631.00	0.00%	$ -	0.00%	$ -	$ -
123	353400	353.40	WW Land & Ld Rights Treatmnt	350.08	0.00%	-	0.00%	-	-
124	354200	354.20	WW Struct & Imp Collection	21,824.36	3.82%	833.69	2.61%	569.00	(264.69)
125	354400	354.40	WW Struct & Imp Treatment	23,717.69	3.82%	906.02	3.13%	743.00	(163.02)
126	354500	354.50	WW Struct & Imp General	121,208.19	3.82%	4,630.15	2.57%	3,121.00	(1,509.15)
127	355400	355.40	WW Pwr Gen Equip Treatment	1,685.75	3.82%	64.40	3.16%	53.00	(11.40)
128	355500	355.50	WW Pwr Gen Equip RWTP	44,631.02	5.01%	2,236.01	3.16%	1,411.00	(825.01)
129	361100	361.10	WW Collecting Mains	737,639.96	1.71%	12,613.64	4.60%	33,962.00	21,348.36
130	361101	361.10	WW Collecting Mains Other	387,080.57	1.71%	6,619.08	4.60%	17,807.00	11,187.92
131	363000	363.00	WW Services Sewer	18,320.34	3.45%	632.05	2.67%	490.00	(142.05)
132	364000	364.00	WW Flow Measuring Devices	76,647.14	9.55%	7,319.80	5.05%	3,874.00	(3,445.80)
133	371100	371.10	WW Pump Equip Elect	53,301.45	3.45%	1,838.90	3.70%	1,973.00	134.10
134	371200	371.20	WW Pump Equip Oth Pwr	1,470.33	3.45%	50.73	2.72%	40.00	(10.73)
135	380450	380.40	WW TD Equip Oth Sew Rem	71,840.68	2.82%	2,025.91	6.98%	5,014.00	2,988.09
136	380500	380.50	WW TD Equip Chem Trmt Plt	101,235.92	2.82%	2,854.85	6.98%	7,063.00	4,208.15
137	380600	380.60	WW TD Equip Oth Disp	8,436.40	2.82%	237.91	6.98%	589.00	351.09
138	380625	380.60	WW TD Equip Gen Trmt	1,426.33	2.82%	40.22	6.98%	100.00	59.78
139	381000	381.00	WW Plant Sewers	13,558.50	2.82%	382.35	1.95%	265.00	(117.35)
140	394000	394.00	WW Laboratory Equipment	7,702.05	5.01%	385.87	6.67%	1,124.60	738.73
141	396000	396.00	WW Communication Equip	10,827.74	7.26%	786.09	6.67%	652.20	(133.89)
142	397000	397.00	WW Misc Equipment	34,677.19	5.01%	1,737.33	5.00%	1,914.20	176.87
143	398000	398.00	WW Other Tangible Plant	-	0.00%	-	0.00%	-	-
144			**Subtotal - Wastewater Plant in Service:**	$ 1,738,212.69		$ 46,195.00		$ 80,765.00	$ 34,570.00
145			**Grand Totals:**	$ 1,543,606,482.26		$ 46,827,890.36		$ 41,603,398.00	$ (5,224,492.36)

Parks, James

From: Rick Layton <rlayton@covalen.com>
Sent: Monday, September 25, 2017 1:29 PM
To: Parks, James
Cc: Jim Wary
Subject: Aquastore Proposal 25170925RL3 IOOUCC Jim Parks
Attachments: Aquastore Proposal 25170925RL3 IOOUCC Jim Parks.pdf

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Mr. Parks

See attached requested information. Please feel free to contact me with questions you may have.

Thank You,
Richard Layton
Southern Region Covalen
812 447 0738 Mobile
317 789 8966 Ext.2650
317 789 8967 Fax

covalen
smart infrastructure.

Representing: AQUASTORE® TANKS

09/25/2017

MR: Jim Parks
Indiana Office of Utility Consumer Council
115 West Washington Street.
Indianapolis IN 46204

RE: Budget pricing

Jim,

Thank you for your interest in AQUASTORE® storage tanks. This budgetary proposal is in reply to your request for a budget price on CST AQUASTORE® water storage tanks

AQUASTORE® Tank standard model 9033 water Ground storage tank with aluminum dome, roof structure, with standard tank accessories I.e.24" bottom Manway. Standard concrete slab and pipe stub outs.

90' X 33' 1,554,000 Gallon..... $828,000.00
(Exact dimensions) 89.51 X 33.01 (Gallons per Foot), 47,091 (Cost per gallon) $.053

DESIGN CONDITIONS AWWA D103-97 design standard.
Stored Contents: Water Storage
Specific Gravity: 1.0
PH Range: 3.0 to 10.0
Storage Temperature: Ambient
Wind Speed: 100 MPH @ Shape Factor of 0.6
Seismic: IBC 2006
Snow Load: 25 PSF
Soil Bearing: 3,000 PSF minimum
Frost Depth: 36"
Included:

- Excavation of ringwall foundation
- Reinforced concrete ringwall foundation and floor Concrete encased DIP inlet-outlet lines stubbed out 5' from tank, 24" Manway
- PVC (schedule 80) overflow with stainless steel screened base end
- Passive, sacrificial anode cathodic protection system

covalen
smart infrastructure.

- Non-prevailing wage, open-shop installation labor
- Concrete testing by independent lab
- Hydrostatic testing with disinfection

Not included:

- Access road and site preparation
- Yard piping and vault
- Bonds/permits
- Level sensing-measuring equipment
- Rock excavation of foundation *(if encountered)*
- Indiana prevailing wage rates
- Hauling of concrete debris from tank site
- Indiana sales tax

Installed budget pricing: SEE ABOVE BREAKDOWN

Please feel free to contact me with any questions or further needs.

Sincerely,

Rick Layton

Southern Region Sales
Covalen Inc.
Indianapolis Indiana

Parks, James

From: Casey Cornett <Casey.Cornett@phoenixtank.com>
Sent: Wednesday, October 04, 2017 12:15 PM
To: Parks, James
Subject: Re: New submission from Contact Us

Yes sir, we keep records of our tanks in our engineering archives.

Sent from my iPhone

On Oct 4, 2017, at 12:12 PM, Parks, James <JParks@oucc.IN.gov> wrote:

> Thanks Casey,
> For the 0.5 MG elevated tank, are those dimensions the same as the tank Phoenix installed in 2006-07? In Charlestown?
>
> Jim

James T. Parks, P.E.
Utility Analyst II
Indiana Office of Utility Consumer Counselor
115 W. Washington Street, Suite 1500 South
Indianapolis, IN 46204
(317) 232-2766
Toll-free: (888) 441-2494
Fax: (317) 232-5923
jparks@oucc.in.gov


Please keep this email paperless

From: Casey Cornett [mailto:Casey.Cornett@phoenixtank.com]
Sent: Wednesday, October 04, 2017 10:35 AM
To: Parks, James <JParks@oucc.IN.gov>
Subject: FW: New submission from Contact Us

Jim,
Per your request, please see below.

I cannot provide a budgetary number on any of the ground storage tanks since these are not our specialty.

.5MG Multi-Column -$985,000 (146'-3" high water level, 50' diameter, 37'-2" head range)

Casey Cornett
Sr. Estimator / Sales Manager
317-271-7002 ext. 2241
Direct: 317-737-2937
317-273-1154 FAX
Phoenix Fabricators and Erectors, LLC.
182 South County Road 900 East
Avon, IN 46123-8973
Email: casey.cornett@phoenixtank.com
EEO/AA Employer

<image001.jpg>

From: webmaster@dbd15.com [mailto:webmaster@dbd15.com]
Sent: Wednesday, October 4, 2017 9:32 AM
To: Sales <Sales@phoenixtank.com>
Subject: New submission from Contact Us

Name

Jim Parks

Company

IN Office of Utility Consumer Counselor

jparks@oucc.in.gov

(317) 232-2766

Good morning,
I'm looking for budgetary pricing for welded steel potable water storage tanks in Charlestown IN in the following sizes and types.
1. Ground storage tank - 0.5 MG, 1.0 MG & 1.5 MG options to replace a 1.5 MG existing tank (with existing dimensions of 80.5 feet diameter x 40 feet high).

2. 0.5 MG multi column elevated tank (same as the one Phoenix installed in 2006 or 2007 in Charlestown IN).
I am not purchasing a tank. These budgetary prices are being used to evaluate acquisition costs for the transfer of the Charlestown water utility.
Since Phoenix installed the 0.5 MG elevated tank, I thought your company would have direct knowledge that would be helpful (tank design, tank height, dimensions, etc.).
Thank you for any help you can provide.

Parks, James

From: Dennis Davis <ddavis@watertank.com>
Sent: Wednesday, October 18, 2017 3:39 PM
To: Parks, James
Cc: Rick DiZinno
Subject: RE: Storage Tank Budget Pricing - Charlestown, Indiana

James,

For budget purposes:

52' x 32' (500,000 gallon)
$350,000.00 tank
$65,000.00 foundation

Have a great day,

PITTSBURG TANK & TOWER GROUP
Since 1919

Dennis Davis
Regional Sales Manager
Pittsburg Tank & Tower Group

Ground Tank Division

PO Box 517 Henderson, KY 42419

P: 270-826-9000 Ext: 2603 | C: 270-860-9645 F: 270-831-6963

www.pttg.com

From: Parks, James [mailto:JParks@oucc.IN.gov]
Sent: Wednesday, October 18, 2017 12:54 PM
To: Dennis Davis <ddavis@watertank.com>
Subject: RE: Storage Tank Budget Pricing - Charlestown, Indiana

Good afternoon Dennis,
Thanks for sending the cost quote.

Could you please send me a budgetary cost for a nominal 500,000 gallon ground storage tank? I am writing testimony regarding the Charlestown acquisition and discussing replacing the existing 1.5 MG raw water GST with two smaller side by side 500,000 gallon tanks that would provide maintenance flexibility.

Thank you

Jim

James T. Parks, P.E.
Utility Analyst II
Indiana Office of Utility Consumer Counselor
115 W. Washington Street, Suite 1500 South
Indianapolis, IN 46204
(317) 232-2766
Toll-free: (888) 441-2494
Fax: (317) 232-5923
jparks@oucc.in.gov

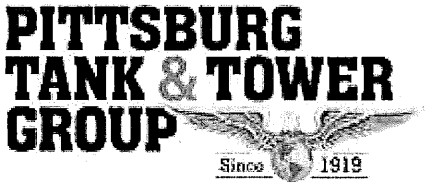
Please keep this email paperless

From: Dennis Davis [mailto:ddavis@watertank.com]
Sent: Tuesday, October 17, 2017 1:01 PM
To: Parks, James <JParks@oucc.IN.gov>
Cc: Rick DiZinno <rdd@pittsburgtank.com>
Subject: Storage Tank Budget Pricing - Charlestown, Indiana

Jim,

Thank you for the opportunity to provide the attached budget pricing for the (3) storage tanks in Charlestown, Indiana. If you have any questions or require any additional information, please give me a call at any time.

Have a great day,



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PITTSBURG TANK & TOWER GROUP
GROUND DIVISION Since 1919

1 Watertank Place
PO Box 517
Henderson, KY 42419
P: (270) 826-9000
F: (270) 215-5722
www.pttg.com

October 17, 2017 Proposal #DD9181

Indiana Office of Utility Consumer Counselor
115 W. Washington St., Suite 1500
Indianapolis, IN 46204

Attn: Jim Parks, Utility Analyst

Re: Budget Pricing
80'6" x 40' (1,500,000 gallon) Welded Ground Storage Tank
20' x 109' (250,000 gallon) Welded Standpipe
50' x 146'3" HWL (500,000 gallon) Multi Column Elevated Storage Tank

Thank you for the opportunity to provide the following budget pricing to design, furnish, fabricate, erect and paint the above referenced welded carbon steel storage tanks complete with concrete foundations in Charlestown, Indiana. Our foundation prices are based on 4000 psf at 5' below grade.

The tank interiors will be coated with an epoxy system and the exteriors will be coated with an epoxy/urethane system in accordance with AWWA. The tanks include standard fittings and accessories. Our prices are based on open shop, non-prevailing wage labor.

80'6" x 40' (1,500,000 gallon) Ground Storage Tank	**$775,000.00**
Concrete Foundation	**$115,000.00**
20' x 109' (250,000 gallon) Standpipe	**$392,500.00**
Concrete Foundation	**$85,000.00**
50' x 146'3" HWL (500,000 gallon) Elevated Storage Tank	**$900,000.00**
Concrete Foundation	**$150,000.00**

If you have any questions or require any additional information, please feel free to give me a call at 270-826-9000 ext. 2603.

Sincerely,

Dennis Davis
Regional Sales Manager
270-826-9000 ext. 2603
270-860-9645 cell
270-831-6963 direct line/fax line
ddavis@pttg.com

cc: Rick DiZinno, Vice President

Figure 1 Standpipe (10/12/17 photos)

Figure 2 Standpipe rust and coating failure

Figure 3 Standpipe rust.

Figure 4 Standpipe overflow pipe.

Figure 5 Rusted welds and plate steel (10/12/17 photos)

Figure 6 Surface rust and pitting including chine corrosion (bottom).

Figure 7 Standpipe lower section with coating failure and corrosion.

Figure 8 1978 Manufacturer plate – Caldwell Tanks, Louisville, KY

500,000 Gallon Elevated Water Tank Photos (2007 Gospel Road Tank)

Figure 1 Elevated Water Tank (10/12/17 photos)

Figure 2 Elevated Water Tank – multi-column legs and fill pipe.

Figure 3 Elevated Water Tank – view from underneath

Figure 4 2007 Manufacturer plate – Phoenix Fabricators, Indpls., IN

Water Treatment and High Service Pump Building Photos

Figure 1 Pump Building entrance (10/12/17 photos)

Figure 2 Pump Building – view of north side.

Figure 3 Pump Bldg – view from the east side. Generator is at left.

Figure 4 Pump Building Motor Control Center

Water Treatment and High Service Pump Building Photos

Figure 5 High service pump and motor, chemical feed in corner.

Figure 6 High service pumps and motor, overhead discharge pipe.

Figure 7 High service pump (red) and motor, Clearitas tank

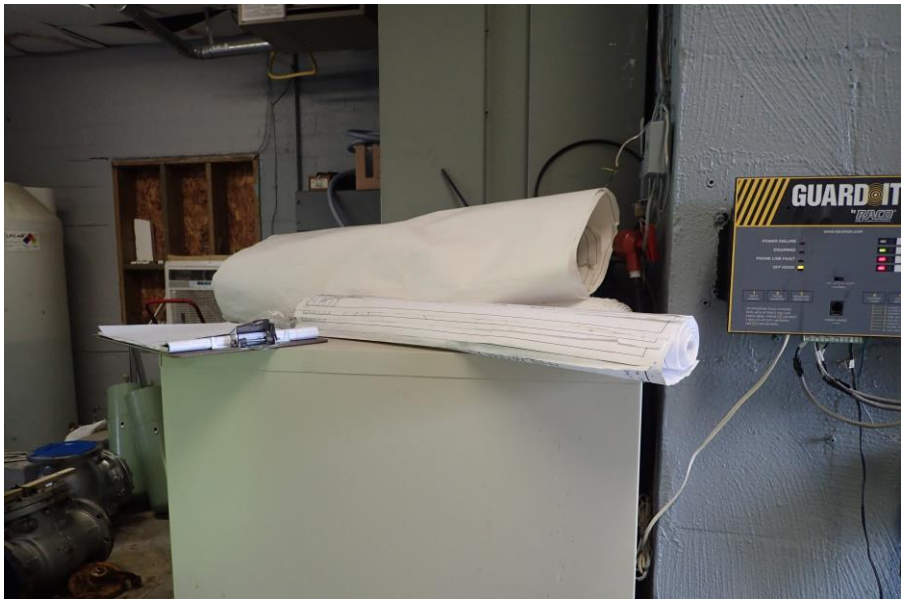


Figure 8 Pump building – storage of record drawings

Charlestown Water Services Present Value Calculations
OUCC calculations of customers and services added per year since 1937

Services Useful Life	60	**Years**	
Services Cost - single	$ 1,300	**dual**	$ 1,350

					Services					Present Value		
Year	**Census Pop.**	**Cust.**	**Use**	**Cust. Added**	**Single**	**Dual**	**Total Services**	**Service Line Age (years)**	**% Depr.**	**Single Service Lines**	**Dual Service Lines**	**Source of Customer Data**
1937		100-160	130	130	119.6	3.3	123	79	95%	$ 7,774	$ 219	News article
1938			140	10	9.2	0.3	9	78	95%	$ 598	$ 17	
1939			150	10	9.2	0.3	9	77	95%	$ 598	$ 17	
1940	939		170	20	18.4	0.5	19	76	95%	$ 1,196	$ 34	
1941			400	230	211.6	5.8	217	75	95%	$ 13,754	$ 388	400 homes by year end
1942			1150	750	250.0	250	500	74	95%	$ 16,250	$ 16,875	750 def. worker homes
1943			1200	50	46.0	1.3	47	73	95%	$ 2,990	$ 84	
1944			1250	50	46.0	1.3	47	72	95%	$ 2,990	$ 84	
1945			1300	50	46.0	1.3	47	71	95%	$ 2,990	$ 84	
1946			1360	60	55.2	1.5	57	70	95%	$ 3,588	$ 101	
1947			1420	60	55.2	1.5	57	69	95%	$ 3,588	$ 101	
1948			1480	60	55.2	1.5	57	68	95%	$ 3,588	$ 101	
1949			1540	60	55.2	1.5	57	67	95%	$ 3,588	$ 101	827 Fed. Housing
1950	4785		1600	60	55.2	1.5	57	66	95%	$ 3,588	$ 101	
1951			1625	25	23.0	0.6	24	65	95%	$ 1,495	$ 42	
1952			1650	25	23.0	0.6	24	64	95%	$ 1,495	$ 42	
1953			1675	25	23.0	0.6	24	63	95%	$ 1,495	$ 42	
1954		1700	1700	25	23.0	0.6	24	62	95%	$ 1,495	$ 42	News article
1955			1713	13	12.2	0.3	12	61	95%	$ 790	$ 22	
1956			1726	13	12.2	0.3	12	60	95%	$ 790	$ 22	
1957			1740	13	12.2	0.3	12	59	95%	$ 790	$ 22	
1958			1753	13	12.2	0.3	12	58	95%	$ 790	$ 22	Added
1959			1766	13	12.2	0.3	12	57	95%	$ 790	$ 22	1,100
1960	5726		1779	13	12.2	0.3	12	56	93%	$ 1,054	$ 30	customers

Charlestown Water Services Present Value Calculations
OUCC calculations of customers and services added per year since 1937

Services Useful Life	60	**Years**	
Services Cost - single	$ 1,300	**dual**	$ 1,350

					Services					Present Value		
Year	**Census Pop.**	**Cust.**	**Use**	**Cust. Added**	**Single**	**Dual**	**Total Services**	**Service Line Age (years)**	**% Depr.**	**Single Service Lines**	**Dual Service Lines**	**Source of Customer Data**
1961			1793	13	12.2	0.3	12	55	92%	$ 1,317	$ 37	over 7
1962			1806	13	12.2	0.3	12	54	90%	$ 1,580	$ 45	years
1963			1819	13	12.2	0.3	12	53	88%	$ 1,844	$ 52	
1964			1832	13	12.2	0.3	12	52	87%	$ 2,107	$ 59	
1965			1845	13	12.2	0.3	12	51	85%	$ 2,371	$ 67	
1966			1859	13	12.2	0.3	12	50	83%	$ 2,634	$ 74	
1967			1872	13	12.2	0.3	12	49	82%	$ 2,897	$ 82	
1968			1885	13	12.2	0.3	12	48	80%	$ 3,161	$ 89	
1969			1898	13	12.2	0.3	12	47	78%	$ 3,424	$ 97	
1970	5933		1911	13	12.2	0.3	12	46	77%	$ 3,688	$ 104	
1971			1925	13	12.2	0.3	12	45	75%	$ 3,951	$ 111	
1972			1938	13	12.2	0.3	12	44	73%	$ 4,214	$ 119	
1973			1951	13	12.2	0.3	12	43	72%	$ 4,478	$ 126	
1974			1964	13	12.2	0.3	12	42	70%	$ 4,741	$ 134	
1975			1978	13	12.2	0.3	12	41	68%	$ 5,005	$ 141	
1976			1991	13	12.2	0.3	12	40	67%	$ 5,268	$ 149	
1977			2004	13	12.2	0.3	12	39	65%	$ 5,532	$ 156	
1978			2017	13	12.2	0.3	12	38	63%	$ 5,795	$ 164	
1979			2030	13	12.2	0.3	12	37	62%	$ 6,058	$ 171	
1980	5596		2044	13	12.2	0.3	12	36	60%	$ 6,322	$ 178	
1981			2057	13	12.2	0.3	12	35	58%	$ 6,585	$ 186	
1982		2,070	2070	13	12.2	0.3	12	34	57%	$ 6,849	$ 193	Cause No. 34554
1983			2098	28	26.1	0.7	27	33	55%	$ 15,249	$ 430	
1984			2127	28	26.1	0.7	27	32	53%	$ 15,814	$ 446	

Charlestown Water Services Present Value Calculations
OUCC calculations of customers and services added per year since 1937

Services Useful Life	60	**Years**	
Services Cost - single	$ 1,300	**dual**	$ 1,350

					Services					Present Value		
Year	**Census Pop.**	**Cust.**	**Use**	**Cust. Added**	**Single**	**Dual**	**Total Services**	**Service Line Age (years)**	**% Depr.**	**Single Service Lines**	**Dual Service Lines**	**Source of Customer Data**
1985			2155	28	26.1	0.7	27	31	52%	$ 16,379	$ 462	
1986			2183	28	26.1	0.7	27	30	50%	$ 16,943	$ 478	
1987			2212	28	26.1	0.7	27	29	48%	$ 17,508	$ 494	
1988		2,240	2,240	28	26.1	0.7	27	28	47%	$ 18,073	$ 510	Cause No. 38483
1989			2264	24	21.7	0.6	22	27	45%	$ 15,482	$ 437	
1990	5889		2287	24	21.7	0.6	22	26	43%	$ 15,951	$ 450	
1991			2311	24	21.7	0.6	22	25	42%	$ 16,420	$ 463	
1992			2334	24	21.7	0.6	22	24	40%	$ 16,889	$ 477	
1993			2358	24	21.7	0.6	22	23	38%	$ 17,358	$ 490	
1994			2381	24	21.7	0.6	22	22	37%	$ 17,828	$ 503	
1995			2405	24	21.7	0.6	22	21	35%	$ 18,297	$ 516	
1996			2428	24	21.7	0.6	22	20	33%	$ 18,766	$ 530	
1997			2452	24	21.7	0.6	22	19	32%	$ 19,235	$ 543	
1998			2475	24	21.7	0.6	22	18	30%	$ 19,704	$ 556	
1999			2499	24	21.7	0.6	22	17	28%	$ 20,173	$ 569	
2000	5993		2522	24	21.7	0.6	22	16	27%	$ 20,642	$ 583	
2001		2,628	2546	24	21.7	0.6	22	15	25%	$ 21,112	$ 596	
2002		2,642	2570	24	21.7	0.6	22	14	23%	$ 21,581	$ 609	
2003		2,886	2593	24	21.7	0.6	22	13	22%	$ 22,050	$ 622	
2004		2,901	2617	24	21.7	0.6	22	12	20%	$ 22,519	$ 635	
2005		2,732	2640	24	21.7	0.6	22	11	18%	$ 22,988	$ 649	
2006		2,678	2664	24	21.7	0.6	22	10	17%	$ 23,457	$ 662	
2007		2,708	2687	24	21.7	0.6	22	9	15%	$ 23,926	$ 675	
2008		2,715	2711	24	21.7	0.6	22	8	13%	$ 24,396	$ 688	

Charlestown Water Services Present Value Calculations
OUCC calculations of customers and services added per year since 1937

Services Useful Life	60	**Years**	
Services Cost - single	$ 1,300	**dual**	$ 1,350

					Services					Present Value		
Year	**Census Pop.**	**Cust.**	**Use**	**Cust. Added**	**Single**	**Dual**	**Total Services**	**Service Line Age (years)**	**% Depr.**	**Single Service Lines**	**Dual Service Lines**	**Source of Customer Data**
2009		2,693	2734	24	21.7	0.6	22	7	12%	$ 24,865	$ 702	
2010	7585	2,838	2758	24	21.7	0.6	22	6	10%	$ 25,334	$ 715	
2011		2,821	2781	24	21.7	0.6	22	5	8%	$ 25,803	$ 728	
2012		2,861	2805	24	21.7	0.6	22	4	7%	$ 26,272	$ 741	
2013		2,872	2828	24	21.7	0.6	22	3	5%	$ 26,741	$ 755	
2014		2,858	2852	24	21.7	0.6	22	2	3%	$ 27,210	$ 768	
2015		2,904	2875	24	21.7	0.6	22	1	2%	$ 27,680	$ 781	
2016		2,899	2,899	24	21.7	0.6	22	0	0%	$ 28,149	$ 794	IURC Annual Report
Totals					2,227	304	2,531			$ 878,678	$ 41,212	

Water Services Total Present Value (2016)(Rounded)	$ 920,000
Average services age (years)	52
Avg. service line install year	1964

Notes:

1. These calculations recognize that Charlestown's water system was originally constructed in 1937 with large customer additions during World War II.
2. Population growth moderated following the war and customer additions slowed down.
3. Service line costs are based on typical connection fee filings and include installed costs for all components except meters.
4. The OUCC reduced the useful life for service lines from the appraisers' assumed 75 years to 60 years to match the upper range of useful lives under the Wisconsin Depreciation rates.
5. For water services still in service beyond the OUCC's assumed 60 year useful life, present value was kept at 5%.
6. Customer numbers are from IURC Annual Reports and articles from *The Chalestown Courier* newspaper.

CHARLESTOWN
SINCE 1808
INDIANA

Charlestown Water System:

Now and in the Future

What's in our water?

Foreword

This pamphlet is designed to help educate Charlestown water customers on our water source and distribution system, as well as the state of the water company.

It is our hope that after reading this pamphlet, our customers will have an understanding of the quality of the water, steps taken to improve water quality, the challenges we still face, budget constraints and the next steps in the eventual total rehabilitation of the Charlestown water system.

This pamphlet has been written in terms that can be understood by anyone outside the drinking water industry. All the material contents are taken from studies, best practices, testing labs, and from state and federal agencies responsible for the safety of drinking water.

We have depended upon the experts with knowledge of our water works for the content and plans to update the infrastructure of the 72 year-old water distribution system to modern standards.

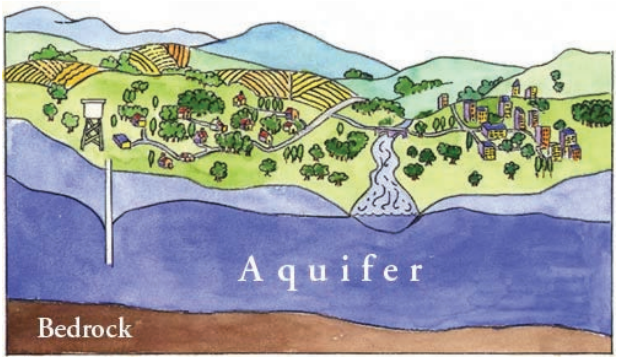
The Board of Public Works

Mayor Bob Hall
David Flowe
George Roberts

Where Does Our Water Come From?

Charlestown gets its water from an aquifer that runs underground and borders the Ohio River.

It has its own natural filtration system of sand and gravel that eliminates the impurities that come from surface water. This is a process that occurs continually. The aquifer supplies an enormous water capacity for our system.

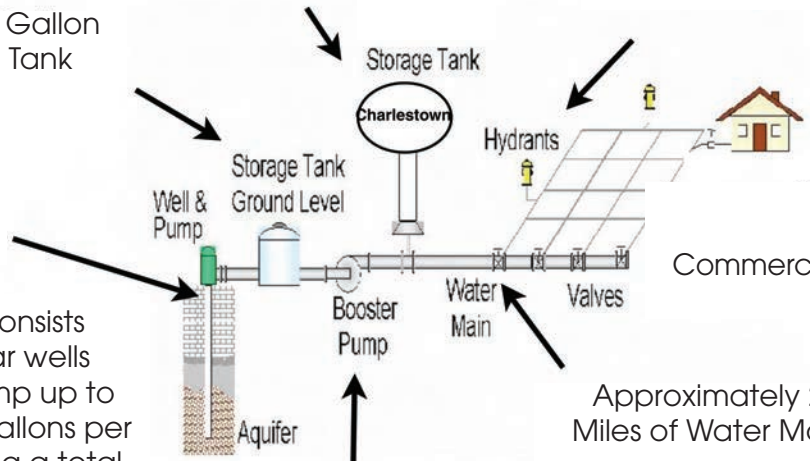


The Charlestown Water System

2 Storage Tanks

144 Fire Hydrants

1.5 Million Gallon Storage Tank



Wells

2822 Customers Consisting of Both Commercial and Residential

Our system consists of four tubular wells that can pump up to one million gallons per day, providing a total capacity of four million gallons. This volume would allow the city to grow three times its current size and still have plenty of water to supply all of our citizens.

Approximately 28 Miles of Water Mains

2 Booster Pumps at the Water Station

Charlestown citizens have had a 72 year history with this water and water system. Charlestown's residents experience a high quality of life that includes healthy living and safe water supply.

Is Charlestown's Drinking Water Safe?

What Law Keeps My Drinking Water Safe?

Congress passed the Safe Drinking Water Act (SDWA) in 1974, to protect public health by regulating the nation's public drinking water supply and protecting sources of drinking water. SDWA is administered by the U.S. Environmental Protection Agency (EPA) and the Indiana Department of Environmental Management (IDEM).

Where Can I Find Information About Charlestown's Water System?

Since 1999, Charlestown, along with other water companies, is required to provide annual Consumer Confidence Reports to their customers. These reports, due by July 1 of each year, contain information on contaminants found in the drinking water, possible health effects, and the water source. There has been no history of contaminants in Charlestown's water.

Charlestown must promptly inform water system customers if your water has been contaminated by something that can cause immediate illness. We have 24 hours to inform customers of violations of EPA standards that have the potential to have serious adverse effects on human health as a result of short-term exposure. If such a violation occurs, we will announce it through the media, and will provide information about the potential adverse effects on human health, steps the system is taking to correct the violation, and the need to use alternative water supplies (such as a boiled or bottled water) until the problem is corrected.

We will inform our customers about violations of less immediate concern in the first water bill sent after the violation, in a Customer Confidence Report, or by mail within a year. In 1998, states began compiling information on individual systems, so you can evaluate the overall quality of drinking water in your state. Additionally, EPA must compile and summarize the state reports in an annual report on the condition of the nation's drinking water.

How Often is Our Charlestown Water Supply Tested?

The EPA has established pollutant-specific minimum testing schedules for all public water systems. Tests for chloride, flouride and phosphates are run daily. Tests for iron, manganese, and bacteria are run monthly.

If a problem is detected, immediate retesting requirements go into effect along with strict instructions about how the system informs the public. Until the system can reliably demonstrate that it is free of problems, the retesting is continued.

What Causes Discolored Water?

Over the 72 years this water distribution system has been in operation, manganese has built up inside the water mains.

Build-up inside the waterlines

Water Pressure Changes

Significant water pressure changes occur in the water lines when a water main breaks, the fire department uses hydrants to extinguish fires, or the hydrants are flushed.

This loss of pressure and the recharging of the water rushing back into the lines acts like a scouring pad to break the accumulated manganese free inside the lines. This creates a large concentration of manganese that travels through the system.

When someone turns the water on inside their home, this manganese concentration is captured through their lines and the discolored water appears.

Customers who live in areas with dead-end lines are more prone to experience this because the water has no other outlet.

Until the lines are clear of this build up, the dead-end lines are looped back in the system, and more hydrants are added, we will continue to experience occasional discoloration.

Ongoing identification and correction of these areas will be discussed later in this publication.

Is Discolored Water Unique to Charlestown?

No. Occasional discolored water certainly is not unique to Charlestown. Many water companies throughout the region, state and nation deal with this nuisance.

It happens both with systems that utilize filtration and with those that do not utilize filtration.

An Evening News article dated May 15, 2007, cites customer complaints made to Indiana American Water Company at a rate hearing last year in Jeffersonville. "Ida Callahan...came to Kye's armed with two glass bottles — one that had been sanitized and one that had held tap water. When the tap water evaporated out of the bottle it left a milky residue, she said. 'That's why I won't drink it, it's dirty.'"

Also from the Evening News, October 28, 2008, Indiana America warns customers about discolored water occurring during times of flushing. The release states, "The routine work is being done as part of an annual main-flushing program that improves water service by flushing or cleaning mineral deposits and sediment from water mains... The company does not foresee incidences of discoloration, but ***if this does occur***, the company recommends customers let their cold water run to clear before using it again and refrain from doing laundry during that time."

In summary, Indiana American Water Company has a filtration plant that has been in use since 1999. Even with filtration, they experience the same issues with water discoloration, especially at times of flushing, as do other communities including Charlestown.

Charlestown must comply to all the same testing and regulations as those required of Indiana American Water Company, and their water, like ours, meets the same safe drinking standards outlined in this publication.

What is Manganese and What Effect Does it Have on the Body?

Manganese is a naturally-occurring, gray-white element that can be found everywhere – in the air that we breathe, the soil in which we grow our crops, and the water that we drink.

Manganese is an essential nutrient for humans and animals alike. It is essential for proper coordination between brain and body.

Our greatest exposure to manganese is usually from food. The largest quantities of manganese are found in avocados, nuts and seeds, seaweed, and whole grains. This mineral may also be found in blueberries, egg yolks, legumes, dried peas, pineapples, and green leafy vegetables.

SUPPLEMENT FACTS

Serving Size: One tablet

	Amount Per Serving	% Daily Value
Total Carbohydrate	< 1 g	< 1%*
Vitamin A (40% as beta-carotene)	3500 IU	70%
Vitamin C	60 mg	100%
Vitamin D	400 IU	100%
Vitamin E	22.5 IU	75%
Vitamin K	25 mcg	31%
Thiamin (B1)	3 mg	200%
Riboflavin (B2)	3.4 mg	200%
Niacin	40 mg	200%
Vitamin B6	4 mg	200%
Folic Acid	400 mcg	100%
Vitamin B12	12 mcg	200%
Biotin	300 mcg	100%
Pantothenic Acid	10 mg	100%
Calcium (elemental)	250 mg	25%
Iron	9 mg	50%
Iodine	150 mcg	100%
Magnesium	40 mg	10%
Zinc	15 mg	100%
Selenium	45 mcg	64%
Copper	2 mg	100%
Manganese	2 mg	100%
Chromium	100 mcg	83%
Molybdenum	25 mcg	33%
Potassium	99 mg	3%
Nickel	5 mcg	**
Tin	10 mcg	**
Silicon	5 mg	**
Boron	150 mcg	**
Guarana Seed Powder	110 mg	**
Caffeine	90 mg	**

*Percent Daily Values are based on a 2,000 calorie diet.
**Daily Value not established.

Adults commonly consume 0.7 milligrams to 10.9 milligrams every day from the food that we eat with even higher amounts of manganese associated with vegetarian diets. Many multi-vitamins contain manganese to supplement our manganese consumptions.

Although manganese is an essential nutrient at low doses, chronic exposure to high doses may be harmful.

How Much Manganese is Too Much?

In order to enhance consumer acceptance of water resources throughout the country, EPA recommends reducing manganese concentration to or below 0.05 milligrams per liter (parts per million), which is the EPA'S Secondary Maximum Contaminant Level for manganese. This level is established based on staining and taste considerations – not health risks.

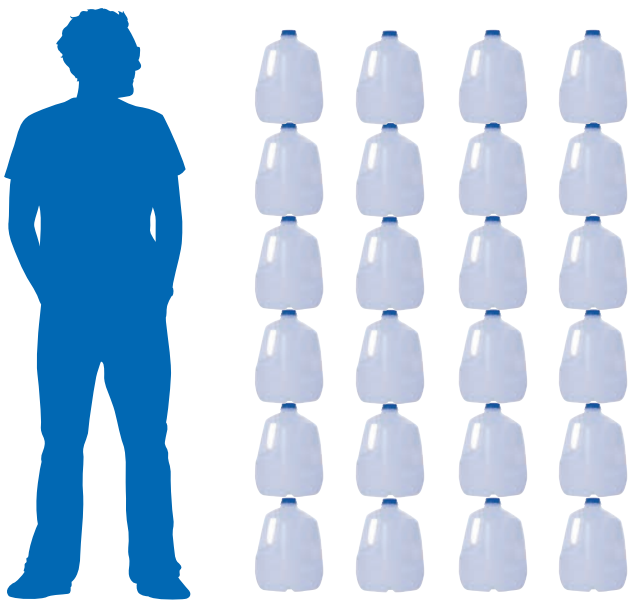
The EPA issued a Lifetime Health Advisory (HA) for manganese. This type of advisory is developed by EPA only for chemicals such as manganese, that are not likely to cause cancer to humans. The Lifetime HA established by the EPA represents only that portion of an individual's total exposure to manganese that is attributed to drinking water and is considered protective of non-cancer-causing adverse health effects over a lifetime of exposure.

The EPA estimated that, assuming a body weight of approximately 154 pounds, an intake of 10 milligrams of manganese per day is safe for a lifetime of exposure.

How Much Charlestown Water Would I have to Drink to Ingest 10 Mg of Manganese?

If we assume that Charlestown water always contains manganese at a level of 0.11 milligrams per liter based on a monthly average, you would have to consume about 24 gallons of water every day to ingest 10 milligrams of manganese. Even if you could drink that much water, the EPA would consider the amount of manganese you consumed as being SAFE!

You cannot drink enough Charlestown water to ingest manganese to a level that is harmful to your health.



Where Are We Today?

Since 2000, there have been major improvements to and millions of dollars invested in the Charlestown water system.

In 2000, more than 50% of the fire hydrants did not work, and had not worked for many years. This prevented any effective flushing of the system. These were replaced or repaired. Others have been added through the years, and more are still needed in order to have the necessary capabilities to effectively flush the lines.

In 2000, nearly 60% of the water meters were inoperable. They were replaced with electronic meters.

In 2001, a polyphosphate was added to the water system to reduce further manganese build-up in the lines. This did not remove existing build-up, but did help stop the issue from further progressing.

In 2002, water mains in Pleasant Ridge were replaced. Prior to this time, it was common to have two to three water line breaks daily, with more than 80% occurring in Pleasant Ridge. Today, we average about ten per month instead of the 70 – 80 once experienced.

There have been miles of mains replaced in the last ten years and many more to go.

In 2002, it was common to receive 10-15 calls per day about discolored water. Today, in normal operations, we receive less than that in three months, unless there is a large water main break, flushing, or significant loss of pressure in the mains that affects the whole system. In these cases, more customers are affected.

In 2006, a new elevated storage tank was built. This tank helps maintain consistent pressure and reduces the drastic fluctuations that cause discolored water.

In 2008, the city applied for and received a grant to have a company investigate our raw water supply in terms of the water quality and quantity; develop alternative solutions to the city's long-term water needs; and recommend actions that might be taken to further improve the quality and quantity of water to our current and future customers. The study and testing, which took place in 2009, has been valuable in formulating a strategy of well use and distribution needs.

CLEARITAS

What's Next?

We have been working with the Indiana Department of Environmental Management (IDEM) to access the same $500,000 grant obtained from Congress in 2007, in order to improve the Charlestown water system. The funds are now in place, and we are awaiting IDEM approval of the engineering report. We expect to obtain this funding.

Improvements will be made to our well field along the river and at the high service booster station. Improvements include replacing old pumps, installing state-of-the-art control systems and emergency generators, and well rehabilitation. The ground storage tank at the high service booster station will be rehabilitated, eliminating another source of manganese build-up within the system.

A new feed system will be installed at the booster station and well field that will begin introducing a product called **Clearitas** (formerly RE-Ox), which will allow us to efficiently remove the build-up of manganese and iron that has accumulated in our water mains.

Clearitas is a non-hazardous solution that removes corrosive deposits such as iron, manganese, and calcium scale. It will be used to penetrate and remove the build- up in the water mains and storage tanks to improve the overall quality of the water. This is a tasteless, odorless, colorless, and non-hazardous product that has been used successfully in a number of communities.

CLEARITAS

A community that has seen great success in resolving the same discolored water issue associated with manganese is Patriot, Indiana.

Patriot's manganese levels were greater than six times that of Charlestown. The introduction of Clearitas to the Patriot system three years ago, has allowed the city to effectively manage manganese build up and improve overall water service to water customers. After approximately three years of use and an effective flushing program, Patriot's water department has virtually eliminated discolored water complaints and has helped to pioneer the use of this product for high level manganese treatment in water systems.

It is expected that Charlestown can also experience this same success as the systems are virtually identical.

Another component of this work with be the installation a backup generator for the electrical system at the well field. The 1.5 million gallon storage tank will also be rehabilitated. Finally, we will install a state-of-the-art computerized model of the entire system, as well as a computerized system to monitor and operate the well field, storage tanks, and distribution system. When completed, these upgrades will result in creating greater efficiency, and will assist in the development of an optimum flushing' method and schedule.

This will be another major step in making improvements to reduce and eliminated our discolored water.

Treatment versus Filtration

The water from our wells is clear as it comes from the wells. It becomes discolored as mains are disrupted and water flows through them into your home. This is the situation that must be addressed.

Why not just build a water filtration plant? Simply stated, because building a plant will require raising water rates and won't solve the discolored water problem.

Charlestown previously considered constructing a green sand filtration plant at a total project cost well in excess of 1.7 million dollars. In addition to the initial costs, on-going operation, maintenance and replacement costs would have necessitated considerable rate increases. Costs associated with the plant operation (manpower, electricity, chemicals, replacing filter media, etc.) would constantly increase from year to year necessitating additional rate increases.

Rather than constructing an expensive filtration plant, which would not have alleviated the discolored water issue, we looked at alternatives that would be more cost-effective to solve the discolored water problems in the lines.

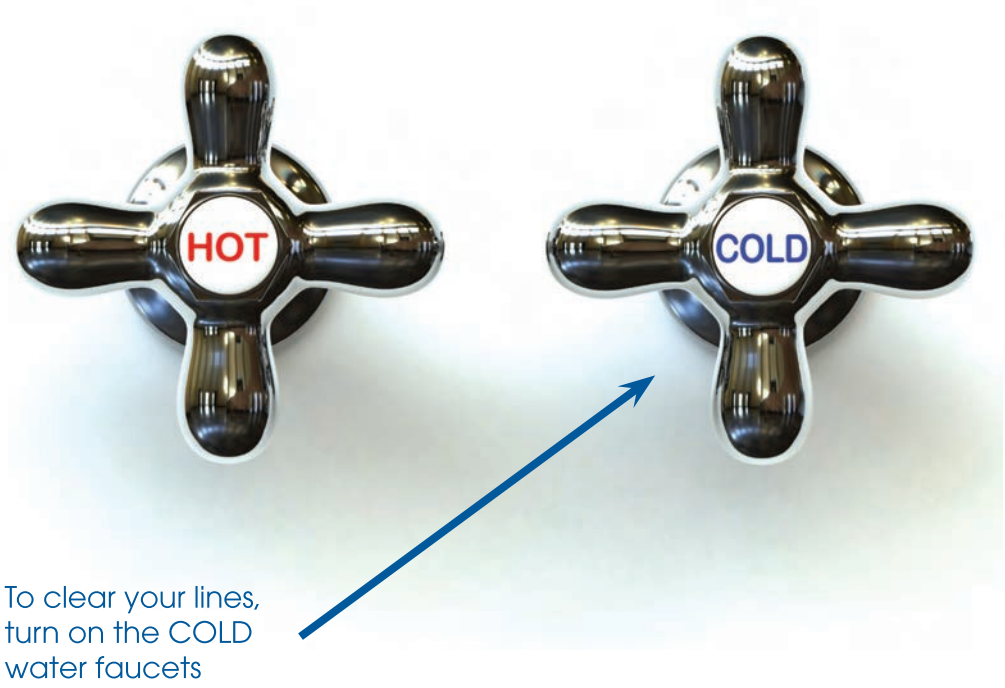
Currently, Charlestown does not find it advantageous to build a multi-million dollar water filtration plant and raise water rates accordingly to pay for the construction of the plant and the ever-increasing costs of operation, maintenance and replacement expenses associated with a water filtration plant.

As stated earlier, the issue is the build-up in the water mains and a filtration plant will not resolve that.

Frequently Asked Questions

What do I do if I get discolored water?

As explained in early chapters, the manganese concentration is temporary. To clear your lines, turn on only the COLD water faucets in your house until your water clears. Be sure NOT to use the hot water faucet, as it will draw the discolored water into your water heater.



What if my laundry is stained by discolored water?

When your water clears, rewash your clothes using one of two products - Super Iron Out or OxiClean. Many people use these products with every wash to keep their whites white. Both are available at most retail outlets.

What if my water has a sulphur smell?

Strong smells like this are associated with your water heater. You may want to flush your water heater.

A Word from the Water Billing Company

Charlestown Clerk Treasurer Donna Coomer has recently announced the addition of online payments for your water, sewer and sanitation bills. One of the main goals of this project is to introduce a way to allow payments by credit card. This service is offered in addition to the automatic debit service currently being offered. Auto-debit allows the billing office to deduct your monthly bill from your checking account automatically each month.

Also new in the last year, is the introduction of a new billing system. By allowing Boyce Systems to process the utility bills, we have streamlined the process, resulting in cost savings. Now customers receive an easy to read, full-page bill, complete with a return envelope.

We would like to offer some water conservation tips:

FIX **ADJUST** **CONSERVE**



- Adjust sprinklers so only your lawn is watered and not the house, sidewalk or street.
- Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons per month.
- Monitor your water bill for unusually high use. Your bill and water meter are tools that can help you discover leaks. *
- We're more likely to notice leaks indoors, but don't forget to check outdoor faucets, sprinklers and hoses for leaks.
- Fix that leaky faucet. It's simple and inexpensive, and you can save 140 gallons per week.

*Due to the variance of the number of days in a billing cycle, it is possible that your utility could vary by $10 - $15 each month. This can occur for a number of reasons.

First, some months are longer than others. When you have two long months together, such as December and January, your bill will be higher in comparison to a month such as February, in which there are fewer days in the billing cycle.

Secondly, despite all efforts to read the meters at the same time each month, there are occasions when weather or other unforeseen circumstances prevent this. For these reasons, the number of days in a billing cycle can vary from 26 or 27 to as many as 31 or 32. Just a few days can make a significant difference in your bill. For instance, your average bill may be $100 for a typical 30 day read. If the billing cycle was only 27 days, your bill would be approximately $90.18, and for a billing cycle that is 32 days, your bill could be as much as $106.88. These variances are common and to be expected.

If you have questions about this information or need further information on billing, please contact the water department at 812-256-2427.

For more tips, please visit www.wateruseitwisely.com.

Due to the variance of the number of days in a billing cycle, it is possible that your bill could vary by $10 - $15 each month.

Ten Fun Facts About Water

1. Approximately 400 billion gallons of water are used in the United States each day.

2. More than 25% of bottled water comes from a municipal water supply, the same place that tap water comes from.

3. In one year, the average American residence uses more than 100,000 gallons of water (indoors and outside).

4. It takes seven and a half years for the average American residence to use the same amount of water that flows over the Niagara Falls in one second (750,000 gallons).

5. American residents use about 100 gallons of water per day.

6. Americans use more water each day by flushing the toilet than they do by showering or any other activity.

7. The average faucet flows at a rate of two gallons per minute. You can save up to four gallons of water every morning by turning off the faucet while you brush your teeth.

8. Taking a bath requires up to 70 gallons of water. A five-minute shower uses only 10 to 25 gallons.

9. A running toilet can waste up to 200 gallons of water per day.

10. It takes more than ten gallons of water to produce one slice of bread.

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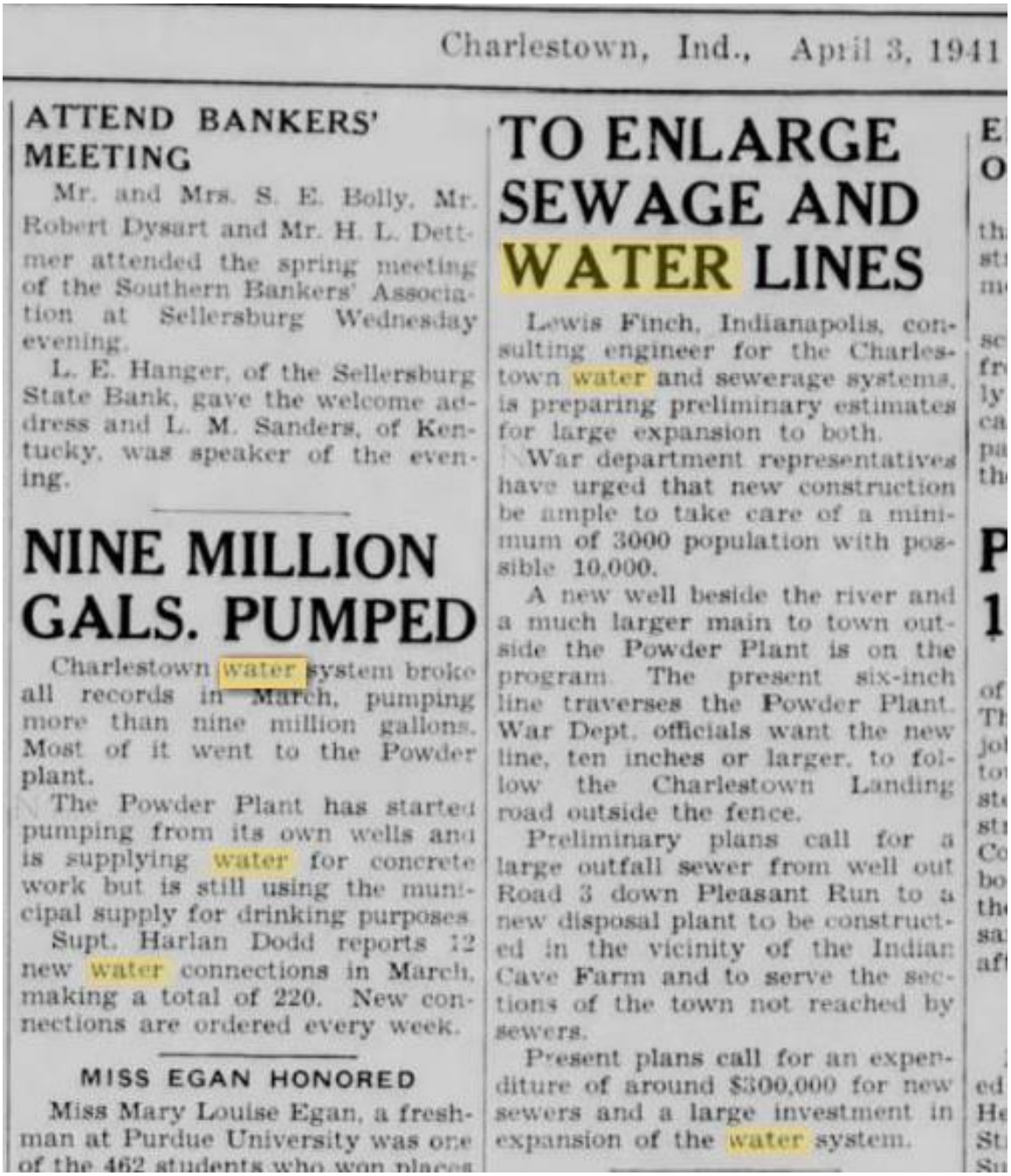
Charlestown Hydrant Age and OUCC Present Value Calculations

Hydrant Service Life	50	Years
Unit Price to Replace	$ 4,000	Per OUCC DR 5.10

Year	Hydrant Age	Reported No. of Hydrants by Year (Banning map)	OUCC Calculated Percent Depreciated	OUCC Calculated Present Value	OUCC Hydrant Sample By Year
1945	71	0	95%	$ -	2
1956	60	0	95%	$ -	1
1964	52	0	95%	$ -	2
1967	49	16	95%	$ 3,200	0
1969	47	38	94%	$ 9,120	0
1970	46	0	92%	$ -	1
1978	38	45	76%	$ 43,200	1
1980	36	0	72%	$ -	1
1981	35	0	70%	$ -	2
1982	34	0	68%	$ -	2
1985	31	2	62%	$ 3,040	2
1986	30	0	60%	$ -	2
1987	29	0	58%	$ -	0
1988	28	15	56%	$ 26,400	0
1990	26	0	52%	$ -	1
1991	25	1	50%	$ 2,000	1
1992	24	0	48%	$ -	1
1995	21	0	42%	$ -	1
1997	19	14	38%	$ 34,720	1
1999	17	41	34%	$ 108,240	0
2000	16	45	32%	$ 122,400	3
2001	15	0	30%	$ -	1
2002	14	0	28%	$ -	1
2003	13	41	26%	$ 121,360	1
2004	12	0	24%	$ -	2
2005	11	3	22%	$ 9,360	5
2006	10	0	20%	$ -	1
2007	9	8	18%	$ 26,240	2
2009	7	0	14%	$ -	1
2010	6	0	12%	$ -	1
2013	3	0	6%	$ -	1
Unknown		0	0%	$ -	10
Total		269		$ 509,280	50
Avg. Hydrant Age		26.4			25.4

Charlestown Water System – newspaper articles



Charlestown, Ind., April 3, 1941

ATTEND BANKERS' MEETING

Mr. and Mrs. S. E. Bolly, Mr. Robert Dysart and Mr. H. L. Dettmer attended the spring meeting of the Southern Bankers' Association at Sellersburg Wednesday evening.

L. E. Hanger, of the Sellersburg State Bank, gave the welcome address and L. M. Sanders, of Kentucky, was speaker of the evening.

NINE MILLION GALS. PUMPED

Charlestown water system broke all records in March, pumping more than nine million gallons. Most of it went to the Powder plant.

The Powder Plant has started pumping from its own wells and is supplying water for concrete work but is still using the municipal supply for drinking purposes.

Supt. Harlan Dodd reports 12 new water connections in March, making a total of 220. New connections are ordered every week.

MISS EGAN HONORED

Miss Mary Louise Egan, a freshman at Purdue University was one of the 462 students who won places

TO ENLARGE SEWAGE AND WATER LINES

Lewis Finch, Indianapolis, consulting engineer for the Charlestown water and sewerage systems, is preparing preliminary estimates for large expansion to both.

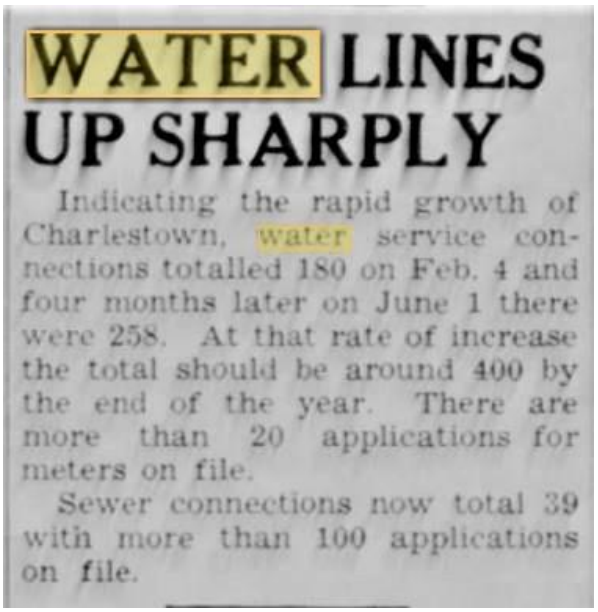
War department representatives have urged that new construction be ample to take care of a minimum of 3000 population with possible 10,000.

A new well beside the river and a much larger main to town outside the Powder Plant is on the program. The present six-inch line traverses the Powder Plant. War Dept. officials want the new line, ten inches or larger, to follow the Charlestown Landing road outside the fence.

Preliminary plans call for a large outfall sewer from well out Road 3 down Pleasant Run to a new disposal plant to be constructed in the vicinity of the Indian Cave Farm and to serve the sections of the town not reached by sewers.

Present plans call for an expenditure of around $300,000 for new sewers and a large investment in expansion of the water system.

Figure 1 – *The Charlestown Courier*, April 3, 1941

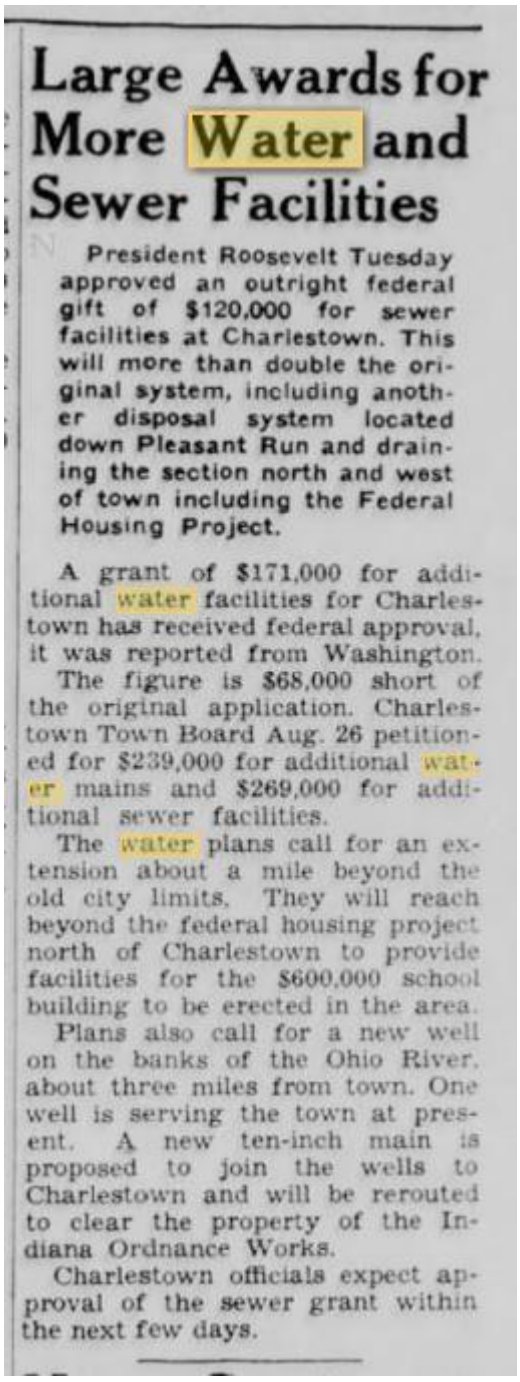


WATER LINES UP SHARPLY

Indicating the rapid growth of Charlestown, water service connections totalled 180 on Feb. 4 and four months later on June 1 there were 258. At that rate of increase the total should be around 400 by the end of the year. There are more than 20 applications for meters on file.

Sewer connections now total 39 with more than 100 applications on file.

Figure 2 – *The Charlestown Courier*, June 19, 1941.



Large Awards for More Water and Sewer Facilities

President Roosevelt Tuesday approved an outright federal gift of $120,000 for sewer facilities at Charlestown. This will more than double the original system, including another disposal system located down Pleasant Run and draining the section north and west of town including the Federal Housing Project.

A grant of $171,000 for additional water facilities for Charlestown has received federal approval, it was reported from Washington.

The figure is $68,000 short of the original application. Charlestown Town Board Aug. 26 petitioned for $239,000 for additional water mains and $269,000 for additional sewer facilities.

The water plans call for an extension about a mile beyond the old city limits. They will reach beyond the federal housing project north of Charlestown to provide facilities for the $600,000 school building to be erected in the area.

Plans also call for a new well on the banks of the Ohio River, about three miles from town. One well is serving the town at present. A new ten-inch main is proposed to join the wells to Charlestown and will be rerouted to clear the property of the Indiana Ordnance Works.

Charlestown officials expect approval of the sewer grant within the next few days.

Figure 3 – *The Charlestown Courier*, October 9, 1941.

Housing Project Bids Open May 27

Bids for construction of streets, water and sewer lines in the 96-acre tract on which 750 houses for defense workers are to be erected will be opened May 27 in the office of Henry Steeg & Associates, Indianapolis, consulting engineers on the project.

Fabrication of the houses by the Gunnison Housing Corp. of New Albany and their erection by the Dunlap Contracting Co. of Columbus, will follow the building of the streets and utilities.

Figure 4 – *The Charlestown Courier*, May 14, 1942

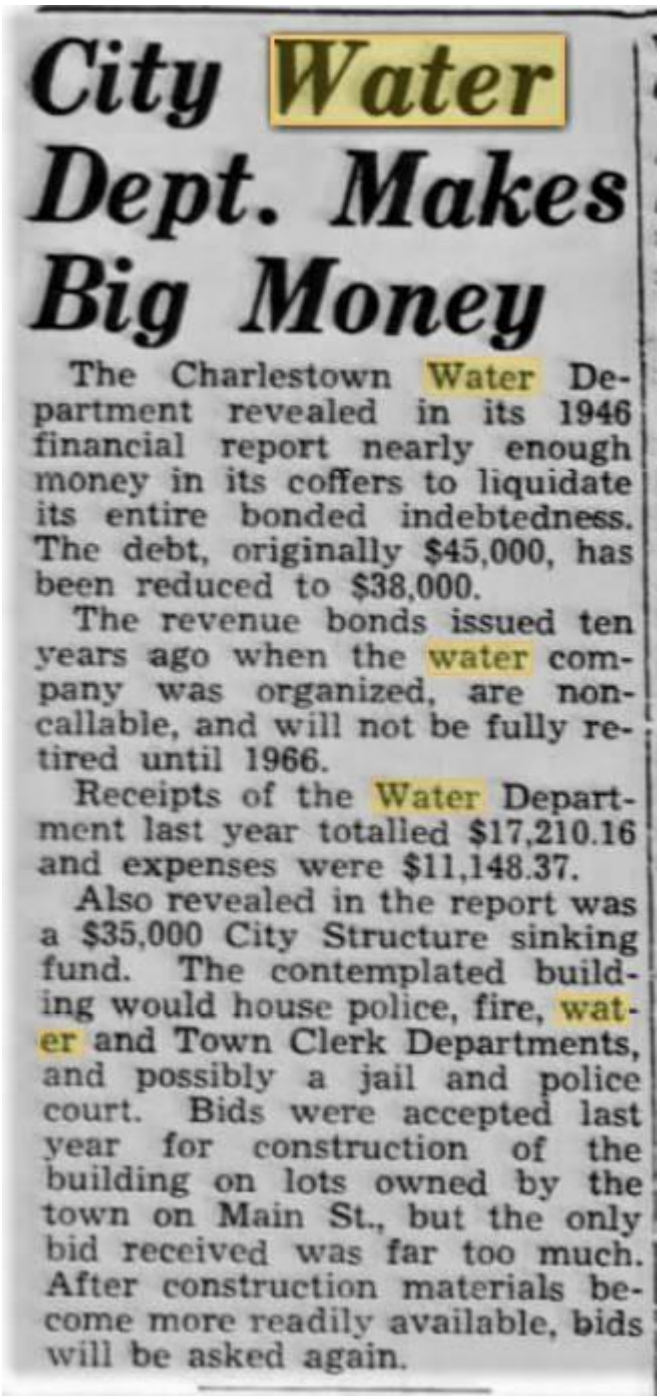
WATER DEPARTMENT HERE USING NEW SYSTEM ON BILLS

CHARLESTOWN — The 1700 city water users this month for the first time will get water bills addressed by the city's addressograph.

The new machine, purchased at a cost of $500 will cut the time required to address water bills from four days to one day, according to Mrs. Leila Bottorff, who does the job.

The machine arrived last month in time for use on billing residents in the project, she said, but city bills had already been sent out.

Figure 5 – *The Charlestown Courier*, June 24, 1954.



City Water Dept. Makes Big Money

The Charlestown Water Department revealed in its 1946 financial report nearly enough money in its coffers to liquidate its entire bonded indebtedness. The debt, originally $45,000, has been reduced to $38,000.

The revenue bonds issued ten years ago when the water company was organized, are non-callable, and will not be fully retired until 1966.

Receipts of the Water Department last year totalled $17,210.16 and expenses were $11,148.37.

Also revealed in the report was a $35,000 City Structure sinking fund. The contemplated building would house police, fire, water and Town Clerk Departments, and possibly a jail and police court. Bids were accepted last year for construction of the building on lots owned by the town on Main St., but the only bid received was far too much. After construction materials become more readily available, bids will be asked again.

Figure 6 – *The Charlestown Courier*, Jan. 30, 1947 – article references the start of the water system ten years ago (1937).

Sunday Was 20th Anniversary Of Water Dept.

Sunday was an anniversary. It was the anniversary of the Charlestown water system. That is it was the anniversary of the day that water was turned on to all the subscribers in Charlestown.

On December 15, 1937 water was turned on to 100 to 160 subscribers in Charlestown. After two years of hard work by a few men the water system was complete to the last customer. The first bills were rendered for half a month and most customer had to pay only the 75 cent a month minimum.

The groundwork for the establishment of the water works was begun in 1933. At that time Paul Clapp, David L. James, Henry J. Jones, John McMillan and Otis Carter were on the Town Board. S. E. Bolly was Clerk-Treasurer.

About this time the city elections were changed to what is known as off-year elections and the election of the town Board was held only two years later. The Town Boards were usually elected for four years.

The new Board was composed of David L. James, S. E. Bolly, David A. Bottorff, G. Wm. Baumgartner and Otis Carter. John F. Whitlatch was elected Clerk-Treasurer. Baumgartner died before taking office and it is belived that the Board served out its term, short one member, because Baurgartner was never replaced.

It is interesting to note that when the citizens of Charlestown (about 850 people then) voted by referendum to accept or reject the proposed water system, 300 voted for the project and only 14 opposed.

Members of the two town Boards and a few other citizens did yeoman work to get the project underway and completed. Civic minded citizens carried petition, made innumerable trips to Indianapolis to check with the engineer and the thousand and one things necessary to keep the project going.

For the first two or three years the Water Dept. operated on mighty thin ice financially. There was barely enough subscribers to carry the system and so everything was done as economically as possible. John Whitlatch, City Clerk-Treasurer served as clerk of the infant Water Dept. at a very small salary. Dr. David Bottorff took care of the chlorinating system for practically nothing. Harlan Dodd supervised the installations of the meters and took care of troubles with the line.

Built at a total cost of $70,000 the Water system was financed by revenue bonds and about $28,000 received from the Government. Actual construction costs total $60,000. The rest of the money was spent for easements, fees and expenses of the new system. All pipe and joints laid to the river were of the very best material available at the time Every home in town received water in the yard, if nothing but a yard faucet set in eight feet over the property line. Many of the homes were not ready for water inside the homes.

The well is located 3½ miles from Charlestown in the Ohio River bottoms. Ground was purchased from Tillie Kemple about ½ mile from Charlestown Landing, south along the River. The well was drilled 73 feet down. Two feet were through solid rock and 27 feet through high grade gravel. Water is almost pure and many times needs little chlorination.

After drilling the well, a concrete stand was built to house the pumps high enough in the air to keep from high water during flooding. In fact 1937 was a good time to build the stand as that was the year of our greatest flood and the persons responsible were very much aware of flood damage.

Many of the men responsible for the erection of the water system are dead now and would probably be amazed at its growth. Water lines have been extended many times. The latest large scale expansion took place two years ago when water lines were run into North Charlestown.

The Municipal Water Department today is one of the greatest assets of the town. We are fortunate to have such a fine source for excellant water. We are fortunate our predecessors had the vision to install the system. We owe them a debt of gratitute. David L James and Otis Carter are the only remaining members of the Town Board still living. Harlan Dodd, supervisor of the mechanical end of the system is still active in his plumbing business.

Future growth of the town will have a lot to do with the future of the Water Department.

The present sewer system was begun in 1939 and has added much to the growth of the town. In fact the two systems compliment each other.

Figure 7 – *The Charlestown Courier*, December 19, 1957. Article references the dedication of the Charlestown water system on December 15, 1937 following the two year construction of the system for $60,000.

1953 Charlestown to Speed, IN 8-inch asbestos cement water main (4 miles long) and Lake View and High View subdivisions water mains

Figure 1 – Banning map showing Lake View and High View subdivisions. The aqua colored line along Highway 403 is the 1953 8-inch asbestos cement water main (Banning assumed 1967 construction). Banning incorrectly assumes all other water mains are from 2003.

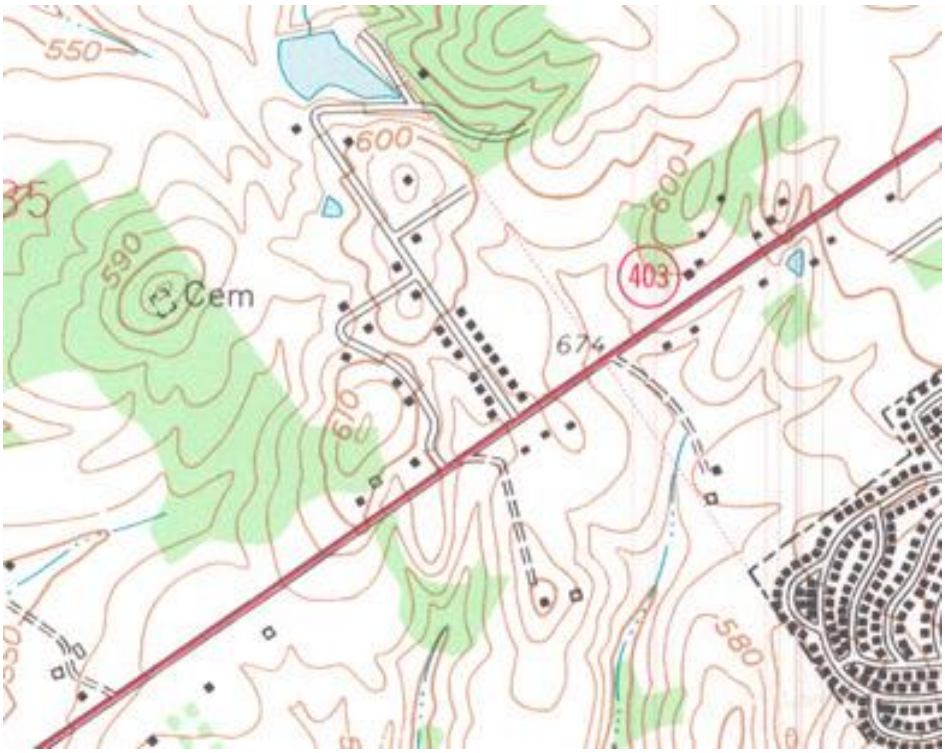
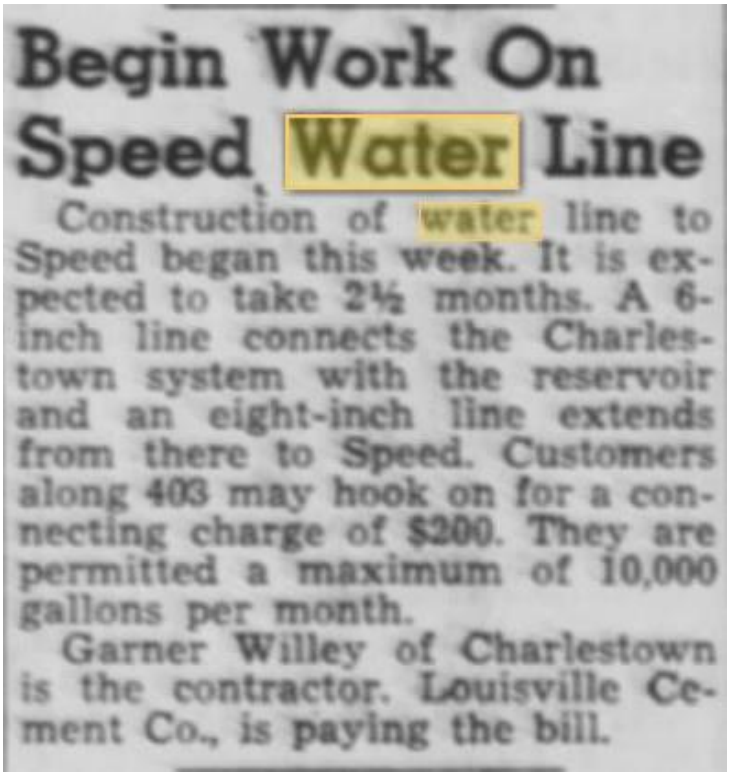


Figure 2 – 1963 Topographic map showing the 1956 High View and Lake View subdivisions.

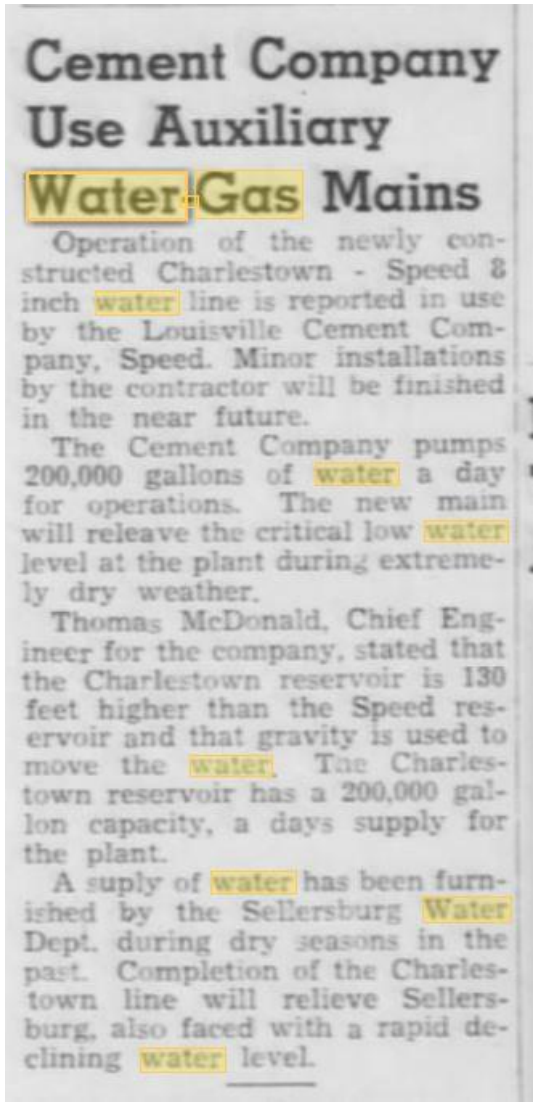


Begin Work On Speed Water Line

Construction of water line to Speed began this week. It is expected to take 2½ months. A 6-inch line connects the Charlestown system with the reservoir and an eight-inch line extends from there to Speed. Customers along 403 may hook on for a connecting charge of $200. They are permitted a maximum of 10,000 gallons per month.

Garner Willey of Charlestown is the contractor. Louisville Cement Co., is paying the bill.

Figure 3 –Louisville Cement Co– Speed, IN 8-inch water main article, *The Charlestown Courier*, Apr. 16, 1953.



Cement Company Use Auxiliary Water Gas Mains

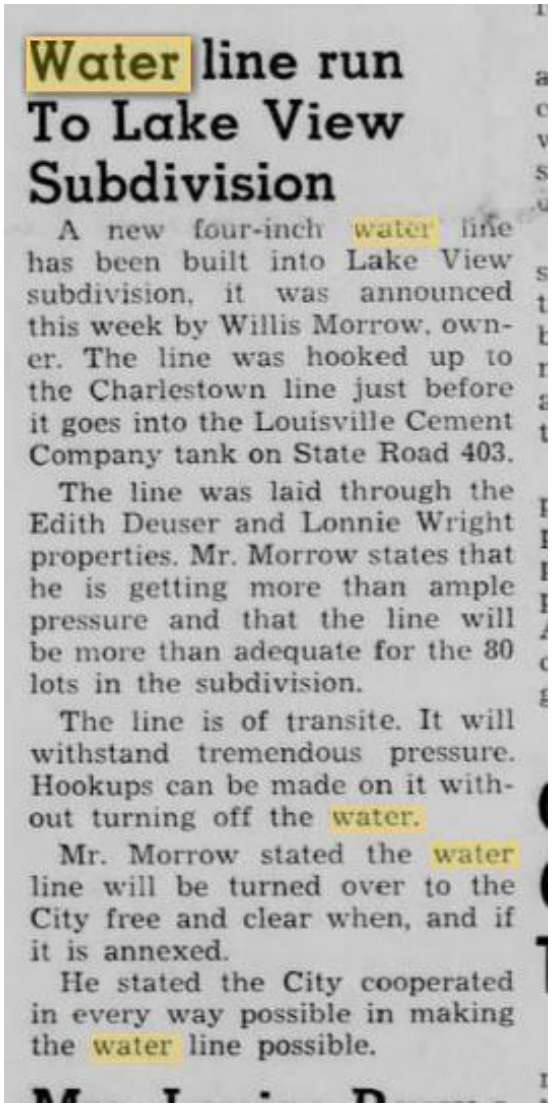
Operation of the newly constructed Charlestown - Speed 8 inch water line is reported in use by the Louisville Cement Company, Speed. Minor installations by the contractor will be finished in the near future.

The Cement Company pumps 200,000 gallons of water a day for operations. The new main will releave the critical low water level at the plant during extremely dry weather.

Thomas McDonald, Chief Engineer for the company, stated that the Charlestown reservoir is 130 feet higher than the Speed reservoir and that gravity is used to move the water. The Charlestown reservoir has a 200,000 gallon capacity, a days supply for the plant.

A suply of water has been furnished by the Sellersburg Water Dept. during dry seasons in the past. Completion of the Charlestown line will relieve Sellersburg, also faced with a rapid declining water level.

Figure 4 –Louisville Cement Co.– Speed, IN 8-inch water main article, *The Charlestown Courier*, October 29, 1953.



Water line run To Lake View Subdivision

A new four-inch water line has been built into Lake View subdivision, it was announced this week by Willis Morrow, owner. The line was hooked up to the Charlestown line just before it goes into the Louisville Cement Company tank on State Road 403.

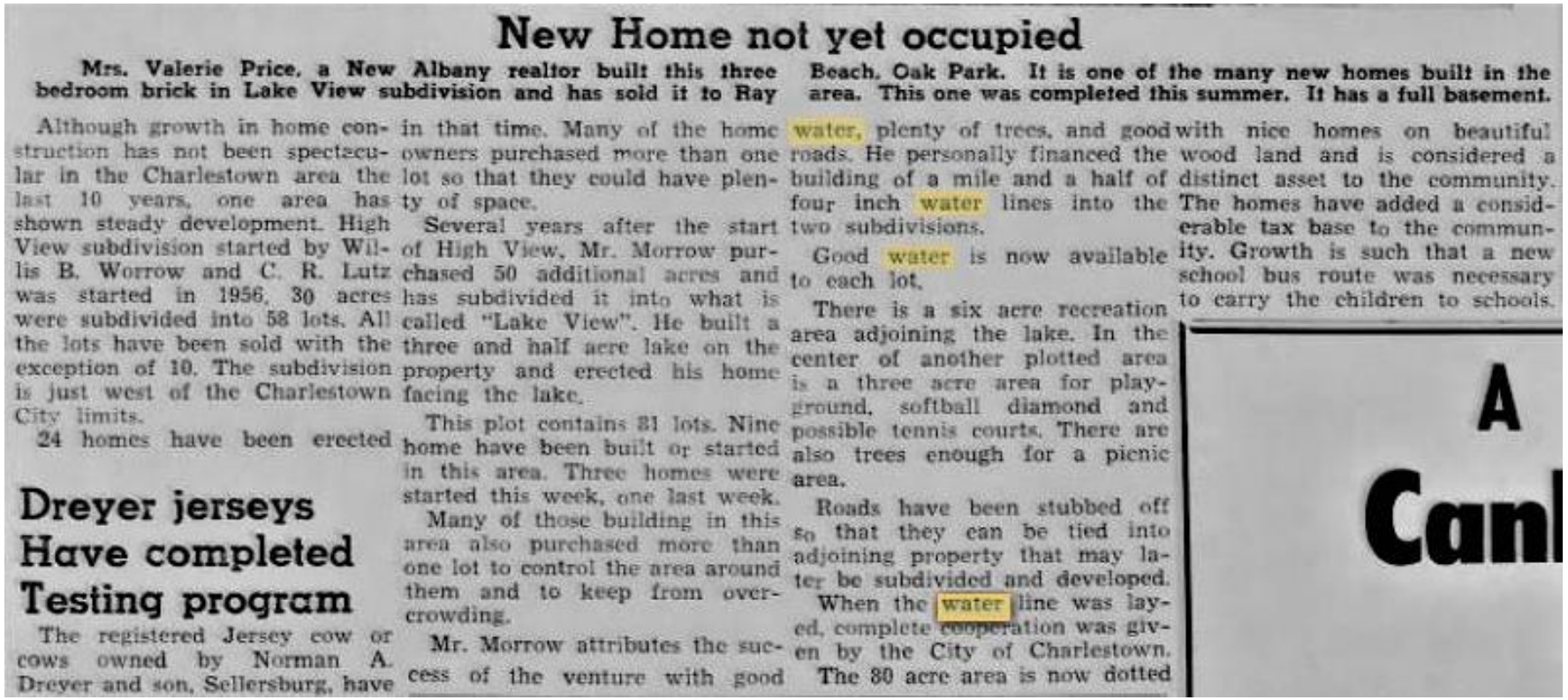
The line was laid through the Edith Deuser and Lonnie Wright properties. Mr. Morrow states that he is getting more than ample pressure and that the line will be more than adequate for the 80 lots in the subdivision.

The line is of transite. It will withstand tremendous pressure. Hookups can be made on it without turning off the water.

Mr. Morrow stated the water line will be turned over to the City free and clear when, and if it is annexed.

He stated the City cooperated in every way possible in making the water line possible.

Figure 5 –Lake View subdivision article, *The Charlestown Courier*, October 4, 1962



New Home not yet occupied

Mrs. Valerie Price, a New Albany realtor built this three bedroom brick in Lake View subdivision and has sold it to Ray Beach, Oak Park. It is one of the many new homes built in the area. This one was completed this summer. It has a full basement.

Although growth in home construction has not been spectacular in the Charlestown area the last 10 years, one area has shown steady development. High View subdivision started by Willis B. Worrow and C. R. Lutz was started in 1956. 30 acres were subdivided into 58 lots. All the lots have been sold with the exception of 10. The subdivision is just west of the Charlestown City limits.

24 homes have been erected in that time. Many of the home owners purchased more than one lot so that they could have plenty of space.

Several years after the start of High View, Mr. Morrow purchased 50 additional acres and has subdivided it into what is called "Lake View". He built a three and half acre lake on the property and erected his home facing the lake.

This plot contains 81 lots. Nine home have been built or started in this area. Three homes were started this week, one last week.

Many of those building in this area also purchased more than one lot to control the area around them and to keep from overcrowding.

Mr. Morrow attributes the success of the venture with good water, plenty of trees, and good roads. He personally financed the building of a mile and a half of four inch water lines into the two subdivisions.

Good water is now available to each lot.

There is a six acre recreation area adjoining the lake. In the center of another plotted area is a three acre area for playground, softball diamond and possible tennis courts. There are also trees enough for a picnic area.

Roads have been stubbed off so that they can be tied into adjoining property that may later be subdivided and developed.

When the water line was layed, complete cooperation was given by the City of Charlestown.

The 80 acre area is now dotted with nice homes on beautiful wood land and is considered a distinct asset to the community. The homes have added a considerable tax base to the community. Growth is such that a new school bus route was necessary to carry the children to schools.

Dreyer jerseys Have completed Testing program

The registered Jersey cow or cows owned by Norman A. Dreyer and son, Sellersburg, have

A

Canl

Figure 6 –Lake View subdivision article referencing the 1956 start of the subdivision (58 lots) followed by the start several years later (unspecified) of the High View Subdivision, *The Charlestown Courier*, October 3, 1963.

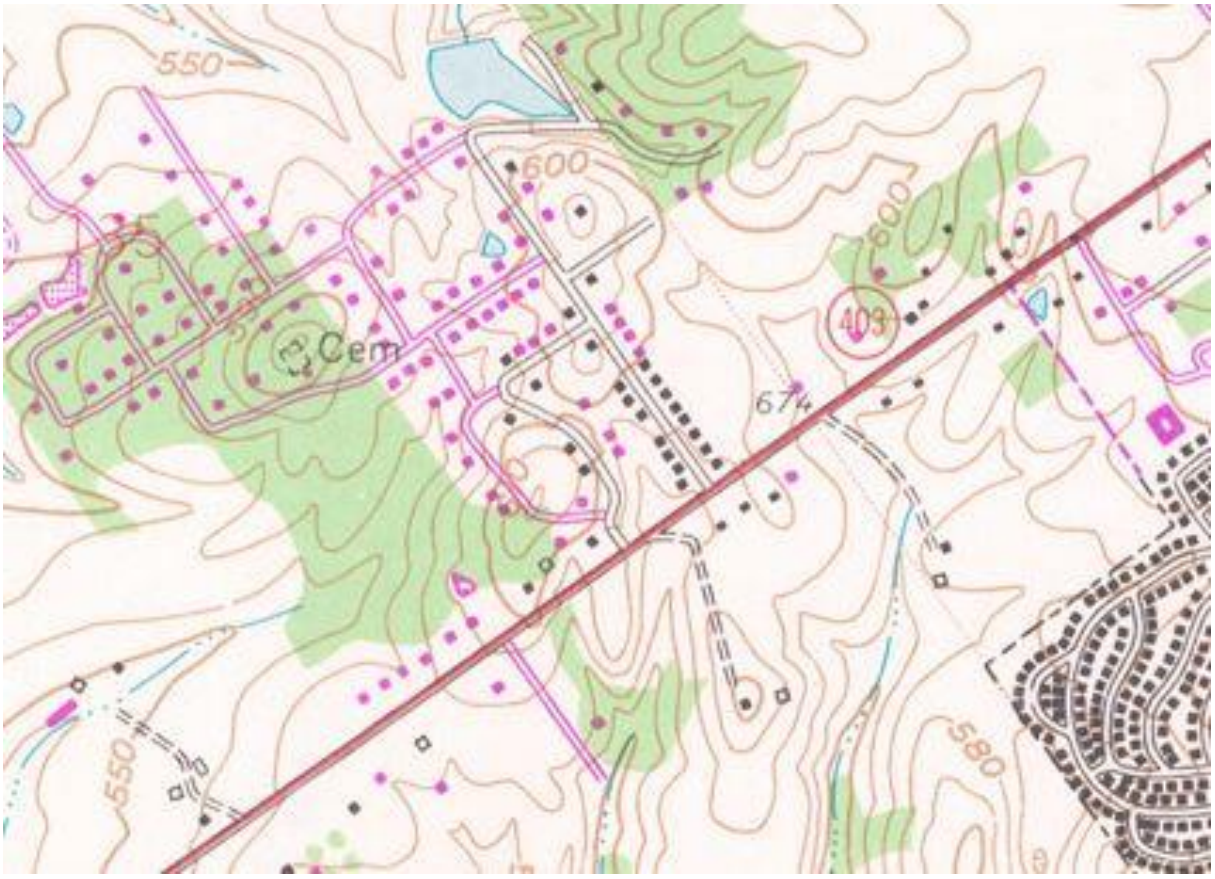


Figure 7 – 1981 Topographic map showing the build-out of the High View and Lake View subdivisions. New homes and streets shown in purple was constructed between 1963 and 1981.

Figure 1 N. Charlestown – 1950 Topographic Map

Figure 2 N. Charlestown – 1963 Topographic Map showing additional home additions

Water Lines Are To Be Extended North On 3

Clark County HD Clubs To Observe Achievement Day

Clark County Home Demonstration Clubs will observe Achievement Day October 1, at the New Washington High School Gymnasium. Registration will be gin at 9:30 a.m. and the program at 10:00 a.m.

The business session which will include the presidents' report, election of officers and the memorial service, will be conducted during the morning. The luncheon will be served at noon by the New Washington Band Parents Club.

During the afternoon session the Home Demonstration Chorus from Floyd County will present a musical program. Several skits will be presented by the club members, depicting lessons that have been taught during the past year. In addition to the skits, the clubs will have on display various exhibits showing the type of work done by Clark County women.

Mrs. Eva Allen, Home Demonstration Council President, will predside during the day's activities. The installation of new officers for 1956 will be conducted by Mrs. James Lawson, former Clark County Home Demonstration Agent.

Charlestown water lines will be extended into the North Charlestown area to give residents of that community, now depending on well water, an opportunity to make their own connections.

Charlestown's Board of Public Works and Safety authorized extension of the water main to Miller's Chapel on State Road 3, about 2,000 feet away. It will cost about $6,000.

Mayor Merrill Huffstetter said this plan was adopted over a proposal by North Charlestown's nearly 130 homeowners that the City extend the lines and make the connections. This project would have cost nearly $60,000. The money, Huffstetter said, wasn't available. Charlestown has a Municipal Waterworks.

The new line will be installed next year.

North Charlestown petitioned

Fall Festival On Tap At New Washington

The New Washington P.-T.A. will hold their Fall Festival, Saturday, October 8, at New Washington High School.

Free prizes will be awarded. Turkey and fish dinners are the menu and as usual, a g time is assured to all.

Figure 3 – North Charlestown water main extension article, *The Charlestown Courier*, September 29, 1955.

Figure 4 N. Charlestown – 1963 Topographic Map – 1981 Photo-revised. Glendale subdivision at right and Hospital at top shown in purple. Purple shows homes and buildings added between 1963 and 1981.

Figure 4 2016 Water System Map. All lines east of SR 3 are incorrectly listed as 2003 vintage. All lines west of SR 3 are incorrectly listed as 1978 vintage. The aqua colored line along SR 3 is correctly shown as 1967.

Water Main Length (feet) by Pipe Diameter, Material, and Reported Year Installed
Based on Banning ArcGIS Map (2016)

Main Dia.	AC 1967	CI 1940	CI 1967	CI 1969	DI 1985	GI 1967	GI 1978
0.75		783					
1		178					1,363
1.25		879					647
1.5							
2		6,923					7,078
3		717					825
4		4,537					20,239
6		19,391	8,234	106		656	4,931
8	21,473	1,343				3,753	5,108
10							
12		6,627					
16					14,546		
Total	21,473	41,378	8,234	106	14,546	4,409	40,191
By Pipe	21,473		49,718		14,546	44,599	
Percent	7%		17%		5%	15%	

Main Dia.	PVC 1967	PVC 1969	PVC 1978	PVC 1985	PVC 1988	PVC 1997	PVC 1999	PVC 2003	Total Feet
0.75									783
1							351	388	2,280
1.25									1,525
1.5					387				387
2		3,061			4,410	862	1,604	3,145	27,083
3						6,987			8,529
4		489			1,355			38,864	65,484
6	2,321	21,273	6,036		3,884	7,801	8,916	5,989	89,537
8		4,085		451			18,737	6,014	60,964
10									0
12		209		462	6,697				13,996
16		184	5,669						20,399
Total	2,321	29,302	11,706	913	16,733	15,650	29,607	54,399	290,967
By Pipe				160,631					290,967
Percent				55%					100%

CITY OF CHARLESTOWN

CLERK TREASURERS OFFICE

304 MAIN CROSS STREET
CHARLESTOWN, IN 47111

Fax

Subject: Certification Letter

Date: 7/25/07

To: IDEM

Fax Number: 317 - 308-3340

From: Nancy

Phone Number: (812) 256-7126
Fax Number: (812) 256-7144

40/30 Certification Letter (Schedules 3 and 4)

System Information

PWS Name: City of Charlestown PWS ID: 5210003

Street Address: 304 Main Cross Population Served: 2800

City, State, Zip: Charlestown IN 47111

Source Water Type: ☑ Ground ☐ Surface/GWUDI

System Type: ☑ CWS ☐ NTNCWS

Combined Distribution System: ☑ Wholesale (sells water to another public water system)
☐ Consecutive (buys water from another public water system)
☐ Neither

Contact Person

Name: Allan Lesnet Title: Director Water

Phone Number: 812-256-7126 Fax Number (if available): 812-256-7144

Address: 304 Main Cross St

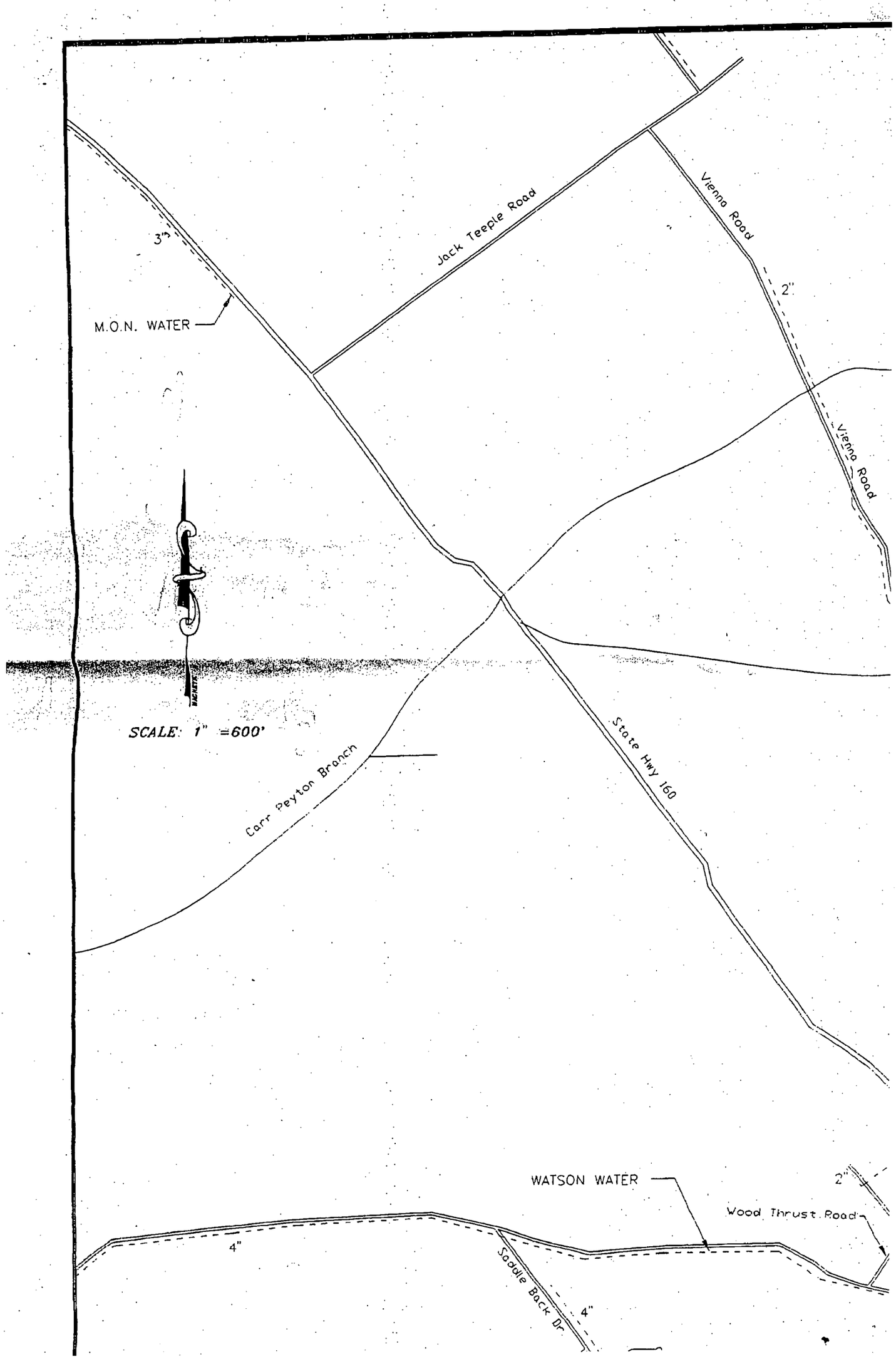
City: Charlestown State: IN Zip: 47111

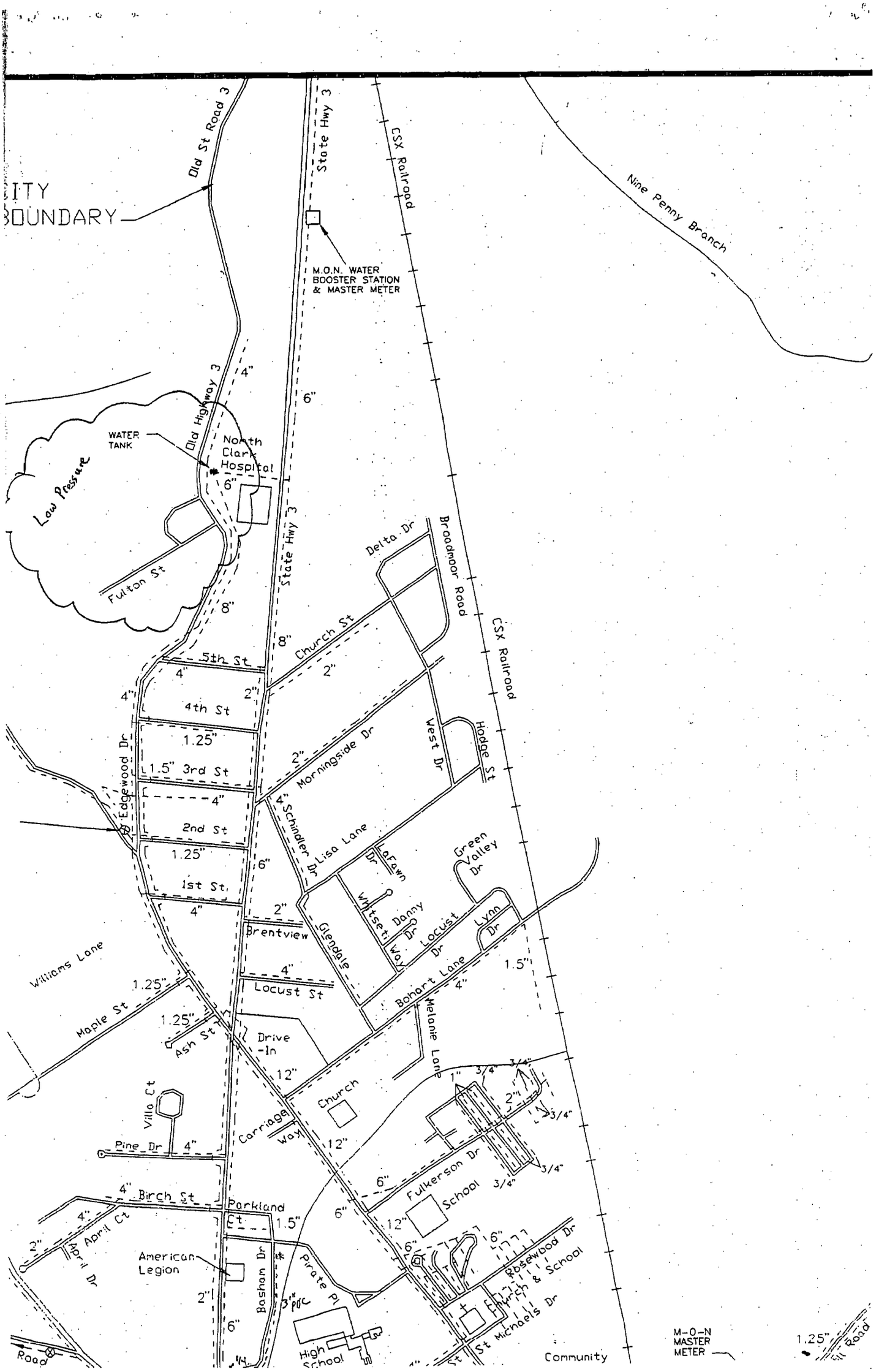
Email Address (if available): CTownNancy@Aol.com

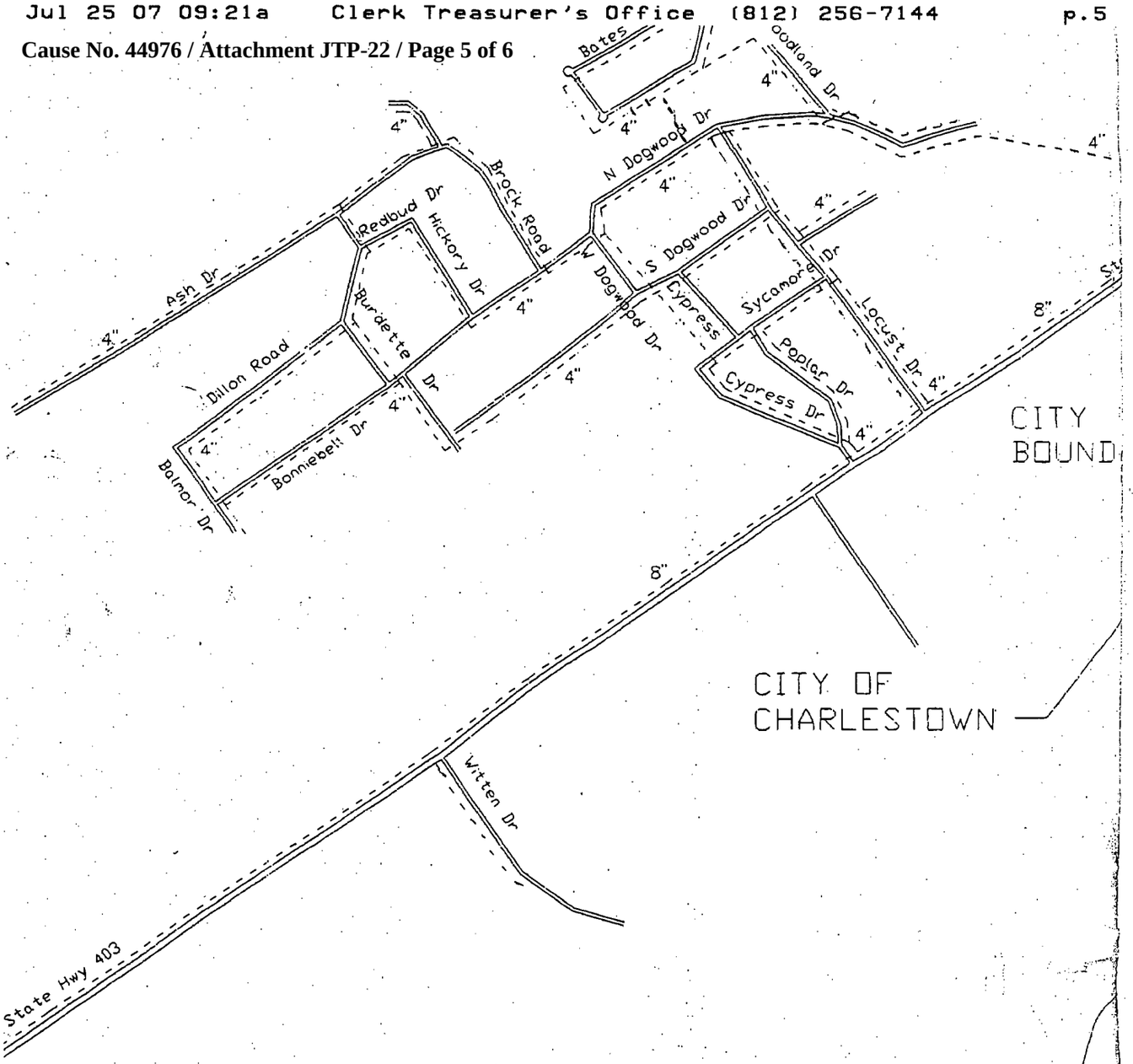
Certification

I hereby certify that each individual Stage 1 DBPR compliance sample collected from 2004 to 2006 was less than or equal to 0.040 mg/L for TTHM and 0.030 mg/L for HAA5. I understand that to be eligible, each individual sample must be equal to or below these values. I also certify that this PWS collected all required Stage 1 DBPR samples and did not have any Stage 1 DBPR monitoring violations during this time period.

Signature: Allan Lesnet Date: 7-18-07


3"
M.O.N. WATER
Jack Teeple Road
Vienna Road
2"
Vienna Road
SCALE: 1" =600'
Carr Peyton Branch
State Hwy 160
WATSON WATER
2"
Wood Thrust Road
4"
Saddle Back Dr
4"

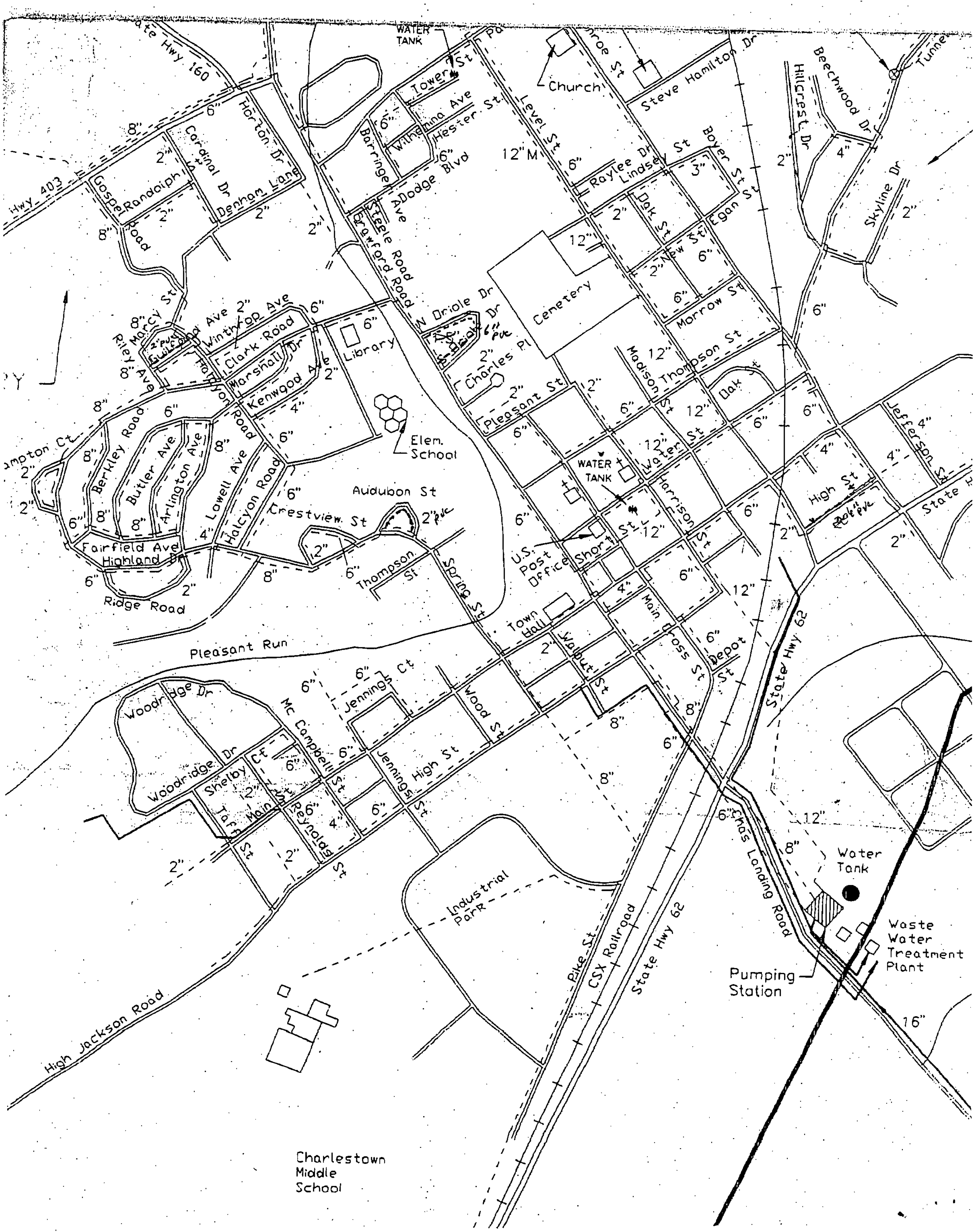

ITY
BOUNDARY
Old St Road 3
State Hwy 3
CSX Railroad
Nine Penny Branch
M.O.N. WATER
BOOSTER STATION
& MASTER METER
WATER
TANK
Low Pressure
Old Highway 3
North
Clark
Hospital
Fulton St
Delta Dr
Broadmoor Road
Church St
5th St
4th St
3rd St
2nd St
1st St
Edgewood Dr
Morningside Dr
West Dr
Hodge St
Schindler Dr
Lisa Lane
Brentview
Glendale
Locust St
Green
Valley
Dr
Danny
Dr
Locust
Dr
Lynn
Dr
Bonart Lane
Melanie Lane
Williams Lane
Maple St
Ash St
Drive
-In
Church
Villa Ct
Pine Dr
Carriage
Way
Fulkerson Dr
School
Birch St
Parkland
Ct
April Ct
April Dr
American
Legion
Bashan Dr
Pirate Pl
High
School
Rosewood Dr
Church &
School
St Michaels Dr
Community
M-O-N
MASTER
METER
Road



CITY OF CHARLESTOWN WATER SYSTEMS

NOTE: THESE MAPS ARE COMPILED FROM OLD MAPS, DRAWINGS, PLANS AND SOME SURVEYS. PLEASE MARK ANY CHANGES YOU FIND AND RETURN THEM TO JACOBI, TOOMBS & LANZ, INC.

MAP PREPARED BY: JACOBI, TOOMBS & LANZ, INC. 120 BELL AVE. CLARKSVILLE, INDIANA


WATER TANK
Church
Steve Hamilton Dr
Hillcrest Dr
Beechwood Dr
Skyline Dr
Tower St
Wilhemina Ave
Hester St
Barringer Ave
Dodge Blvd
Level St
Horton Dr
Cardinal Dr
Randolph St
Gospel Road
Denham Lane
Hwy 403
Raylee Dr
Lindsey St
Boyer St
Oak St
Egan St
New St
Morrow St
Steele Road
Crawford Road
Cemetery
N Oriole Dr
Charles Pl
Pleasant St
Madison St
Thompson St
Jefferson St
Water St
High St
Library
Clark Road
Winthrop Ave
Marshall Dr
Kenwood Ave
Riley Ave
Elem. School
Berkley Road
Butler Ave
Arlington Ave
Lowell Ave
Halcyon Road
Crestview St
Audubon St
Fairfield Ave
Highland Dr
Ridge Road
Thompson St
Spring St
U.S. Post Office
Short St
Harrison St
Town Hall
Walnut St
Main Cross St
Depot St
Pleasant Run
State Hwy 62
Jennings Ct
Wood St
Woodridge Dr
Mc Campbell St
Shelby Ct
Main St
Taff St
Reynolds St
Jennings St
High St
Industrial Park
Pike St
CSX Railroad
State Hwy 62
Chas Landing Road
Water Tank
Waste Water Treatment Plant
Pumping Station
High Jackson Road
Charlestown Middle School


CHARLESTOWN WATER SYSTEM
SILVER CREEK
MICHIGAN AVE
STATE HWY. #403
KENTUCKY AVE
LINCOLN AVE
MAPLE ST.
VERMONT AVE
LOUISVILLE CEMENT
N
0 400 800 1200 1600
PRIVATE LINE 1 MILE OF 4" PIPE FOLLOWED BY 600' OF 1¼" PIPE
MARYSVILLE PUMP STATION 7/10 MILE FROM CITY LIMITS. 200 GPM.
STANDPIPE 258,000 GALS.
HOSP.
CITY BOUNDARY
GLENDALE SUBDIVISION
Retired
4" Retired
TO SPEED AND LOUISVILLE CEMENT
KENTLAND SUB.
2" P.V.C.
1½ MILES TO GROUND STORAGE TANK
.25 MG GROUND STORAGE (NOT IN SERVICE)
HIGH SCH.
TANK #2 50,000 GAL ELEV. 724.50
POWER LINE
SCHOOL
PARK
TANK #1 75,000 GAL ELEV. 734.50
TO MARYSVILLE WATER CORP.
2"WL, 2400' BEYOND CITY LIMITS
INDUSTRIAL PARK
STATE HWY. 62
MAIN PUMP STATION
1.5 M.G. GROUND STORAGE TANK
LEGEND
12" WL
8" WL
6" WL
5" WL
4" WL
3" WL
2" WL
<2" WL
FIRE HYDRANTS
FLUSH HYDRANT
CHARLESTOWN

10-03-09-600-004.000-003 **CHARLESTOWN WATER COMP** **LANDING ROAD** **620, Exempt, County** **chas comm twp base dist 0**

General Information

Parcel Number
10-03-09-600-004.000-003

Local Parcel Number
03-00020-006-0

Tax ID:

Routing Number
013.000

Property Class 620
Exempt, County

Year: 2016

Location Information

County
Clark

Township
CHARLESTOWN TOWNSHIP

District 003 (Local 003)
CHARLESTOWN TWP

School Corp 1010
GREATER CLARK COUNTY

Neighborhood 10034001
chas comm twp base dist 03

Section/Plat

Location Address (1)
LANDING ROAD
CHARLESTOWN, IN 47111

Zoning

Subdivision

Lot

Market Model
N/A

Characteristics

Topography	Flood Hazard
Level	☐
Public Utilities	**ERA**
All	☐
Streets or Roads	**TIF**
Paved	☐

Neighborhood Life Cycle Stage
Static

Printed Thursday, May 26, 2016

Ownership

CHARLESTOWN WATER COMPANY
CHARLESTOWN, IN 47111

Legal

GT 96 3.9A

Transfer of Ownership

Date	Owner	Doc ID	Code	Book/Page	Sale Price
01/01/1900	CHARLESTOWN WATER		WD	/	$0

Notes

7/29/2013 : **REASSESSMENT** NO CHANGE MADE TO PROPERTY. (BL - HD)

10/2/2012 GENERAL :
REASSESSMENT-SF/BL-ADDED UTL STOR BLDG, UTL SHED AND FENCING

Exempt

Valuation Records (Work In Progress values are not certified values and are subject to change)

2016	Assessment Year	2016	2015	2014	2013	2012
WIP	Reason For Change	Annual-Adj	GenReval	Annual-Adj	Annual-Adj	GenReval
03/10/2016	As Of Date	05/12/2016	05/26/2015	06/03/2014	07/13/2013	09/06/2012
Indiana Cost Mod	Valuation Method	Indiana Cost Mod	Indiana Cost Mod	Indiana Cost Mod	Indiana Cost Mod	Indiana Cost Mod
1.0000	Equalization Factor	1.0000	1.0000	1.0000	1.0000	1.0000
	Notice Required	☑	☑	☑	☑	☑
$136,500	**Land**	**$136,500**	**$136,500**	**$136,500**	**$136,500**	**$136,500**
$0	Land Res (1)	$0	$0	$0	$0	$0
$0	Land Non Res (2)	$0	$0	$0	$0	$0
$136,500	Land Non Res (3)	$136,500	$136,500	$136,500	$136,500	$136,500
$13,200	**Improvement**	**$13,200**	**$13,200**	**$13,400**	**$12,900**	**$0**
$0	Imp Res (1)	$0	$0	$0	$0	$0
$0	Imp Non Res (2)	$0	$0	$0	$0	$0
$13,200	Imp Non Res (3)	$13,200	$13,200	$13,400	$12,900	$0
$149,700	**Total**	**$149,700**	**$149,700**	**$149,900**	**$149,400**	**$136,500**
$0	Total Res (1)	$0	$0	$0	$0	$0
$0	Total Non Res (2)	$0	$0	$0	$0	$0
$149,700	Total Non Res (3)	$149,700	$149,700	$149,900	$149,400	$136,500

Land Data (Standard Depth: Res 100', CI 100')

Land Type	Pricing Method	Soil ID	Act Front.	Size	Factor	Rate	Adj. Rate	Ext. Value	Infl. %	Res Elig %	Market Factor	Value
11	A		0	3.9000	1.00	$35,000	$35,000	$136,500	0%	0%	1.0000	$136,500

Data Source N/A **Collector** **Appraiser**

Land Computations

Calculated Acreage	3.90
Actual Frontage	0
Developer Discount	☐
Parcel Acreage	0.00
81 Legal Drain NV	0.00
82 Public Roads NV	0.00
83 UT Towers NV	0.00
9 Homesite	0.00
91/92 Acres	0.00
Total Acres Farmland	0.00
Farmland Value	$0
Measured Acreage	0.00
Avg Farmland Value/Acre	0.0
Value of Farmland	$0
Classified Total	$0
Farm / Classifed Value	$0
Homesite(s) Value	$0
91/92 Value	$0
Supp. Page Land Value	
CAP 1 Value	$0
CAP 2 Value	$0
CAP 3 Value	$136,500
Total Value	**$136,500**

10-03-09-600-004.000-003 **CHARLESTOWN WATER COMP** **LANDING ROAD** **620, Exempt, County** **chas comm twp base dist 0**

General Information

Occupancy	C/I Building	**Pre. Use**	Utility / Storage
Description	C/I Building	**Pre. Framing**	Fire Resistant
Story Height	1	**Pre. Finish**	Unfinished

	SB	B	1	U
Wall Type			1(108')	
Heating			720 sqft	
A/C				
Sprinkler				

Plumbing RES/CI

	#	TF	#	TF
Full Bath		0		0
Half Bath		0		0
Kitchen Sinks		0		0
Water Heaters		0		0
Add Fixtures		0		0
Total	0	0	0	0

Roofing

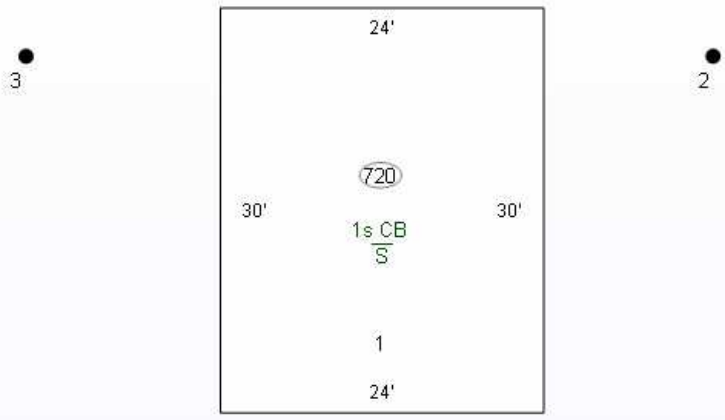
☐ Built Up ☐ Tile ☐ Metal
☐ Wood ☐ Asphalt ☐ Slate
☐ Other

GCK Adjustments

☐ Low Prof ☐ Ext Sheat ☐ Insulatio
☐ SteelGP ☐ AluSR ☐ Int Liner
☐ HGSR ☐ PPS ☐ Sand Pnl

Exterior Features

Description	Area	Value



Floor/Use Computations

Pricing Key	GCM
Use	UTLSTOR
Use Area	720 sqft
Area Not in Use	0 sqft
Use %	100.0%
Eff Perimeter	108'
PAR	15
# of Units / AC	0
Avg Unit sz|dpth	0
Floor	1
Wall Height	13'
Base Rate	**$97.71**
Frame Adj	$0.00
Wall Height Adj	($1.90)
Dock Floor	$0.00
Roof Deck	$0.00
Adj Base Rate	**$95.81**
BPA Factor	1.00
Sub Total (rate)	**$95.81**
Interior Finish	$0.00
Partitions	$0.00
Heating	$0.00
A/C	$0.00
Sprinkler	$0.00
Lighting	$0.00
Unit Finish/SR	$0.00
GCK Adj.	$0.00
S.F. Price	**$95.81**
Sub-Total	
Unit Cost	$0.00
Elevated Floor	$0.00
Total (Use)	**$68,983**

Special Features

Description	Value

Other Plumbing

Description	Value

Building Computations

Sub-Total (all floors)	**$68,983**	Garages	$0
Racquetball/Squash	$0	Fireplaces	$0
Theater Balcony	$0	**Sub-Total (building)**	**$68,983**
Plumbing	$0	Quality (Grade)	$62,086
Other Plumbing	$0	Location Multiplier	0.90
Special Features	$0	**Repl. Cost New**	**$55,876**
Exterior Features	$0		

Summary of Improvements

Description	Res Eligibl	Story Height	Construction	Grade	Year Built	Eff Year	Eff Age	Co nd	Base Rate	LCM	Adj Rate	Size	RCN	Norm Dep	Remain. Value	Abn Obs	PC	Nbhd	Mrkt	Improv Value
1: C/I Building	0%	1	Concrete Block	D+2	1963	1963	53	A		0.90			$55,876	80%	$11,180	0%	100%	1.00	1.0000	$11,200
2: Utility Shed	0%	1	SV	C	2005	2005	11	A		0.90		10'x16'		35%		0%	100%	1.00	1.0000	$1,000
3: Fencing	0%	1		D	1985	1985	31	A	$12.80	0.90	$17.26	384' x 7'	$4,772	80%	$950	0%	100%	1.00	1.0000	$1,000

Total all pages $13,200 **Total this page** $13,200

AFFIRMATION

I affirm, under the penalties for perjury, that the foregoing representations are true.

James T. Parks
Indiana Office of Utility Consumer Counselor

November 2, 2017
Date

Cause No. 44976
Indiana-American Water Co., Inc.
Charlestown Municipal Water

CERTIFICATE OF SERVICE

This is to certify that a copy of the foregoing ***OUCC's Testimony of James T. Parks: Public's Exhibit No. 4*** has been served upon the following counsel of record in the captioned proceeding by electronic service on November 2, 2017.

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Hillary J. Close
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Indianapolis, Indiana 46204
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hillary.close@btlaw.com
lauren.box@btlaw.com

City of Charlestown, Indiana
David McGimpsey
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DMcGimpsey@bgdlegal.com

Alex Gude
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Indianapolis, IN 46204
agude@bgdlegal.com

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J. David Agnew
Christopher L. King
LORCH NAVILLE WARD LLC
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dagnew@LNWLegal.com
cking@lnwlegal.com

Daniel M. Le Vay, Atty. No. 22184-49
Deputy Consumer Counselor

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infomgt@oucc.in.gov
317/232-2494 – Phone
317/232-5923 – Facsimile