COMMONWEALTH OF KENTUCKY BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:		
U.S.60 WATER DISTRICT)	
)	CASE NO. 2015-00037
ALLEGED FAILURE TO COMPLY WITH)	
807 KAR 5:006, SECTIONS 26 AND 27,)	
AND 807 KAR 5:066, SECTION 7)	

ORDER

U.S. 60 Water District ("U.S. 60") is a water district organized pursuant to KRS Chapter 74 that engages in the distribution of water to the public for compensation and is a utility subject to the Commission's jurisdiction.¹

KRS 278.030 requires every utility to furnish adequate, efficient and reasonable service. KRS 278.260 permits the Commission, upon its own motion, to investigate any act or practice of a utility that affects or is related to the service of a utility. KRS 278.280(1) further permits the Commission, after conducting such investigation and finding that a practice is unreasonable, unsafe, improper, or inadequate, to determine the reasonable, safe, proper, or adequate practice or methods to be observed and to fix same by Order.

On August 9, 2014, at approximately 5:30 p.m., a U.S. 60 water storage stand pipe in Waddy, Kentucky, catastrophically failed. As detailed in an Amended Commission Staff Incident Investigation Report ("Investigation Report"), attached as

¹ KRS 278.010(3)(d); KRS 278.015.

Appendix A to this Order,² the Waddy stand pipe was a 177,000-gallon glass-lined bolted steel stand pipe. The Investigation Report alleges that the tank seams failed near the foundation, resulting in the immediate evacuation of the tank's water supply and further resulting in the upper half of the tank's catastrophically detaching and falling from the stand pipe base.

The Investigation Report further states that U.S. 60's general manager, David Hedges, was informed of the collapse at 5:32 p.m. on August 9, 2014. At 7:23 p.m. on August 9, 2014, Mr. Hedges called the Commission's consumer complaint hotline, but did not leave a voicemail. No further efforts to contact the Commission or Commission Staff pursuant to the 2012 Emergency Notification Guidelines² were undertaken.

The stand pipe's collapse did not result in any injuries. However, a nearby church maintenance shed was destroyed. The church itself, an additional building, and a parked vehicle were also damaged. The total damages exceed \$25,000.

The most recent internal inspection of the Waddy stand pipe was conducted on June 21, 2011. U.S. 60 engaged Liquid Engineering Corporation ("Liquid Engineering") to conduct the internal inspection of the Waddy stand pipe. In its inspection report, Liquid Engineering notes that the tank exhibited metal loss at the interior wall seams and recommended that U.S. 60 install cathodic protection and reinspect the tank every three to five years. In the accompanying inspection video, the Liquid Engineering inspector verbally recommended having a diver take a closer look at the visible pitting

² The original Commission Staff Incident Investigation Report is attached as Appendix B to this Order.

and commented that corrosion was "fairly aggressive" and "starting to eat its way upward."3

Based upon Commission Staff's Investigation Report and U.S. 60's Accident Report,³ and being otherwise sufficiently advised, the Commission finds that prima facie evidence exists that U.S. 60 has failed to comply with the three following regulations:

First, 807 KAR 5:006, Section 26(6)(b), which states:

The utility shall annually inspect all structures pertaining to purification for their safety, physical and structural integrity, and for leaks, including sedimentation basins, filters, and clear wells; chemical feed equipment; pumping equipment and water storage facilities, including electric power wiring and controls; and hydrants, mains, meters, meter settings and valves.

The second alleged violation is in regard to 807 KAR 5:066, Section 7, which provides:

Design and construction of the utility's facilities shall conform to good standard engineering practice. Plans and specifications for water supplies shall be prepared by an engineer registered in Kentucky, with the submitted plans bearing the engineer's seal. The utility's facilities shall be designed, constructed and operated so as to provide adequate and safe service to its customers and shall conform to requirements of the Natural Resources Cabinet with reference to sanitation and potability of water.

Finally, we find that prima facie evidence exists that U.S. 60 failed to comply with 807 KAR 5:006, Section 27, which states, in pertinent part:

(1) Within two (2) hours following discovery each utility, other than a natural gas utility, shall notify the commission

³ June 21, 2011 Liquid Engineering Video, 12:55:00-12:55:11; 12:55:45-12:55:14; and 12:56:16; ftp://162.114.3.167/2015-00037/US_60 Water District Inspection 06212011.wmv.

⁴ Appendices D and E to the Commission Investigation Report.

by telephone or electronic mail of a utility related accident that results in:

(b) Actual or potential property damage of \$25,000 or more;

We therefore find that a formal investigation into the incident that is the subject matter of the Investigation Report is necessary. This investigation will determine whether U.S. 60 violated any of the three above-referenced regulations and, if so, whether any reason exists why penalties should not be assessed under KRS 278.990.

The Commission, on its own motion, HEREBY ORDERS that:

- 1. U.S. 60 shall submit to the Commission, within 20 days of the date of this Order, a written response to the three allegations contained in the Investigation Report and the alleged regulatory violations as set forth in the findings above.
- 2. U.S. 60 shall appear on June 30, 2015, at 10:00 a.m. Eastern Daylight Time, in Hearing Room 1 of the Commission's offices at 211 Sower Blvd. in Frankfort, Kentucky, for the purpose of presenting evidence concerning the three alleged violations of 807 KAR 5:006 and showing cause why it should not be subject to the penalties prescribed in KRS 278.990(1) for these alleged violations.
 - 3. The June 30, 2015 hearing shall be recorded by videotape only.
- 4. The Investigation Report in Appendix A is made a part of the record in this case.
- 5. Any requests for an informal conference with Commission Staff shall be set forth in writing and filed with the Commission within 20 days of the date of this Order.

By the Commission

ENTERED

APR 02 2015

KENTUCKY PUBLIC SERVICE COMMISSION

ATTEST:

Executive Director

APPENDIX A

APPENDIX TO AN ORDER OF THE KENTUCKY PUBLIC SERVICE COMMISSION IN CASE NO. 2015-00037 DATED APR 0 2 2015

Steven L. Beshear Governor

Leonard K. Peters Secretary Energy and Environment Cabinet



Commonwealth of Kentucky

Public Service Commission
211 Sower Blvd.
P.O. Box 615

P.O. Box 615 Frankfort, Kentucky 40602-0615 Telephone: (502) 564-3940 Fax: (502) 564-3460 psc.ky.gov David L. Armstrong Chairman

James W. Gardner Vice Chairman

Daniel E. Logsdon Jr. Commissioner

INCIDENT INVESTIGATION STAFF REPORT

Amended: March 25, 2015

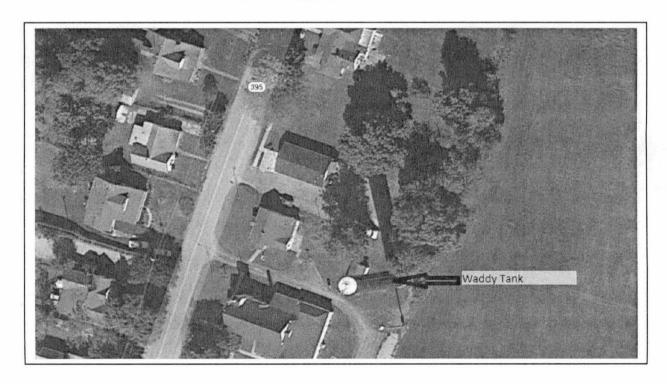
Incident Date: August 9, 2014

Utility: U.S. 60 Water District

Incident Location: 3130 Waddy Road

Waddy, KY 40076

PSC Investigator: Jason Pennell







Kentucky Public Service Commission

The Incident Investigation Staff Report that was prepared on October 7, 2014, is being amended as follows:

The report date has been revised to reflect the date of this amendment.

On the third page, first paragraph, last sentence, it was written that "During the narrative of the tank inspection video, the inspector commented that the interior of the tank condition was typical of the type and year of the tank". Upon request by Commission Legal staff the utility provided the video of the 2011 Waddy tank inspection. The video of the Liquid Engineering Waddy tank inspection was reviewed on January 23, 2015 and it was determined that the narrator does not use the language as was noted in the report. This sentence has been removed.

Also, on the third page, second paragraph, under Inspector Comments, it was written that "During discussions with Mr. Hedges he did not see a cause for concern with the tank due to the comments made by Liquid Engineering Corporation's inspector that the interior of the Waddy tank was "typical for a tank of its age and type". In review of the tank inspection video the words typical for a tank of its age and type were not used by the narrator in the inspection video. This paragraph has been removed because Mr. Hedge's comments were not recorded at the time of the inspection and cannot be confirmed.

The report with the amendments identified above is attached.

Submitted by:

Jason Pennell

Utility Regulatory and Safety Investigator III



Kentucky Public Service Commission

Water Utility Incident Report

Incident Investigation

Utility Description:

U.S. 60 Water District contracts North Shelby Water Company to manage and operate their water system. The manager of both systems is David Hedges. The utility provides water service to 2,368 customers.

Incident Description:

The failed Waddy water storage tank was a 177,000-gallon glass lined bolted steel stand pipe located behind the Waddy Baptist Church and Waddy Baptist Church Sunday school building on Waddy Road. This tank was built between 1979 and 1982. Based on observations at the site, the tank seems to have failed in its lower part above its concrete foundation facing the road where most of the water appeared to have exited. As the tank failed, its upper half appeared to have detached and fallen towards the backside approximately 135 feet from the tanks base.

Mr. Hedges informed Commission Staff that he received a call about the Waddy tank failure at 5:32 p.m. on Saturday August 9, 2014, from Paul Whitman with Shelby County Emergency Management. Mr. Hedges stated utility staff attempted to call the Public Service Commission at 7:23 p.m. of the same day. The utility states that they received no answer and that they did not leave a voice message, but did provide a picture of their attempt to call from their cell phone (Attachment A). The utility believes the tank failure happened at 5:30 p.m. based on reports from customers in the area who heard it fall.

Investigation Summary:

After being alerted to the Waddy water storage tank failure by reading Commission Staff email, Mr. Hedges was contacted by Commission Staff at 8:49 a.m. on August 11, 2014, to inquire about the status of the water tank. Mr. Hedges provided a brief overview and Commission Staff informed him that a site visit would be necessary to conduct an incident review.

No injuries were reported to the utility although possible property damage from the result of tank failure is in excess of \$25,000. Damage observed while onsite, was the church's maintenance shed which was completely demolished leaving only the concrete foundation that the maintenance shed was built on. The backside of the church's Sunday school building appeared to have damage. There also appeared to be damage to a parked car. Additional damage to the church's basement and foundation were described by representatives from the church who met with Commission Staff while onsite.

Continuity of service was discussed with Mr. Hedges and he expressed that due to the configuration of U.S. 60's distribution system, none of the utility's customers lost service or pressure due to the failure of the tank. Commission Staff requested copies of the inspections made on the tank by the utility. Commission Staff reviewed the video of the tanks interior made by Liquid Engineering Corporation and the utility provided a copy of the inspection report.

The tank is inspected by the utility employees at least once annually (Attachment B). On June 21, 2011, Liquid Engineering Corporation inspector Jason Fowler used a dive camera to inspect the interior of the Waddy tank. The camera is placed into the tank while the tank is still in service to take video of the condition of the tank. A copy of the report is attached (Attachment C).

Mr. Hedges was reminded of his obligation to submit a summary written report within 7 days to the Public Service Commission in accordance with 807 KAR 5:006, Section 27. On August 18, 2014, the utility emailed a summary written report by Warner A. Broughman III its Consulting Engineer (Attachment D). On August 20, 2014, Mr. Hedges was contacted and asked to provide a signed summary of the events by a representative of the utility.

On October 6, 2014, Mr. Hedges brought a copy of the utility's written accident report (Attachment E) and inspections the utility's employees had been making on the tank since 2012 (Attachment B).

Inspector Comments:

Liquid Engineering Corporation noted in their June 21, 2011 tank inspection that the interior wall seams show some metal loss along seam lines and that cathodic protection is recommended (Attachment C).

Utility authorized personnel attempted to call the Public Service Commission, but was unable to receive an answer and no additional attempts were made to notify the Commission.

Submitted by:

√ason Pennell

Utility Regulatory and Safety Investigator III

Attachments:

- A. Screen Shot of Utility's Call Made To Public Service Commission
- B. Utility Tank Inspections from 2012-2014
- C. Liquid Engineering Inspection Report From 2011
- D. Summary Written Report from Consulting Engineer
- E. Utility Summary Report
- F. Tank Pictures

Attachment A

1 (800) 772-4636

August 9, 2014

7:23 PM

Outgoing Call

1 minute

Call

FaceTime ¹

FaceTime Audio

Send Message

Create New Contact

Attachment B

Water Storage Inspection

Type: () Elevated () Ground Storag	() Standpipe ge ()
Size:	Location: WADDY TANK
Date Constructed: N/A	
Type Tank: () Welded Metal () Concrete	(/) Steel-lined Glass
Site:	
 Does site slope away from bank Is ground soft or soggy? 	(?) Yes () No () Yes () No
Foundations:	
 Is the concrete foundation crack Is the concrete foundation level Is there a gap between riser base Condition of anchor bolts? 	? (') Yes () No
Columns (Elevated Tanks Only)	
 Is there condensation on column Are they straight? Is there any slack in the diagonal Condition of bolted connection of the connection of th	() Yes () No al X-rods? () Yes () No
Tank or Shell	
 Any disfiguration in tank bottom steel? Are any weld seams concave? a. Are there any rust streaks or 	_ , , , , , , , , , , , , , , , , , , ,
 b. Any evidence of water leaking 3. Is there any metal loss by pitting 4. Condition of finish coat? 5. Condition of intermediate coat? 6. Condition of primer coat? 7. Amount of surface area showing 8. Any water ponding on roof? 	() Yes () No () Good () Fair () Poor () Good () Fair () Poor () Good () Fair () Poor

	<u>cessories</u>
1. 2. 3.	Is there a safety climbing device or cage on the ladder? () Yes () No Is there a target on tank? () Yes () No a. Is it working properly? () Yes () No Does the utility have a climbing harness? () Yes () No How often does the utility climb tank? () Day () Week () Month
4.	How often does the utility climb tank? () Day () Week () Month Other
5.	What is the condition of the overflow? () Good () Fair () Poor a. Does overflow have a screen or flapper? () Screen () Flapper () Neither
	b. Any evidence of cross connections? () Yes () No c. Rip-rap to prevent erosion at end of overflow? () Yes () No
Co	mments:
	J-15-12

Water Storage Inspection

Ту	rpe: () Elevated () Standpipe () Ground Storage ()						
Siz	ze:Location: WAOO] _	To	nk_		u é	* * *
Dε	ate Constructed:						
Ту	rpe Tank: () Welded Metal () Steel-lined () Concrete	∋las	S	,			
Sit	<u>e:</u>						
	Does site slope away from bank? Is ground soft or soggy?	('	/)	Yes Yes	(7	No No
Fo	undations:						,
1. Is the concrete foundation cracked? 2. Is the concrete foundation level? 3. Is there a gap between riser base and the concrete? 4. Condition of anchor bolts? () Yes () No () Yes () No							No No No No
<u>Co</u>	lumns (Elevated Tanks Only)						
2. 3.	Is there condensation on columns? Are they straight? Is there any slack in the diagonal X-rods? Condition of bolted connection on riser rods?	((())	Yes Yes Yes Yes	((()))	No No No No
<u>Ta</u>	nk or Shell			٠			
	Any disfiguration in tank bottom, shell, roof or irregularities steel? Are any weld seams concave?	()	e conto Yes Yes			ie No No
	a. Are there any rust streaks originating from the weld s	eam (is?	Yes	(١	No
4. 5. 6.	b. Any evidence of water leaking from tank? Is there any metal loss by pitting? Condition of finish coat? () Good Condition of intermediate coat? () Good Condition of primer coat? () Good	(((())))	Yes Yes Fair Fair Fair	` (((())))	No No Poor Poor Poor
	Amount of surface area showing rust?Any water ponding on roof?	()	Yes	()	No

<u>Ac</u>	<u>scessories</u>
2.	Is there a safety climbing device or cage on the ladder? () Yes () No Is there a target on tank? () Yes () No a. Is it working properly? () Yes () No Does the utility have a climbing harness? () Yes () No
4.	How often does the utility climb tank? ————————————————————————————————————
5.	What is the condition of the overflow? () Good () Fair () Poor a. Does overflow have a screen or flapper? () Screen () Flapper () Neither b. Any evidence of cross connections? () Yes () No c. Rip-rap to prevent erosion at end of overflow? () Yes () No
Cc	omments:
···········	

North Shelby Water Co Tank Inspection

11-20-17

Type: Elevated Standpipe **Ground Storage** Date Constructed: Welded Metal (/) Steel-lined Glass Concrete Site: 1. Does site slope away from bank? 2. Is ground soft or soggy? Foundations: 1. Is the concrete foundation cracked? No 2. Is the concrete foundation level? No. 3. Is there a gap between riser base and the concrete? 4. Condition of anchor bolts? Columns (Elevated Tanks Only) 1. Is there condensation on columns? 2. Are they straight? Yes 3. Is there any slack in the diagonal X-rods? 4. Condition of bolted connection on riser rods? Tank or Shell 1. Any disfiguration in tank bottom, shell, roof or irregularities in the contour of the steel? Yes 2. Are any weld seams concave? Yes a. Are there any rust streaks originating from the weld seams? No Yes Yes b. Any evidence of water leaking from tank? No 3. Is there any metal loss by pitting? Yes No 4: Condition of finish coat? Fair Poor Good (5. Condition of intermediate coat? Poor Good (6. Condition of primer coat? Good Poor 7. Amount of surface area showing rust?

8. Any water ponding on roof?

Yes

Accessories

1.	Is there a safety climbing device or cage on the ladder? () Yes () No							
	2. Is there a target on tank?							
	a. Is it working properly?	(∠) /Yes (() No					
3.	Does the utility have a climbing harness?	(/) Yes	() No					
4.	How often does the utility climb tank? () Day Other	() Week	() Month					
5.	What is the condition of the overflow? () Good	() Fair (() Poor					
	a. Does overflow have a screen or flapper?	•						
	() Screen () Flapper () Neither	•						
	b. Any evidence of cross connections?	() Yes (() No					
	c. Rip-rap to prevent erosion at end of overflow?	() Yes (() Yes (No					
Co	mments:							
	(Henter plug not work	m)						
	11-29-12							
	Ko	•						
								

North Shelby Water Co Tank Inspection

3-13-13

	2-12-13
•	ype: () Elevated (🗸) Standpipe () Ground Storage
	Size: Location: Wary Tak
Į	Pate Constructed:
7	ype Tank: () Welded Metal () Steel-lined Glass () Concrete
<u>8</u>	ite:
1	Does site slope away from bank? () Yes () No Is ground soft or soggy? () Yes () No
<u>F</u>	oundations:
2 3	Is the concrete foundation cracked? Is the concrete foundation level? Is there a gap between riser base and the concrete? Condition of anchor bolts? () Yes () No () Yes () No () Yes () No
<u>C</u>	<u>olumns</u> (Elevated Tanks Only)
2. 3.	Is there condensation on columns? Are they straight? Is there any slack in the diagonal X-rods? Condition of bolted connection on riser rods? () Yes () No () Yes () No
T	nk or Shell
_	Any disfiguration in tank bottom, shell, roof or irregularities in the contour of the steel? () Yes () No Are any weld seams concave? () Yes () No a. Are there any rust streaks originating from the weld seams?
4. 5. 6. 7.	b. Any evidence of water leaking from tank? Is there any metal loss by pitting? Condition of finish coat? Condition of intermediate coat? Condition of primer coat? Any water ponding on roof? () Yes () No () Yes () No () Poor () Good () Fair () Poor () Good () Fair () Poor () Poor () Yes () No

Accessories

 3. 4. 	Is there a safety climbing device or cage on the ladder? () Yes () No Is there a target on tank? () Yes () No a. Is it working properly? () Yes () No Does the utility have a climbing harness? () Yes () No How often does the utility climb tank? () Day () Week () Month Other utility climb tank?
5.	What is the condition of the overflow? () Good () Fair () Poor a. Does overflow have a screen or flapper? () Screen () Flapper () Neither b. Any evidence of cross connections? () Yes () No c. Rip-rap to prevent erosion at end of overflow? () Yes () No
Co	omments: Tran hater per one variance up cure.
	Over all condition is FAIR
	\sim
	//W/, 3-13-18

North Shelby Water Co Tank Inspection

Тур	e:	()	Elevated Ground Storage	(1)	Stan	dpipe					
Size):			e win ha zo w w as an awa	Locati	on: <u> </u>	<u>Vac</u>	<u>y</u> -	Tok			
Date	∋ Constri	ucte	d:									
Тур	∋ Tank:	()	Welded Metal Concrete	()	Steel	-lined (3lass				
Site:	;											
1. E 2. Is	oes site ground	slop soft	e a or	away from bank? soggy?	-			(~) ()	Yes Yes	() •}********	No No
Four	ndations:											
 Is Is 	the con there a	crete gap	e fo	oundation cracked? oundation level? tween riser base an oor bolts?	d the co	ncret	e?	() (~) ()	Yes Yes Yes Yes	(ya () } }	No No No No
Colu	<u>mns</u> (Ele	vate	ed 7	anks Only)					٠			
2. A 3. Is	re they s there ar	traig y∕sli	ht? ack	in the diagonal X-ro	ods? er rods?			() () ()	Yes Yes Yes Yes	((((1 (1 (1 (No No No No
Tank	or Shell										÷	
2. Ai	e any w	eld s	ear	in tank bottom, shell ns concave? rust streaks originat				()	Yes Yes	()		10 10
3. Is 4. Co 5. Co 3. Co 7. Ar	there an ondition on ondition on ondition of nount of	y me of fin of int of pr	etal ish ern ime ace	nediate coat?	(j	Good Good Good		Yes Yes Yes Fair Fair Fair		F	lo

Accessories

 3. 	. Is there a safety climbing device or cage on the ladder? () Yes () No . Is there a target on tank? () Yes () No a. Is it working properly? () Yes () No . Does the utility have a climbing harness? () Yes () No . How often does the utility climb tank? () Day () Week () Mon Other							
5.	What is the condition of the overflow? () Good (/ Fair () Poor a. Does overflow have a screen or flapper? () Screen (/ Flapper () Neither b. Any evidence of cross connections? () Yes () No c. Rip-rap to prevent erosion at end of overflow? (/ Yes () No							
Co	omments: No play for hyafer 11/26/13							

North Shelby Water Co Tank Inspection) Standpipe Type: Elevated **Ground Storage** Location: - Wtiddi Date Constructed: Steel-lined Glass Type Tank: Welded Metal Concrete Site: 1. Does site slope away from bank? 2. Is ground soft or soggy? Yes Foundations: 1. Is the concrete foundation cracked? No 2. Is the concrete foundation level? Νo 3. Is there a gap between riser base and the concrete? No 4. Condition of anchor bolts? Columns (Elevated Tanks Only) 1. Is there condensation on columns? No 2. Are they straight? 3. Is there any slack in the diagonal X-rods? 4. Condition of bolted connection on riser rods? Tank or Shell 1. Any disfiguration in tank bottom, shell, roof or irregularities in the contour of the steel? Yes Yes 2. Are any weld seams concave? a. Are there any rust streaks originating from the weld seams? Yes Yes-No b. Any evidence of water leaking from tank? Ýes No 3. Is there any metal loss by pitting? 4. Condition of finish coat? Poor Fair Good (5. Condition of intermediate coat? Good (Fair Poor 6. Condition of primer coat? Poor Good (Fair 7. Amount of surface area showing rust? 8. Any water ponding on roof? Yes

Accessories

	,	Yes Yes Yes Yes Week	No No No No Month
5.	 What is the condition of the overflow? () Good () a. Does overflow have a screen or flapper? () Screen () Flapper () Neither b. Any evidence of cross connections? () c. Rip-rap to prevent erosion at end of overflow? () 	Fair Yes Yes	Poor No No
Co	Comments:		

Attachment C

Liquid Engineering Corporation Steel Potable Water Reservoir Inspection Report (ROV)

Job Number: 40478

Utility: U.S. 60 Water Dist.

Date: 6-21-11

ROV Team: 10 Inspector: J.Fowler Tank Name: Waddy Interior Condition Findings **√** Good Fair Poor Comments: Roof Condition Fair **Roof Coating Condition** √ Good Poor Comments: **√** Good ☐ Fair Poor Comments: Bolted glass lined seams in good condition Roof Weld Condition ∏Fair ✓ Good Poor Comments: Wall Condition Fair Good Poor Comments: Glass lining in good condition Wall Coating Condition Good Fair Poor Comments: Wall Weld Condition Good Fair Poor Comments: Cannot evaluate due to sediment. Recommend cleaning. Floor Condition Fair Good Poor Comments: Concrete Floor Coating Condition Fair Good Poor Comments: None Floor Weld Condition Support Column Condition Good Poor Comments: None Good Fair Poor Comments: None Column Coating Condition Good Poor Comments: Corrosion noted on inlet outlet structure Plumbing Condition Good Fair Poor Comments: None Ladder Condition Yes 1 No Cathodic Protection Installed Comments: Recommended Yes V No Comments: Visible Leaking Exterior Condition Findings ∏Fair **√** Good Poor Comments: Vent Condition Fair Good Roof Condition Poor Comments: Fair Good-**Roof Coating Condition** Poor Comments: Glass lined Good Poor Comments: Bolted seams in good conditon Roof Weld Condition Good Poor Comments: Hatch Condition Good Fair Poor Comments: Wall Condition Good Fair Poor Comments: Wall Coating Condition Good Fair Poor Comments: Bolted Wall Weld Condition Good Fair Poor Comments: Foundation Condition Fair Good Poor Comments: **Ladder Condition** ☐ Fair Good **Plumbing Condition** Poor Comments: **V** No Yes Visible Leaking Comments: Additional Comments Interior wall seams show some metal loss along seam lines. Recommend cathodic protection

Recommend cleaning.

Inspect every 3-5 years.

Liquid Engineering Corporation Potable Water Reservoir Sanitary, Safety, Security (ROV)

Job Number: 40478

Utility: U.S. 60 Water Dist.

6-21-11 Date:

Inspector: J.Fowler

Tank Name: Waddy

ROV Team:

moposion on onio		Tarint Harris, T.	, , , , , , , , , , , , , , , , , , ,
Sanitary Condition Finding	s		
Vent Properly Screened?	X Yes	□No	Comments:
Hatch Sealed?	X Yes	No	Comments:
Hatch Properly Secured?	Yes	⊠ No	Comments: Recommend padlock.
Overflow Properly Screened?	Yes	No	Comments:
Holes in the Roof?	Yes	⊠ No	Comments:
Holes in the Walls?	Yes	⊠ No	Comments:
Manway Leaking?	Yes	⊠ No	Comments:
Safety Condition Findings			
Hatch Safety	⊠ Good	Fair Poor	Comments:
Ladder Safety	⊠ Good	Fair Poor	Comments:
Manway Safety	⊠ Good	Fair Poor	Comments:
Balcony Safety	⊠ Good	Fair Poor	Comments:
Handrail Safety	⊠ Good	Fair Poor	Comments:
Security Condition Finding	s		
Vent Security	⊠ Good	Fair Poor	Comments:
Hatch Security	⊠ Good	Fair Poor	Comments:
Ladder Security	⊠ Good	Fair Poor	Comments:
Fence Present?	Yes	⊠ No	Comments:
Adequate Lighting?	☐ Yes	⊠ No	Comments:
Summary Recommendatio	ns		
Recommend cleaning. Approxi	mately 1 inc	th of sediment	
- recentitions designed. Ubbioxi	STRUCTURE OF BUILDING	ALO: OCCINIONIL	

Recommend cathodic protection system.

Inspect every 3-5 years. Recommend padlock.

Attachment D

Pennell, Jason (PSC)

From:

Pete Hedges <petehedges@bellsouth.net>

Sent:

Monday, August 18, 2014 12:44 PM

To:

Pennell, Jason (PSC)

Subject:

Report of 8-9-14.docx

Attachments:

Report of 8-9-14.docx; ATT00001.txt

Report of Accident July 9, 2014

In accordance with the provisions of 807 KAR 5:006 Section 26 the US 60 Water District reports to the Kentucky Public Service Commission that its standpipe at Waddy, KY suffered a catastrophic collapse at approximately 5:20 pm on July 9, 2014. The tank was full with approximately 177,000 gallons of water. The control valve was off and the booster pump system was running, continuing to pump water to the District's tank at Driscoll Lane in Spencer County. The standpipe is a total loss.

The expelled water caused property damage to nearby structures in excess of \$25,000.

No loss of life or any injuries occurred as a result of the collapse.

No customers experienced a loss of service.

The apparent cause of the collapse was the sudden failure of a vertical seam in the lower panels of the bolted steel tank.

Warner A. Broughman III, PE Consulting engineer

Attachment E

RECEIVED

US 60 Water District

OCT 06 2014

PUBLIC SERVICE COMMISSION

Accident Report

On the 9th day of July 2014 at approximately 5:20pm our storage tank at Waddy Ky, collapsed. It had approximately 177,000 gallons in it at the time which was its capacity the control valve was closed and our booster pump station at Grafenburg was continuing to pump to other storage tanks in the system.

No loss of life or injuries occurred due to the tanks collapse. There was some property damage to nearby property we do not know any figures of how much but it will be in excess of the \$25,000 limit stated in 807 KAR 5:006 section 26.

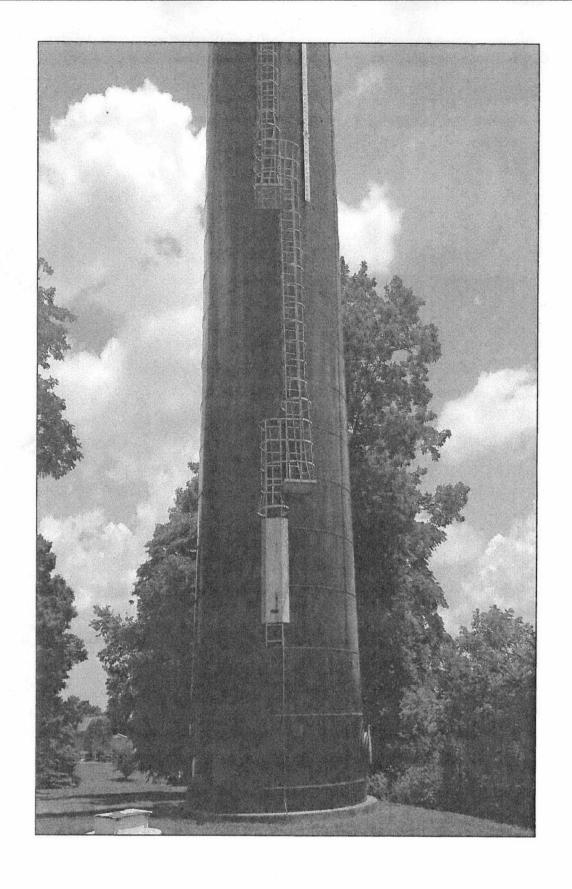
No customers experienced loss of service or pressure after the collapse other storage tanks have been able to keep up with demands of normal usage.

The apparent cause of the collapse was a sudden failure in a vertical seam in a lower panel which have bolted seams. The reason for the seam failure was due to corrosion which could not be seen during our regular inspection from the outside the tank looked pristine as do all of these glass lined tanks.

We had the tank inspected in 2011 by a outside firm who inspected the inside of the tank via remote operated vehicle the report from them did not indicate any significant issues that indicated this type of problem.

David Hedges General Manager

Attachment F



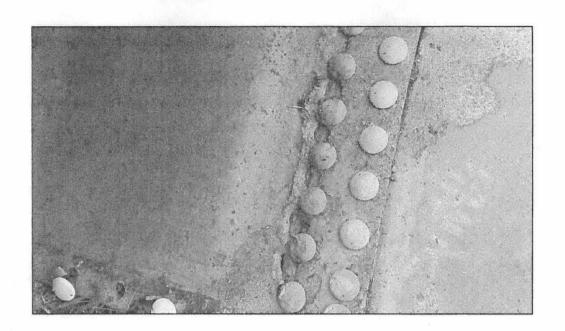
U.S. 60 Water District Water Storage Tank Picture Taken June 16, 2014



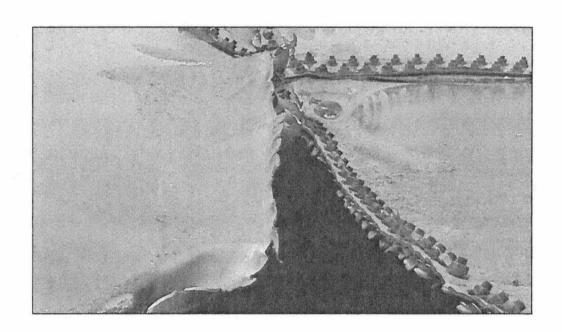
#1 Waddy tank sat behind the Waddy Baptist Church



#2
Tank valve pit that collapsed due to water pressure



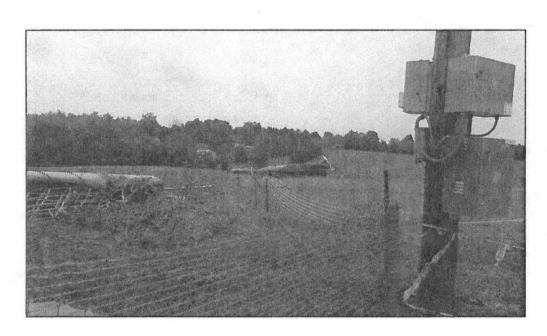
#3
Interior bolts of the Waddy tank



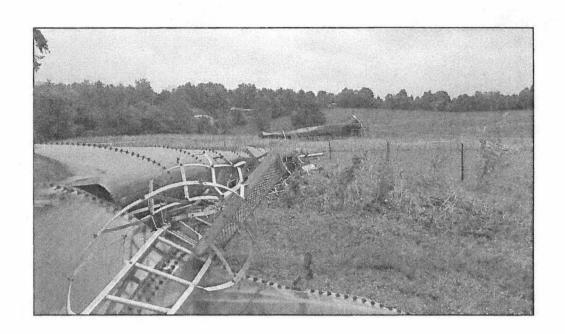
#4 Exterior of Waddy tank shows where the tank ripped up the horizontal seam



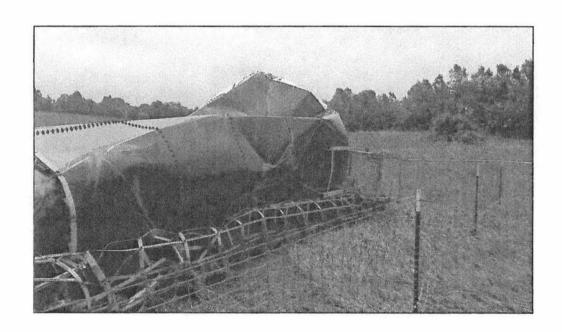
#5
Top section of the Waddy tank moved approximately 135 feet from base of the tank



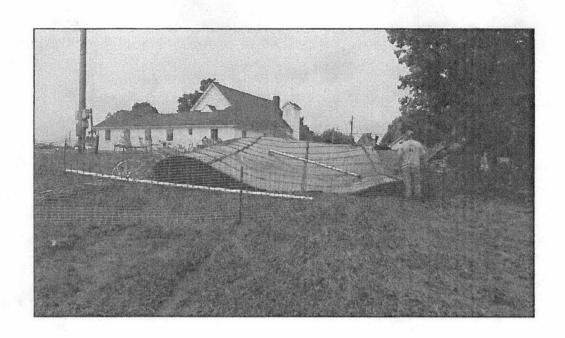
US 60 Water District has fenced off tank site and has utility employees watching the tank until clean up



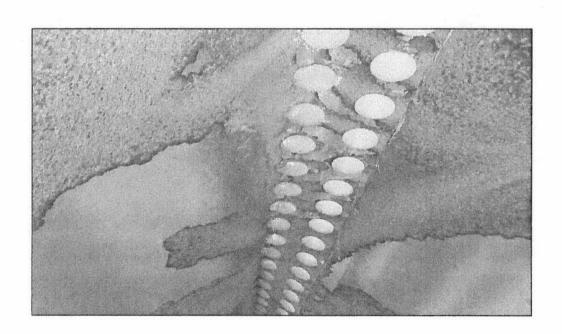
#7
Bottom section of tank



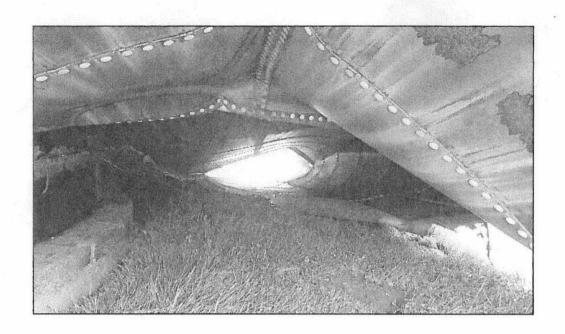
#8
Top section of the tank



#9
Bottom section of tank and Waddy Baptist Church



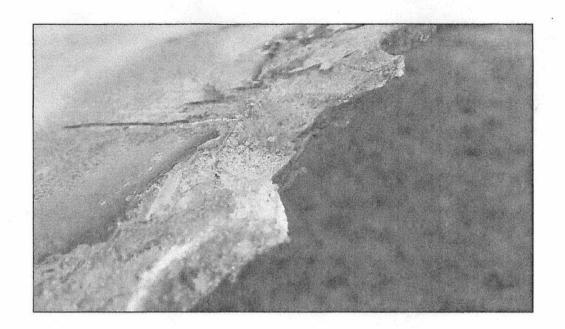
#10 Interior vertical seem of Waddy tank



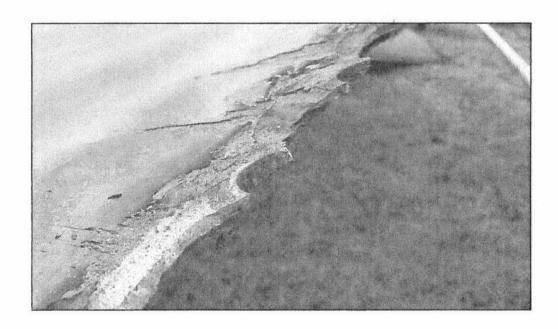
#11
To the left is the base of the tank and the interior of the tank



#12
Where US 60 engineer believes the tank failed



<u>#13</u>



Bolts when up the seam of the tank and metal seemed to have lost thickness



#15
Concrete pad where maintenance shed for Church sat. To the left is the Church and the right is the Sunday school building.



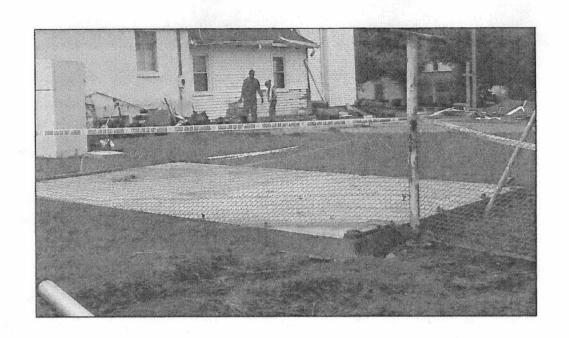
#16
Roof of maintenance shed in lower left and side of Sunday school building



#17
Back of Sunday school building.



#18
Back of Sunday school building and debris from maintenance shed



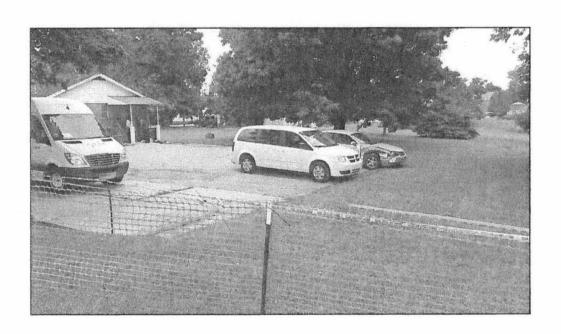
#19 Side of church



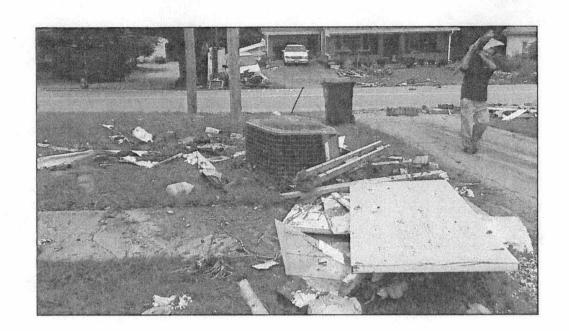
Side of the Church and in right corner a tree stump that was pulled out by the water



#21 Car that was damaged



#22
Car was parked in furthest left parking spot and pushed out beyond the tree



#23 Front sidewalk to church



#24 Lawnmower that was pushed out from the maintenance shed and across the road

APPENDIX B

APPENDIX TO AN ORDER OF THE KENTUCKY PUBLIC SERVICE COMMISSION IN CASE NO. 2015-00037 DATED APR 0 2 2015

Steven L. Beshear Governor

Leonard K. Peters Secretary Energy and Environment Cabinet



Commonwealth of Kentucky **Public Service Commission**211 Sower Blvd.

P.O. Box 615

Frankfort, Kentucky 40602-0615 Telephone: (502) 564-3940 Fax: (502) 564-3460 psc.ky.gov David L. Armstrong Chairman

James W. Gardner Vice Chairman

Linda K. Breathitt Commissioner

INCIDENT INVESTIGATION STAFF REPORT

Report Date: October 7, 2014

Incident Date: August 9, 2014

Utility: U.S. 60 Water District

Incident Location: 3130 Waddy Road

Waddy, KY 40076

PSC Investigator: Jason Pennell







Kentucky Public Service Commission

Water Utility Incident Report

Incident Investigation

Utility Description:

U.S. 60 Water District contracts North Shelby Water Company to manage and operate their water system. The manager of both systems is David Hedges. The utility provides water service to 2,368 customers.

Incident Description:

The failed Waddy water storage tank was a 177,000-gallon glass lined bolted steel stand pipe located behind the Waddy Baptist Church and Waddy Baptist Church Sunday school building on Waddy Road. This tank was built between 1979 and 1982. Based on observations at the site, the tank seems to have failed in its lower part above its concrete foundation facing the road where most of the water appeared to have exited. As the tank failed, its upper half appeared to have detached and fallen towards the backside approximately 135 feet from the tanks base.

Mr. Hedges informed Commission Staff that he received a call about the Waddy tank failure at 5:32 p.m. on Saturday August 9, 2014, from Paul Whitman with Shelby County Emergency Management. Mr. Hedges stated utility staff attempted to call the Public Service Commission at 7:23 p.m. of the same day. The utility states that they received no answer and that they did not leave a voice message, but did provide a picture of their attempt to call from their cell phone (Attachment A). The utility believes the tank failure happened at 5:30 p.m. based on reports from customers in the area who heard it fall.

Investigation Summary:

After being alerted to the Waddy water storage tank failure by reading Commission Staff email, Mr. Hedges was contacted by Commission Staff at 8:49 a.m. on August 11, 2014, to inquire about the status of the water tank. Mr. Hedges provided a brief overview and Commission Staff informed him that a site visit would be necessary to conduct an incident review.

No injuries were reported to the utility although possible property damage from the result of tank failure is in excess of \$25,000. Damage observed while onsite, was the church's maintenance shed which was completely demolished leaving only the concrete foundation that the maintenance shed was built on. The backside of the church's Sunday school building appeared to have damage. There also appeared to be damage to a parked car. Additional damage to the church's basement and foundation were described by representatives from the church who met with Commission Staff while onsite.

Continuity of service was discussed with Mr. Hedges and he expressed that due to the configuration of U.S. 60's distribution system, none of the utility's customers lost service or pressure due to the failure of the tank. Commission Staff requested copies of the inspections made on the tank by the utility. Commission Staff reviewed the video of the tanks interior made by Liquid Engineering Corporation and the utility provided a copy of the inspection report.

The tank is inspected by the utility employees at least once annually (Attachment B). On June 21, 2011, Liquid Engineering Corporation inspector Jason Fowler used a dive camera to inspect the interior of the Waddy tank. The camera is placed into the tank while the tank is still in service to take video of the condition of the tank. A copy of the report is attached (Attachment C). During the narrative of the tank inspection video, the inspector commented that the interior of the tank condition was typical of the type and year of the tank

Mr. Hedges was reminded of his obligation to submit a summary written report within 7 days to the Public Service Commission in accordance with 807 KAR 5:006, Section 27. On August 18, 2014, the utility emailed a summary written report by Warner A. Broughman III its Consulting Engineer (Attachment D). On August 20, 2014, Mr. Hedges was contacted and asked to provide a signed summary of the events by a representative of the utility.

On October 6, 2014, Mr. Hedges brought a copy of the utility's written accident report (Attachment E) and inspections the utility's employees had been making on the tank since 2012 (Attachment B).

Inspector Comments:

Liquid Engineering Corporation noted in their June 21, 2011 tank inspection that the interior wall seams show some metal loss along seam lines and that cathodic protection is recommended (Attachment C).

During discussions with Mr. Hedges he did not see a cause for concern with the tank due to the comments made by Liquid Engineering Corporation's inspector that the interior of the Waddy tank was typical for a tank of its age and type.

Utility authorized personnel attempted to call the Public Service Commission, but was unable to receive an answer and no additional attempts were made to notify the Commission.

Submitted by:

Sason Pennell

Utility Regulatory and Safety Investigator III

Attachments:

- A. Screen Shot of Utility's Call Made To Public Service Commission
- B. Utility Tank Inspections from 2012-2014
- C. Liquid Engineering Inspection Report From 2011
- D. Summary Written Report from Consulting Engineer
- E. Utility Summary Report
- F. Tank Pictures

Attachment A

1 (800) 772-4636

August 9, 2014

7:23 PM Outgoing Call

1 minute

Call

FaceTime

FaceTime Audio

Send Message

Create New Contact

Attachment B

Water Storage Inspection

Ty	уре:	()	Elevated Ground Storage	(.	ິງ ຣ)	Stan	dpipe				
Si	ze:	_,/,	<u> 1/2</u>		Loc	atior	1:	WAD	04 T	<u>AUY</u>		
Da	ate Constru	ucte	, d:	NA	······································			···········		·····		
Ту	/pe Tank:	()	Welded Metal Concrete	سر)) S	teel	l-lined (Slass			٤
Si	<u>te:</u>											
	Does site Is ground			away from bank? soggy?					()	Yes Yes	()	No No
Fo	Foundations:											
2. 3.	is the con	cret gap	e fo	oundation cracked? oundation level? tween riser base an nor bolts?	d the	con	cret	te?	()()	Yes Yes Yes Yes	(((()	No No No No
<u>Cc</u>	<u>lumns</u> (Ele	evate	ed 7	Tanks Only)				,				
2. 3.	Are they so is there as	traio ny s	int? ack	ation on columns? I in the diagonal X-red connection on ris					() () ()	Yes Yes Yes Yes	() () ()	No No No No
<u>Ta</u>	nk or Shell											
	steel? Are any w	eld :	sea	in tank bottom, she ms concave? rust streaks origina					(')	Yes	our of the	No
4. 5. 6. 7.	Is there ar Condition Condition Condition	ny m of fin of in of p	eta nish ten rime face	mediate coat? er coat? e area showing rust		((())	Good Good Good		Yes Yes Yes Fair Fair Fair	(No No No Poor Poor Poor

	<u>cessories</u>
1. 2. 3. 4.	Is there a safety climbing device or cage on the ladder? () Yes () No Is there a target on tank? () Yes () No a. Is it working properly? () Yes () No Does the utility have a climbing harness? () Yes () No How often does the utility climb tank? () Day () Week () Month Other
	What is the condition of the overflow? () Good () Fair () Poor a. Does overflow have a screen or flapper? () Screen () Flapper () Neither b. Any evidence of cross connections? () Yes () No c. Rip-rap to prevent erosion at end of overflow? () Yes () No
Co	mments:
**********	T 110-12

Water Storage Inspection

Ту	pe: () Elevated () Standpipe () Ground Storage ()						
Siz	re: Location: WA00)	To	1K			
Da	te Constructed:				_		
Ту	pe Tank: () Welded Metal () Steel-lined () Concrete	∃lass	3				
Site	<u>e:</u>		,				
	Does site slope away from bank? Is ground soft or soggy?	(/	/)	Yes Yes	(7	No No
Fo	undations:			•			,
2. ³	Is the concrete foundation cracked? Is the concrete foundation level? Is there a gap between riser base and the concrete? Condition of anchor bolts?	(((2	Yes Yes Yes Yes	((- (\^\\^\	Mo No No No
<u>Co</u>	lumns (Elevated Tanks Only)						
2. 3.	Is there condensation on columns? Are they straight? Is there any slack in the diagonal X-rods? Condition of bolted connection on riser rods?	(((())	Yes Yes Yes Yes	((())	No No No No
Tar	nk or Shell						
	Any disfiguration in tank bottom, shell, roof or irregularities steel? Are any weld seams concave?	es in (e conto Yes Yes	our (of th	ie No No
۷.	a. Are there any rust streaks originating from the weld s	ر eam	s?			,	
3. 4. 5. 6.	b. Any evidence of water leaking from tank? Is there any metal loss by pitting? Condition of finish coat? Condition of intermediate coat? Condition of primer coat? Amount of surface area showing suct?)	Yes Yes Yes Fair Fair	(((((((((((((((((((()	No No No Poor Poor
	Amount of surface area showing rust? Any water ponding on roof?	()	Yes	()	No

Accessories	
 Is there a safety climbing device or cage on the ladder? Is there a target on tank? a. Is it working properly? Does the utility have a climbing harness? How often does the utility climb tank? Day Dother 	Yes () No Yes () No Yes () No Yes () No Week () Month
5. What is the condition of the overflow? a. Does overflow have a screen or flapper? () Screen () Flapper () Neither b. Any evidence of cross connections? () c. Rip-rap to prevent erosion at end of overflow? ()	Fair () Poor Yes () No Yes () No
Comments:	·

Type:	()	Elevated Ground Storage	(1)	Sta	ndpipe					
Size:		**************************************	e san manusia	Locat	ion:_	Wed	ldy 1	- an/C			
Date Constr	ucte	d:	¢					·	-		
Type Tank:	()	Welded Metal Concrete	(1/2)	Stee	el-lined (Glass				
Site:								_	A CONTRACTOR OF THE PARTY OF TH		
 Does site Is ground 	slo _l sof	pe a t or	away from bank? soggy?				()	Yes Yes	()	No No	
Foundations:	<u>.</u>										_
Is the con	cret gap	e fo	oundation cracked? oundation level? tween riser base ar oor bolts?	id the c	oncre	ete?	()	Yes Yes Yes		No No No No	
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 Are they s Is there ar 	traic ıy si	ht? ack	ation on columns? in the diagonal X-r d connection on ris	ods? er rods?	?		() () ()	Yes Yes Yes Yes	()	No No No No	
Tank or Shell			•			•					
steer <i>?</i> 2. Are any we	eld s	ear	n tank bottom, she ns concave? rust streaks origina				()	Yes Yes		No No	
 Is there an Condition of Condition of Condition of 	y moof fire of income of proof of the office	etal ish tem ime ace	nediate coat? er coat? earea showing rust	()	Good Good Good		Yes Yes Yes Fair Fair Fair Yes		No No Poor Poor Poor	

Accessories

	Is there a safety climbing device or cage on the ladder? () Yes () No Is there a target on tank? () Yes () No
٠.	a. Is it working properly?
	Does the utility have a climbing harness? (/) Yes () No
4.	How often does the utility climb tank? () Day () Week () Month Other
5.	What is the condition of the overflow? () Good () Fair () Poor
	a. Does overflow have a screen or flapper?
	() Screen () Flapper () Neither
	b. Any evidence of cross connections? () Yes () No c. Rip-rap to prevent erosion at end of overflow? () Yes () No
	c. Rip-rap to prevent erosion at end of overflow? () Yes () No
Co	mments:

	(Henter plug not workin)
	11-79-12
	11-2/-16
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	7

North Shelby Water Co Tank Inspection

3-13-13

	Туре:	()	Elevated Ground Storage	(\land	Stand	pipe				
	Size:	,		AN SOLET OF THE STATE OF THE ST	Locat	ion:_ ℧	<u> Jaa</u>	YT	cak		
	Date Constr	ucte	ed:_							_	
	Type Tank:	()	Welded Metal Concrete	(8	Steel-	lined G	lass			
į	Site:		,								
	1. Does site 2. Is ground		•	away from bank? r soggy?				(3)	Yes Yes	() ()	No No
j	Foundations	<u>:</u>									
4	2. Is the cor	ncre i ga	te f p b	oundation cracked oundation level? etween riser base chor bolts?			e?	() () ()	Yes Yes Yes Yes	(X) (X) (X)	No No No No
	Columns (El	eva	ted	Tanks Only)							
;	 Are they Is there a 	stra iny :	ight slac	sation on columns t? ok in the diagonal ted connection on	X-rods?	s?		() () ()	Yes Yes Yes Yes	() ()	No No No No
•	Tank or She	<u>ll</u>									
	steel? 2. Are any v	velc	l se	n in tank bottom, s ams concave? y rust streaks orig		_		()	Yes	our of th	No
	b. Any e 3. Is there a 4. Condition 5. Condition 6. Condition	vide iny i n of n of n of of si	ence met finis inte prin urfa	e of water leaking al loss by pitting? sh coat? ermediate coat? ner coat? ce area showing r	from tank		Good Good Good		Yes Yes Yes Fair Fair Fair	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	No No No Poor Poor Poor

Accessories

1. 2. 3. 4.	Is there a safety climbing device or cage on the ladder? () Yes () N Is there a target on tank? () Yes () N Is there a target on tank? () Yes () N Is there a target on tank? () Yes () N Is there a target on tank? () Day () Week () N Is there a target on tank? () Day () Week () N Is there a target on tank?	lo lo lo lo ĵonth
5.	Other y columns What is the condition of the overflow? () Good () Fair (
Co	omments: Trans halve per one wayson in come.	
	Over all condition is FAR	
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	///WVW, 3-13-18	

North Shelby Water Co Tank Inspection

Type:	. ()	Elevated Ground Storage	(<i>Š</i>	Star	ndpipe				
Size:	٠.		a man dis as in the second that	Locat	ion:	WAO	<u> </u>	Tak		M.A. PORT SALES
Date Const	ructe	d:_								
Type Tank:	()	Welded Metal Concrete	()	Stee	el-lined (Glass			_
Site:										
 Does site Is ground 	slo _l d sof	pe a t or	away from bank? soggy?				(~) ()	Yes Yes	(سر)) No No
Foundations	<u>s:</u>									
Is the cor	ncret i gap	e fo	oundation cracked? oundation level? tween riser base and or bolts?		oncre	te?	() (~) ()	Yes Yes Yes Yes	()	No No No No
Columns (El	evate	ed 7	Tanks Only)		,					
 Are they : Is there a 	straig ny-si	jht? ack	ation on columns? in the diagonal X-i	ods? er rods:	?		() () ()	Yes Yes Yes Yes	() () ()	No No No No
Tank or Shel	1					,				
2. Are any w	eld s	sea	in tank bottom, she ms concave? rust streaks origina				()	Yes Yes	()	No No
Is there asConditionConditionCondition	ny m of fir of in of pr f surf	etal nish terr ime ace	nediate coat? er coat? e area showing rust	()	Good Good Good)	Yes Yes Yes Fair Fair Fair Yes	() /) /) / / / / / / / / / / / / / /	No No No Poor Poor Poor

Accessories

1.	Is there a safety climbing device or cage on the ladder? (**) Yes () No								
	Is there a target on tank? () Yes () No								
	a. Is it working properly? () Yes () No								
3.	Does the utility have a climbing harness? () Yes () No								
	How often does the utility climb tank? () Day () Week () Month								
	Other								
5.	What is the condition of the overflow? () Good (Y Fair () Poor								
	a. Does overflow have a screen or flapper?								
	() Screen (X Flapper () Neither								
	b. Any evidence of cross connections? () Yes (/ No								
	b. Any evidence of cross connections? () Yes () No c. Rip-rap to prevent erosion at end of overflow? () Yes () No								
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	(11/26/13								
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North Shelby Water Co Tank Inspection Type: Elevated Standpipe Ground Storage Location: " W Date Constructed: Type Tank: Welded Metal Steel-lined Glass Concrete Site: 1. Does site slope away from bank? Yes 2. Is ground soft or soggy? Foundations: 1. Is the concrete foundation cracked? 2. Is the concrete foundation level? 3. Is there a gap between riser base and the concrete? 4. Condition of anchor bolts? Columns (Elevated Tanks Only) 1. Is there condensation on columns? No 2. Are they straight? 3. Is there any slack in the diagonal X-rods? No 4. Condition of bolted connection on riser rods? <u>Tank or Shell</u> 1. Any disfiguration in tank bottom, shell, roof or irregularities in the contour of the steel? Yes 2. Are any weld seams concave? Yes a. Are there any rust streaks originating from the weld seams? Yes b. Any evidence of water leaking from tank? Yes-3. Is there any metal loss by pitting? Ýes No 4. Condition of finish coat? Good (Poor 5. Condition of intermediate coat? Good (Fair Poor 6. Condition of primer coat? Good Poor 7. Amount of surface area showing rust?

8. Any water ponding on roof?

Yes

Accessories									
2. Is there a taga. Is it wor3. Does the ut	afety climbing devarget on tank? king properly? tility have a climbing the the utility climbing.	ng harness?	on the	e la	dder? Day		Yes Yes Yes Yes Week		No No No No Month
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Comments:					Parado mara di ma			المالية	

Attachment C

Liquid Engineering Corporation Steel Potable Water Reservoir Inspection Report (ROV)

Job Number: 40478

Utility: U.S. 60 Water Dist.

Date: 6-21-11

Inspector: J.Fowler

Tank Name: Waddy

ROV Team: 10

Tank Hand. Waday							
Interior Condition Findings	i 	, -					
Roof Condition	 ✓ Good	Fair	Poor	Comments:			
Roof Coating Condition	 ✓ Good	Fair	Poor	Comments:			
Roof Weld Condition	 ✓ Good	Fair	Poor	Comments: Bolted glass lined seams in good condition			
Wall Condition	 ✓ Good	Fair	Poor	Comments:			
Wall Coating Condition	Good	Fair	Poor	Comments: Glass lining in good condition			
Wall Weld Condition	Good	Fair	Poor	Comments:			
Floor Condition	Good	Fair	Poor	Comments: Cannot evaluate due to sediment. Recommend cleaning.			
Floor Coating Condition	Good	Fair	Poor	Comments: Concrete			
Floor Weld Condition	Good	Fair	Poor	Comments: None			
Support Column Condition	Good	Fair	Poor	Comments: None			
Column Coating Condition	Good	Fair	Poor	Comments: None			
Plumbing Condition	Good	√ Fair	Poor	Comments: Corrosion noted on infet outlet structure			
Ladder Condition	Good	Fair	Poor	Comments: None			
Cathodic Protection Installed	Yes	✓ No		Comments: Recommended			
Visible Leaking	Yes	√ No		Comments:			
Exterior Condition Finding	s						
Vent Condition	 √ Good	Fair	Poor	Comments:			
Roof Condition	 ✓ Good	Fair	Poor	Comments:			
Roof Coating Condition	Good	Fair	Poor	Comments: Glass lined			
Roof Weld Condition	Good	Fair	Poor	Comments: Bolted seams in good condition			
Hatch Condition	 ✓ Good	Fair	Poor	Comments:			
Wall Condition	√ Good	Fair	Poor	Comments:			
Wall Coating Condition	 ✓ Good	Fair	Poor	Comments:			
Wall Weld Condition	Good	Fair	Poor	Comments: Bolted			
Foundation Condition	 √ Good	☐ Fair	Poor	Comments:			
Ladder Condition	 Good	Fair	Poor	Comments:			
Plumbing Condition	 ✓ Good	Fair	Poor	Comments:			
Visible Leaking	Yes	√ No		Comments:			
Additional Comments							
Interior wall seams show some metal loss along seam lines. Recommend cathodic protection Recommend cleaning. Inspect every 3-5 years.							

Disclalme

Liquid Engineering does not provide consulting engineering services. Unless otherwise noted, the finding contained in this report were neither prepared nor reviewed by a licensed Professional Engineer, but are based on experience, training and visual examination of the Dive Maintenance Technician.

Liquid Engineering Corporation Potable Water Reservoir Sanitary, Safety, Security (ROV)

Job Number: 40478 Inspector: J.Fowler Utility: U.S. 60 Water Dist.

Date: 6-21-11 ROV Team: 10

Tank Name: Waddy Sanitary Condition Findings X Yes No Comments: Vent Properly Screened? X Yes No Comments: Hatch Sealed? Yes No No Comments: Recommend padlock. Hatch Properly Secured? X Yes No Overflow Properly Screened? Comments: **⋈** No Holes in the Roof? ☐ Yes Comments: **⋈** No Yes Comments: Holes in the Walls? Yes **⊠** No Manway Leaking? Comments: Safety Condition Findings Good Fair Poor Hatch Safety Comments: Good Fair Poor Ladder Safety Comments: Good Fair Poor Comments: Manway Safety Good Fair Poor Comments: **Balcony Safety** Good Fair Poor Handrail Safety Comments: Security Condition Findings Good Fair Poor Vent Security Comments: Good Fair Poor Hatch Security Comments: Good Fair Poor Comments: Ladder Security Fence Present? Yes Comments: Yes **⋈** No Adequate Lighting? Comments: Summary Recommendations

Recommend cleaning. Approximately 1 inch of sediment.

Recommend cathodic protection system.

Inspect every 3-5 years. Recommend padlock.

Attachment D

Pennell, Jason (PSC)

From:

Pete Hedges <petehedges@bellsouth.net>

Sent:

Monday, August 18, 2014 12:44 PM

To:

Pennell, Jason (PSC)

Subject:

Report of 8-9-14.docx

Attachments:

Report of 8-9-14.docx; ATT00001.txt

Report of Accident July 9, 2014

In accordance with the provisions of 807 KAR 5:006 Section 26 the US 60 Water District reports to the Kentucky Public Service Commission that its standpipe at Waddy, KY suffered a catastrophic collapse at approximately 5:20 pm on July 9, 2014. The tank was full with approximately 177,000 gallons of water. The control valve was off and the booster pump system was running, continuing to pump water to the District's tank at Driscoll Lane in Spencer County. The standpipe is a total loss.

The expelled water caused property damage to nearby structures in excess of \$25,000.

No loss of life or any injuries occurred as a result of the collapse.

No customers experienced a loss of service.

The apparent cause of the collapse was the sudden failure of a vertical seam in the lower panels of the bolted steel tank.

Warner A. Broughman III, PE Consulting engineer

Attachment E

RECEIVED

US 60 Water District

OCT 06 2014

PUBLIC SERVICE COMMISSION

Accident Report

On the 9th day of July 2014 at approximately 5:20pm our storage tank at Waddy Ky, collapsed. It had approximately 177,000 gallons in it at the time which was its capacity the control valve was closed and our booster pump station at Grafenburg was continuing to pump to other storage tanks in the system.

No loss of life or injuries occurred due to the tanks collapse. There was some property damage to nearby property we do not know any figures of how much but it will be in excess of the \$25,000 limit stated in 807 KAR 5:006 section 26.

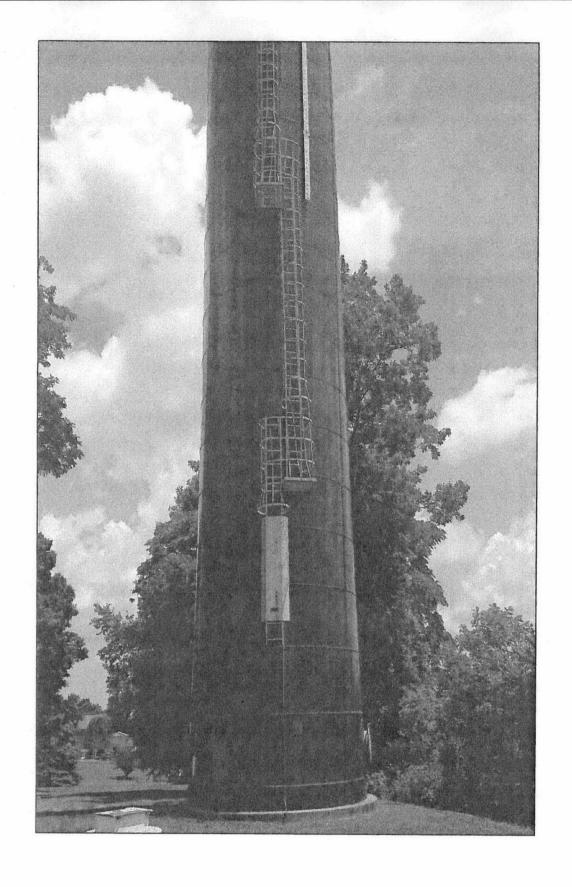
No customers experienced loss of service or pressure after the collapse other storage tanks have been able to keep up with demands of normal usage.

The apparent cause of the collapse was a sudden failure in a vertical seam in a lower panel which have bolted seams. The reason for the seam failure was due to corrosion which could not be seen during our regular inspection from the outside the tank looked pristine as do all of these glass lined tanks.

We had the tank inspected in 2011 by a outside firm who inspected the inside of the tank via remote operated vehicle the report from them did not indicate any significant issues that indicated this type of problem.

David Hedges General Manager

Attachment F



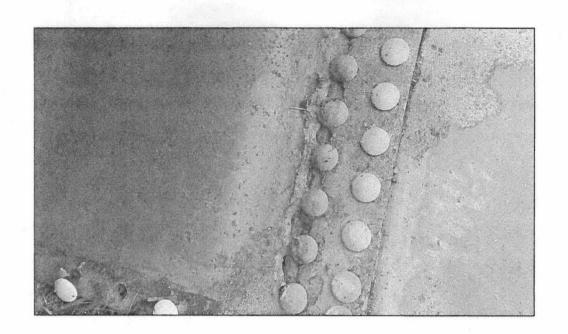
U.S. 60 Water District Water Storage Tank Picture Taken June 16, 2014



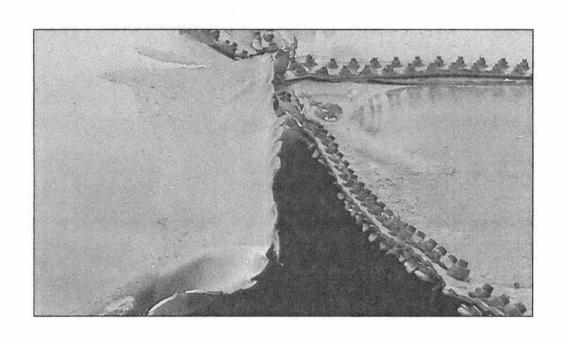
#1 Waddy tank sat behind the Waddy Baptist Church



#2
Tank valve pit that collapsed due to water pressure



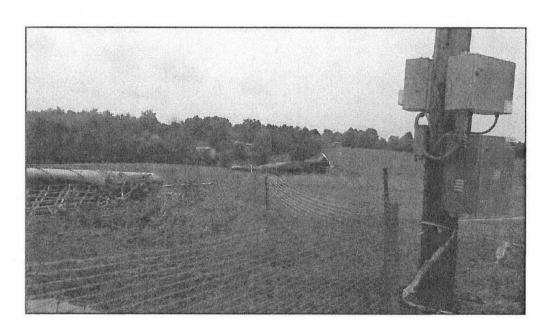
#3
Interior bolts of the Waddy tank



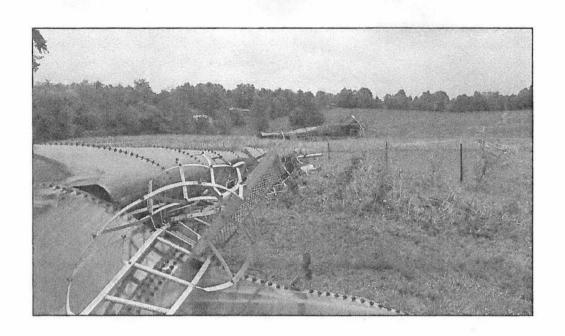
Exterior of Waddy tank shows where the tank ripped up the horizontal seam



#5
Top section of the Waddy tank moved approximately 135 feet from base of the tank



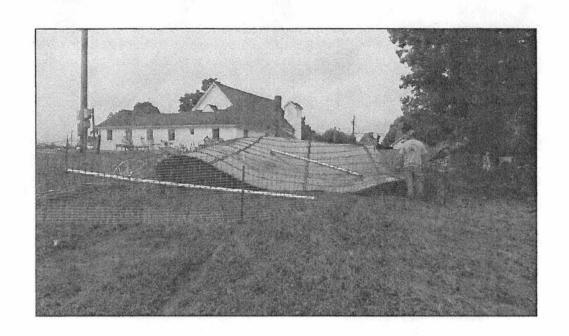
US 60 Water District has fenced off tank site and has utility employees watching the tank until clean up



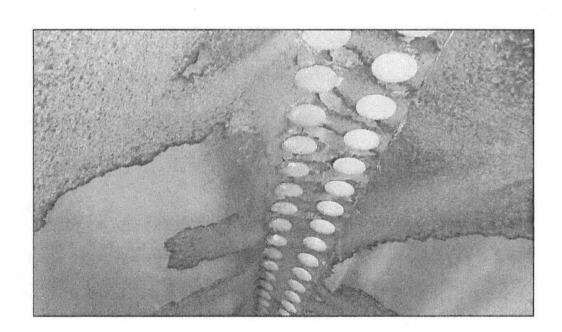
#7
Bottom section of tank



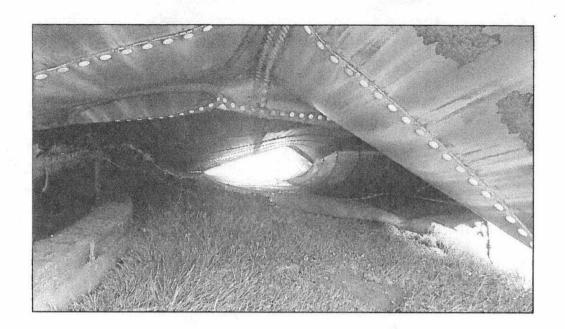
#8
Top section of the tank



#9
Bottom section of tank and Waddy Baptist Church



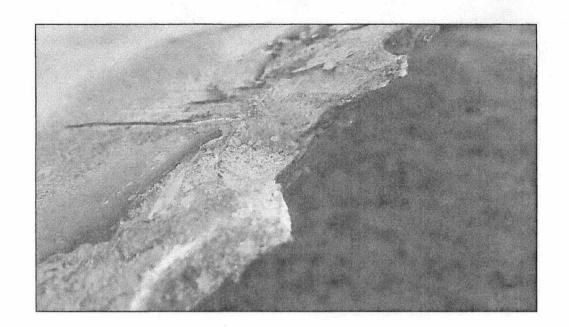
#10 Interior vertical seem of Waddy tank



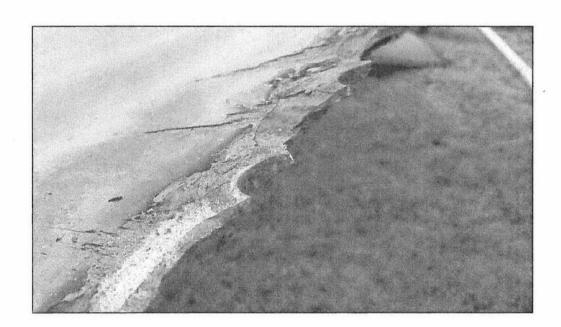
#11
To the left is the base of the tank and the interior of the tank



#12
Where US 60 engineer believes the tank failed



#13



Bolts when up the seam of the tank and metal seemed to have lost thickness



#15
Concrete pad where maintenance shed for Church sat. To the left is the Church and the right is the Sunday school building.



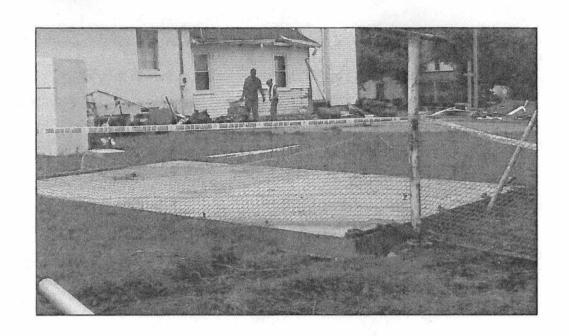
Roof of maintenance shed in lower left and side of Sunday school building



#17 Back of Sunday school building.



#18
Back of Sunday school building and debris from maintenance shed



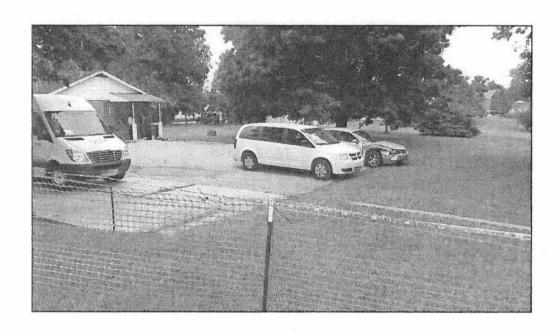
#19 Side of church



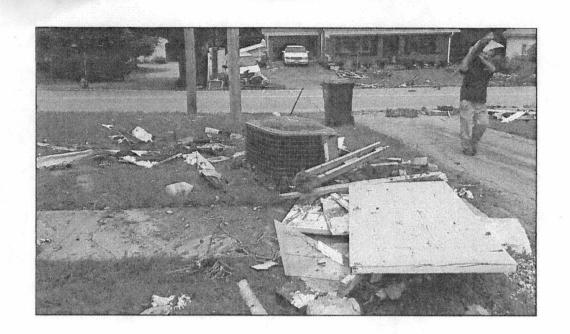
Side of the Church and in right corner a tree stump that was pulled out by the water



#21 Car that was damaged



#22
Car was parked in furthest left parking spot and pushed out beyond the tree



#23 Front sidewalk to church



#24
Lawnmower that was pushed out from the maintenance shed and across the road

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