Mass Tank Inspection Services, LLC
29 Abbey Lane
Middleboro, MA 02346
Office 508-947-8826
email: Matt@masstankinspection.com

March 2, 2020

Robert Gallo, PE
New England Service Company
37 Northwest Drive
Plainville, CT 06062

Subject:

Abenaki Water Company Inspection Report
2 @ 15,000 Gallon Underground Storage Tanks
Service: Potable Water
Inspection Date: February 11 & 19, 2020

Dear Mr. Gallo,

Mass Tank Inspection & Services has completed an internal and external inspection of the above subject storage tanks, located at 6 Rocky Point Drive, Bow, NH 03304. The tank inspections were performed referencing multiple inspection and fabrication Standards inclusive of UL 58, AWWA M42, STI SP131 and the State of New Hampshire – Drinking Water & Related Rules, Env-Dw 504 Operation & Maintenance. Non-destructive testing in the form of an ultrasonic thickness survey of the shell and head plates was conducted and is attached.

Subject Tanks (Identical)
Tank ID: #1 (left tank) Tank #2 (right tank)
Date of Construction: Circa 1975
Type of Construction: Carbon Steel, Single Wall
Shell Plate Design Thickness: .375 inch
Head Plate Design Thickness: .375 inch
Service: Potable Water Storage
Diameter: 9 ft. 6 in.
Straight Wall Length: 36 ft.
Capacity: 15,000 gallons approx.
MAWP: Atmospheric

The subject tanks have been installed and in potable water service for the same amount of time and are in similar condition. The internal liner of each of the subject tanks has completely failed. In each tank the visual inspection and ultrasonic thickness survey reveals moderate generalized metal loss of the internal shell and head plates. The internal side pit survey indicates widespread localized significant pitting. Average current steel plate steel plate thickness of tanks 1 and 2 are .349 and .356 respectively and are within the calculated minimum thickness specified as determined using Roark's Equation for underground storage tanks. The worst-case of the scattered localized pitting in tank 1 is .155 inch in depth with an acceptable remaining thickness (*per STI SP131 section 9*) of .220 or 59 % of the original plate thickness remaining. The worst-case localized pit in tank 2 is .142 inch, with .233 or 62 % of the original plate thickness remaining. The exposed exterior shell and head steel plate, exhibit both moderate generalized corrosion and clustered pitting on both tanks. Current degree of metal loss from exterior corrosion is within acceptable limits.

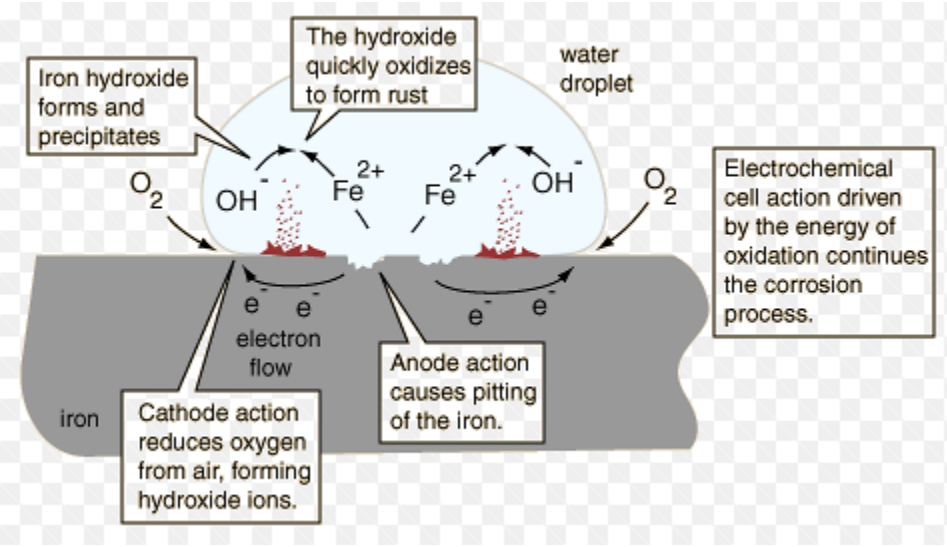
Tank #1

Picture left shows the front head and a 1-foot portion of the tank shell of Tank #1, that extends through the concrete service room wall. Moderate generalized corrosion is seen on the shell and head plate surface. Concrete wall remains in good condition with some minor cracking underneath the tank.

The picture on the right shows a more significant degree of corrosion to the exposed bottom and shell of the tank. Green arrow points to corroded piping that is in need of replacement.

The red arrow points to loosened tubercle formations as the tank cleaning process is started by scraping all interior shell surfaces prior to power washing and vacuum cleaning.

Tubercles are a common occurrence in steel water tanks that operate without the protection of a viable liner. Tubercles can be defined as structurally complex corrosion cells in which accumulations of metal oxides, deposits, and corrosion products cap localized regions of metal loss. Differential aeration cells caused tuberculation, where oxygen deficient regions below the accumulated corrosion products form anodic sites, surrounded by areas that are cathodic. Tubercles grow as a result of both internal (anodic) and external (cathodic) reactions.



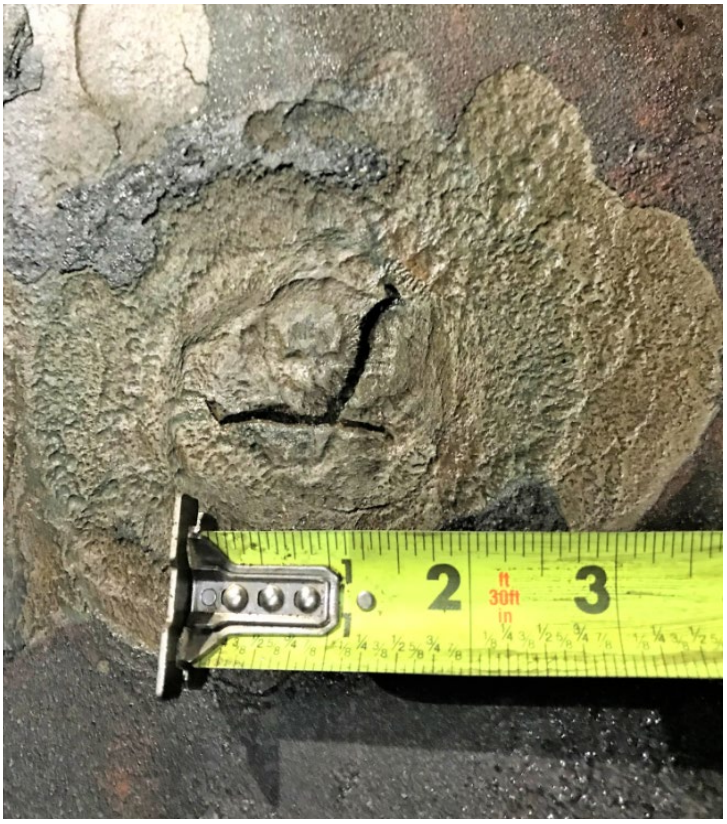
A diagram of the tubercle formation and subsequent metal loss and pitting is shown left.

Picture on the left shows the tank after cleaning which provides a clean surface for ultrasonic thickness measurements, weld examination and access to the exposed areas of pitting corrosion for further evaluation. Widespread corrosion of varying degrees is evident.

Picture right shows coating failures where tank cleaning revealed active corrosion occurring underneath the tubercle formations.

The pit survey of the tank comprised of examining the entire internal shell surface for failure indications. More than a dozen pits were visually identified as being worst case and then measured for depth. Yellow arrow in the picture shown left points to one of ten pits identified that measured more than .100 of an inch in depth. Hundreds of localized areas of pitting show metal loss of less than .010 of an inch in depth. STI SP131 states that if corrosion exists beyond 50% of the original plate thickness then the area shall be repaired by welding. Pitting identified in the tank during the inspection is within the acceptable range of metal loss regarding the current viability.

The red arrow in picture to the right points to the location on the plate surface of the back head that has a cracked weld that requires a welded repair. During the tank fabrication process a hole is commonly drilled in the center of the tank head which allows the large piece of steel to be manipulated for fitting after which, the hole is repaired in various ways. In tank 1 the crack is indicative of a method where an external patch plate was used to cover the drill hole and additionally a plug weld was made internally. In this case fabrication temperatures and stresses likely caused the plug weld to crack at some point.



Picture left (*enlarged area from picture above*) shows a crack in the weldment located on the internal side in the center of the back head. This crack measures an inch and a half in length. A pitometer was used to measure the depth of the crack but was impinged at a depth of .245 inches. This crack requires a welded repair. It is unknown whether a full penetration has occurred without vacuum box testing however there were no indications of groundwater infiltration during the examination.

Fillet welds of the shell to shell and shell to head lap joints, show uniform wear with minimal metal loss. There are no indications of undercutting or incomplete penetration.

Picture of bottom drain nozzle clear of obstruction but in poor condition.

Pictured right is the 3-inch nozzle at the bottom of the front head showing no obstructions.

Picture left shows the 2-inch nozzle at the bottom of the front head. Corrosion byproduct is building up inside the piping.

Tank #2

Picture to the right shows the front head and tank shell, of Tank #2, that extends through the concrete pump house wall. Moderate generalized corrosion is seen on the shell and head plate surface. Concrete wall remains in good condition.

The tank shell shown left currently displays moderate pitting corrosion that is measured at .008 inch in average depth. The failed exterior coating has left the carbon steel susceptible to corrosion. When condensation collects in the irregular surfaces of the exposed shell it becomes conducive to attack by pitting corrosion.

Picture right shows the heavy tubercle growth on the internal side of tank #2 prior to cleaning.

Picture left shows the interior tank shell after cleaning. Areas of bare steel are exposed after cleaning failed coating.

Picture right shows an area of the tank bottom that has been affected by scattered localized pitting of moderate depth. This is an example of a typical condition that exists throughout 40% of the entire shell field.

There is a similar degree of pitting within Tank #2 as was found in Tank #1. Thirteen pits were identified and measured. Nine were found to be greater than .100 of an inch and averaged .126 inch in depth. None were greater than 50% of original plate thickness and therefor do not require welded repair. However, installing a new liner will halt the current active corrosion and support a sanitary environment for water storage.

Fillet welds of the shell to shell and shell to head lap joints (*example shown right, red arrow*) show minimal pitting in scattered locations but otherwise remain sound. No indications of undercutting or incomplete penetration were identified.

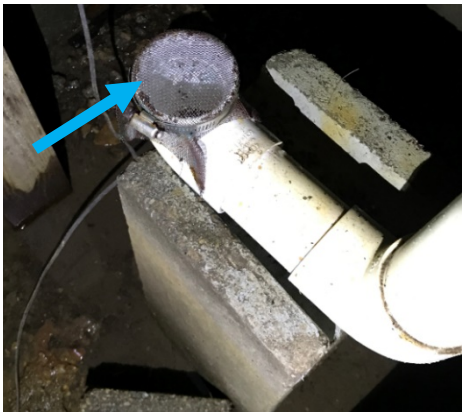
Fill and discharge nozzles are free of obstruction as shown in the picture above and to the right.

Venting

Venting for both tanks is achieved via a shared inline 2" schedule 40 PVC pipe. The pvc pipe is then fitted to a 3-inch metal pipe which penetrates the underground service room and terminates vertically with a rain shield/bug screen attached. The normal designed venting of storage tanks is typically at least as large as the filling or withdrawal connection, whichever is larger. In certain water demand conditions, the current shared 2-inch vent may not adequately service both at once and vacuum/pressure forces could be exerted on subject tanks.

Overflow

Both tanks share a common pvc overflow pipe that is also part of the vent piping. Systems for overflow and venting are typically separate. Per AWWA D100-11, a vent pipe shall not be considered an overflow pipe. The picture right shows the combination piping at the top of Tank #1. The red arrow points to the overflow pipe that terminates near the service room floor. The green arrows point to the tank vent line which terminates outside.



Blue arrow in picture to the left points to the terminus of the overflow pipe. Overflow piping should be positioned in a downward direction for proper drainage to maintain sanitary conditions.

Structural Deficiency Limits

Tanks were measured for out of roundness or denting and found both tanks within structural deficiency limits outlined in STI SP131.

Suitability for Service
The subject tank is recommended for continued potable water service with action items.

Next Recommended Internal Inspection
Reinspect in 5 years congruent with tank cleaning as part of a routine maintenance plan.

Action Item #1 – Abrasive blast and apply NSF approved liner to interior of Tank 1 and 2 to maintain tank integrity and effect improved sanitary storage condition.

Action Item #2 – Make weldment repair to the cracked weld of Tank #1.

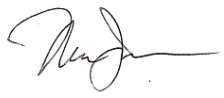
Action Item #3 – Abrasive blast and apply coating to exterior of both Tank 1 and 2 to maintain tank integrity.

Recommended Action Items – Make modifications to the subject tanks vent and overflow so that they are independent of each other and are adequately sized.

I look forward to speaking with you further if needed regarding this project. Feel free to call me on my cell phone if you are unable to reach me at my office.

Office Phone 508-947-8826 Cell Phone 508-294-2744

Sincerely,



Matthew Jensen
Certified API-653 Aboveground Storage Tank Inspector

Abenaki WATER CO.

MASS TANK

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29 Abbey Lane
Middleboro, MA 02346
508-947-8826 masstankinspection.com

INSPECTION DATE(s): 2/11/2020

COMPANY NAME: Abenaki Water Company

COMPANY ADDRESS: 6 Rocky Point Dr. Bow, NH 03304

CONTACT: Taylor deOgburn - Abenaki Water Primary Operator

INSPECTOR NAME(s): Matthew Jensen

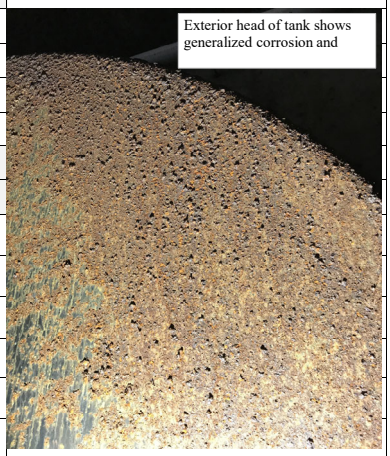
Tank Information	
Manufacturer	Unknown
Identification Number	#1 (Left)
Date of Construction	Circa 1975
Design Standard	UL 58 (assumed)
Service / Product	Potable Water
Capacity	15,000 Gallons
Diameter	102"
Height (shell length)	432'
Material of Construction	Carbon Steel
Double Wall or Single Wall?	Single
Aboveground or Underground?	Underground

Visual Inspection	Comments	Pass	Marginal	Fail	None	NA
FOUNDATION						
Declivity		X				
Spalling, Cracking	One hairline crack exists on the concrete tank wall beneath Tank #1	X				
Settlement		X				
Other						X
TANK						
Nameplate					X	
Signage					X	
Emergency Vent						X
Vent Pipe			X			
Fill Pipe		X				
Nozzles		X				
Interstice Leak Detection Operational?						X
Fluid in Interstice						X
Leaks		X				
Staining		X				
Odor		X				
Grounded		X				
Supports/Saddles						X
Anchor Points						X
Internal Coating				X		
External Coating				X		
Welds	Back head center plug weld has !.5" long crack requiring repair.			X		
Flange Face		X				
Internal Corrosion	Corrosion throughout internal and external shell field of varying degrees. Currently acceptable but coating required to ensure extend service life.	X				
External Corrosion		X				
Shell Distortions, Deformations		X				
Pitting	Significant pitting observed. Currently acceptable but coating required to ensure extend service life.		X			
Dents, Gouges		X				
Spider Cracking		X				
Brittle Fracture		X				
General Condition			X			

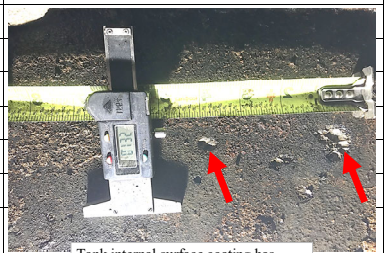
Other .

The tank remains viable and is recommended for continued service. The next recommended internal inspection is in February 2025.

Bottom of the external side of tank shows significant corrosion.



Exterior head of tank shows generalized corrosion and



Tank internal surface coating has failed leading to tubercle formations

Abenaki WATER CO.

Confidential, Inc.

MASS TANK Inspection & Services

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masstankinspection.com

API 653, 510, 570: NACE CP4, CIP2: STI SP-001

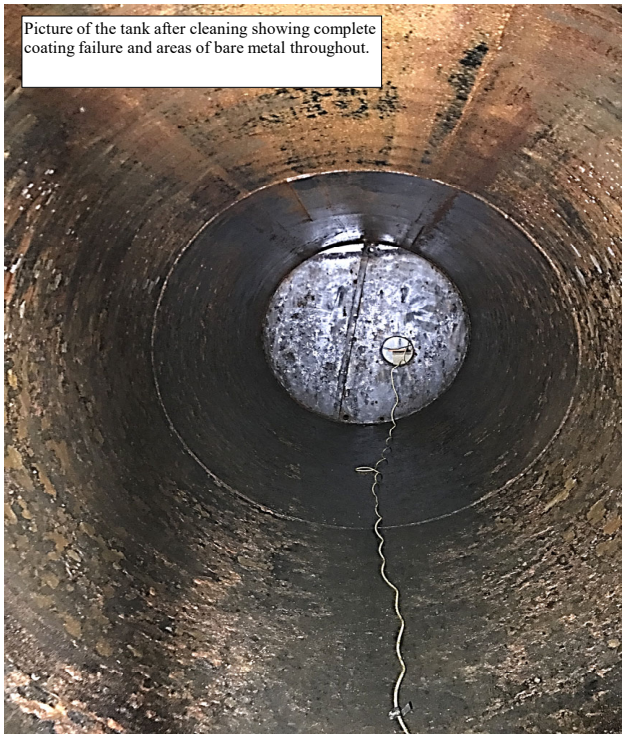
Shell Plate Ultrasonic Thickness Survey Data

Data in thousandths of inch unless otherwise specified

		Shell Ring 1	Shell Ring 2	Shell Ring 3	Shell Ring 4	Shell Ring 5	Front Head	Back Head
Asset Identification #	**Abenaki Water Company**	343	353	341	344	340	361	341
Site Address	**6 Rocky Point Dr.**	342	344	361	341	348	353	349
	Bow, NH 03304	333	345	340	361	329	370	361
Service	**Potable Water**	346	338	345	340	357	372	351
Construction Date	**Circa 1975**	348	348	367	350	350	353	358
Asset Type	**Underground Atmospheric Storage Tank**	333	352	357	367	350	342	353
Material of Construction	**Carbon Steel**	364	369	360	348	366	364	352
Primary Diameter	**102"**	356	361	360	342	347	360	353
Primary Length	**432"**	339	351	368	334	361	357	355
Single Wall	**Yes**	359	341	325	355	367	358	350
Capacity	**15,000 gallons**	359	335	362	342	352	362	341
Inspection Date	**2/11/2020**	339	348	351	341	326	367	358
Next Inspection Date	**February 2025**	352	358	351	330	365	377	
		350	371	365	361	333		
		342	361	352	365	335		
		336	341	363	333	333		
		357	345	364	363	352		
		347	337	349	360	339		
Column Average		347	350	355	349	347	361	352
Total Average Component Thickness		349					361	352
Current Thinnest Measured Component Thickness		325					342	341
Assumed Design Thickness (as built)		375					375	375
Worst Case Metal Loss		50					33	34
Number of Service Years		45					45	45
Worst Case Shell/Head Plate Corrosion Rate/Yr in inches		0.0011					0.00073	0.00076
*Minimum Thickness Required per UL 58		281					281	281
Current shell thickness available for corrosion allowance inches.		0.0440					0.06	0.06
Estimated Remaining Service Life of plate in years. *Exclusive of localized pitting.		40					83	79

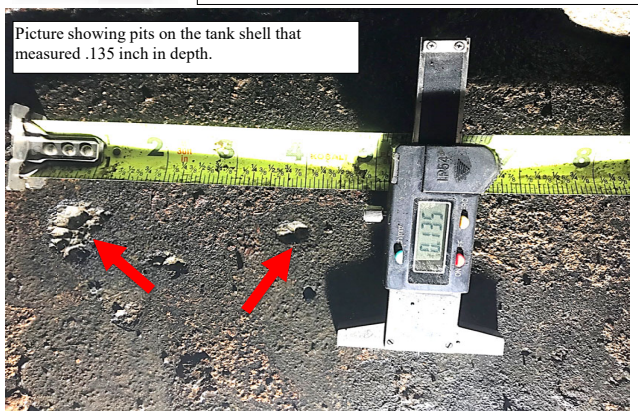
The minimum thickness required is derived from UL 58 using Roark's Equation for minimum thickness of underground tanks. 4ft Entered as assumed burial depth.

TANK CALCULATIONS USING PROPOSED UL58	
SINGLE WALL (& TYPE II)	
BURIAL DEPTH, ft	4
TANK CAPACITY, gal	15000
TANK DIAMETER,IN	102
TANK LENGTH, ft	36
TANK THICKNESS, in	0.375
M OF I reqd	NA
L/D	4.235294118
Tank Thickness* .75	0.28125



Picture of the tank after cleaning showing complete coating failure and areas of bare metal throughout.

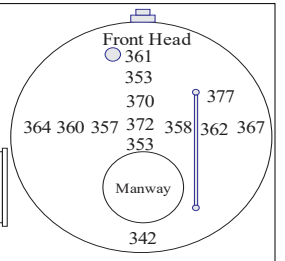
The ultrasonic thickness survey was conducted with a 2014 Olympus MODEL 38DL PLUS ULTRASONIC THICKNESS GAUGE as seen left. The gauge was field calibrated on February 11, 2020 @ 1030 hrs using .180, .244 and .380 inch carbon steel coupons. The NDT operator was MJJ UT Tech Level 1



Picture showing pits on the tank shell that measured .135 inch in depth.

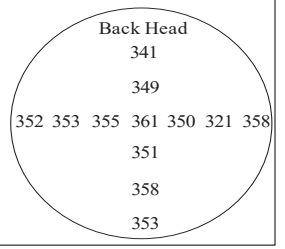
Left Side

343	342	333	353	344	345	341	361	340	344	341	361	340	348	329
346	348	333	338	348	352	345	367	357	340	350	367	357	350	350
364	356	339	369	361	351	360	360	368	348	342	334	366	347	361



Right Side

359	359	339	341	335	348	325	362	351	355	342	341	367	352	326
352	350	342	358	371	361	351	365	352	330	361	365	365	333	335
316	357	347	341	345	337	363	364	349	333	363	360	333	352	339



Abenaki WATER CO.

MASS TANK

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508-947-8826 masstankinspection.com

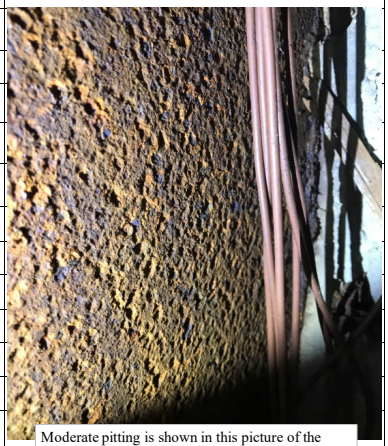
INSPECTION DATE(s): 2/19/2020
COMPANY NAME: Abenaki Water Company
COMPANY ADDRESS: 6 Rocky Point Dr. Bow, NH 03304
CONTACT: Taylor deOgburn - Abenaki Water Primary Operator
INSPECTOR NAME(s): Matthew Jensen

Tank Information	
Manufacturer	Unknown
Identification Number	#2 (Right)
Date of Construction	Circa 1975
Design Standard	UL 58 (assumed)
Service / Product	Potable Water
Capacity	15,000 Gallons
Diameter	102"
Height (shell length)	432"
Material of Construction	Carbon Steel
Double Wall or Single Wall?	Single
Aboveground or Underground?	Underground

Visual Inspection	Comments	Pass	Marginal	Fail	None	NA
FOUNDATION						
Declivity		X				
Spalling, Cracking		X				
Settlement		X				
Other						X
TANK						
Nameplate					X	
Signage					X	
Emergency Vent						X
Vent Pipe			X			
Fill Pipe		X				
Nozzles		X				
Interstice Leak Detection Operational?						X
Fluid in Interstice						X
Leaks		X				
Staining		X				
Odor		X				
Grounded		X				
Supports/Saddles						X
Anchor Points						X
Internal Coating				X		
External Coating				X		
Welds	No failure indications observed.	X				X
Flange Face		X				
Internal Corrosion	Corrosion throughout internal and external shell field of varying degrees. Currently acceptable but coating required to ensure extend service life.		X			
External Corrosion			X			
Shell Distortions, Deformations		X				
Pitting	Significant pitting observed. Currently acceptable but coating required to ensure extend service life.		X			
Dents, Gouges		X				
Spider Cracking		X				
Brittle Fracture		X				
General Condition			X			

Other . The tank remains viable and is recommended for continued service. The next recommended internal inspection is in February 2025.

Coating failures and pitting exist in scattered localized areas throughout the internal shell field.



Moderate pitting is shown in this picture of the external shell that extends through the concrete wall.

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API 653, 510, 570: NACE CP4, CIP2: STI SP-001

Shell Plate Ultrasonic Thickness Survey Data

Data in thousandths of inch unless otherwise specified

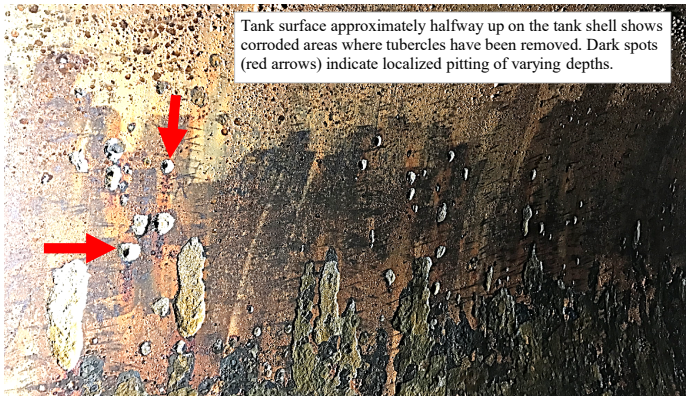
		Shell Ring 1	Shell Ring 2	Shell Ring 3	Shell Ring 4	Shell Ring 5	Front Head	Back Head
Asset Identification #	**Abenaki Water Company**	336	357	380	364	362	353	356
Site Address	**6 Rocky Point Dr.**	363	345	384	356	342	350	355
	Bow, NH 03304	369	360	355	357	341	354	346
Service	**Potable Water**	360	355	386	375	334	350	366
Construction Date	**Circa 1975**	353	371	376	372	350	346	342
Asset Type	**Underground Atmospheric Storage Tank**	339	358	370	357	358	352	337
Material of Construction	**Carbon Steel**	363	340	354	345	357	347	347
Primary Diameter	**102"**	365	350	357	358	359	349	354
Primary Length	**432"**	344	352	342	350	355	356	340
Single Wall	**Yes**	341	354	373	359	338	351	337
Capacity	**15,000 gallons**	328	348	335	363	367	345	355
Inspection Date	**2/19/2020**	329	359	370	355	353	348	
Next Inspection Date	**February 2025**						356	
							351	
							352	

The minimum thickness required is derived from UL 58 using Roark's Equation for minimum thickness of underground tanks. 4ft Entered as assumed burial depth.

Column Average	349	354	365	359	351	351	349
Total Average Component Thickness	356					351	349
Current Thinnest Measured Component Thickness	328					345	337
Assumed Design Thickness (as built)	375					375	375
Worst Case Metal Loss	47					30	38
Number of Service Years	45					45	45
Worst Case Shell/Head Plate Corrosion Rate/Yr in inches	0.0010					0.00067	0.00084
*Minimum Thickness Required per UL 58	281					281	281
Current shell thickness available for corrosion allowance inches.	0.04700					0.06	0.06
Estimated Remaining Service Life of plate in years. *Exclusive of localized pitting.	45					96	66

TANK CALCULATIONS USING PROPOSED UL58	
SINGLE WALL (& TYPE II)	
BURIAL DEPTH, ft	4
TANK CAPACITY, gal	15000
TANK DIAMETER,IN	102
TANK LENGTH, ft	36
TANK THICKNESS, in	0.375
M OF I reqd	NA
L/D	4.235294118
Tank Thickness* .75	0.28125

The ultrasonic thickness survey was conducted with a 2014 Olympus MODEL 38DL PLUS ULTRASONIC THICKNESS GAUGE as seen left. The gauge was field calibrated on February 19, 2020 @ 1000 hrs using .180, .244 and .380 inch carbon steel coupons. The NDT operator was MJJ UT Tech Level 1



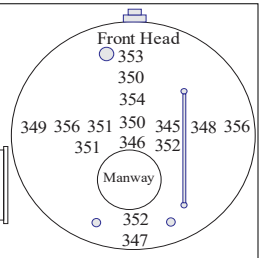
Tank surface approximately halfway up on the tank shell shows corroded areas where tubercles have been removed. Dark spots (red arrows) indicate localized pitting of varying depths.

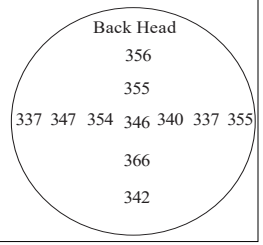
Left Side

336	363	357	345	380	384	364	356	362	342
369	360	360	355	355	386	357	375	341	314
353	339	371	358	376	370	372	357	350	358

Right Side

363	365	340	350	354	357	345	358	357	359
344	341	352	354	342	373	350	359	355	338
328	319	348	359	335	370	363	355	367	353





Abenaki WATER CO.

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Inspection Form Key

INSPECTION DATE(s): 2/11/2020
COMPANY NAME: Abenaki Water Company
TANK ADDRESS: 6 Rocky Point Dr. Bow, NH 03304
CONTACT: Taylor deOgburn - Abenaki Water Primary Operator
INSPECTOR NAME(s): Matthew Jensen

Tank Information							
Manufacturer	Derived from nameplate or tank characteristics						
Identification Number	The ID # of the Tank assigned by client						
Date of Fabrication	Derived from nameplate, plans or interview						
Design Standard	Derived from nameplate or plans						
Service / Product	Type of fluid stored						
Capacity	Derived from nameplate, plans or field measurement						
Diameter	Measured across the tank bottom from outside shell to outside shell.						
Height (shell length)	Measured from tank bottom to top of shell wall not including top cap elevation.						
Material of Construction	The material the tank is made of.						
Double Wall or Single Wall?	Is the tank equipped with a secondary wall to act as a containment vessel?						
Aboveground or Underground?	Is the tank classified as an AST or UST (10% Buried)?						
Visual Inspection	**Criteria**	**Pass**	**Marginal**	**Fail**	**NA**	**None**
FOUNDATION	**The surface on which the tank bares.**	Acceptable for continued service	Line item is absent or in poor condition and repair or replacement is suggested	Line item is absent or in poor condition and requires repair or replacement; and may effect continued service condition	Line item is not applicable to subject tank	Line item is not present or there are no indications
Declivity	Is the tank level?					
Spalling, Cracking	Is the foundation cement crumbling or cracking to the peril of the tanks viability?					
Settlement	Is the foundation sinking to the peril of the tank?					
Other	Are there other concerns such as water damage etc.?					
TANK						
Nameplate	Is nameplate on the tank: ID manufacturer, design standard & construction date?					
Signage	Are there signs which ID the tank's contents?					
Guardrail/Platform/Stairway/Ladder	Are attachments secure, free of damage or missing hardware?					
Emergency Vent	Is there a vent on the AST compliant with UL 142, NFPA 30 & NFPA 1?					
Vent Pipe	Is the vent pipe adequately sized? Any blockage?					
Fill Pipe	Is the fill pipe adequately sized? Any blockage?					
Nozzles	Are nozzles protected, welded, dry with no cracking?					
Interstice Leak Detection Operational?	Is the equipment used to detect fluid in the space between the primary and secondary functional?					
Fluid in Interstice	Is there fluid in the space between the primary and secondary tanks?					
Leaks	Are there any visible leaks at nozzles, pumps, conduits, tank shell?					
Staining	Is there staining anywhere that is tell tale of a recent event or current leak?					
Odor	Is there a product odor indicative of inadequate venting?					
Grounded	Is tank grounded by being bolted to concrete and connected to piping?					
Supports/Saddles	Are supports/saddles installed compliant with UL 142 and are there any failure indications?					
Anchor Points	Are supports anchored to the foundation?					
Internal Coating	Are there any coating failures?					
External Coating	Is the condition of the paint such that it impacts on the tanks viability?					
Welds	Are there undercutting, cracking, penetration failure or other weld failures indicated?					
Flange Face	Is there corrosion or other defects that can impact the liquid tightness of the flange?					
Internal Corrosion	Is there evidence of significant rust and corrosion?					
External Corrosion	Is there evidence of significant rust and corrosion?					
Shell Distortions, Deformations	Distortions that are tell tale of faulty vent, intense heat or design flaw?					
Pitting	Does significant pitting exist?					
Dents, Gouges	Has the tank been hit, dropped or is there other denting indicative of inadequate venting?					
Spider Cracking	Is there any type of cracking especially small clustered cracking at stress points?					
Brittle Fracture	Does the tank design render it susceptible to brittle fracture?					
General Condition	What was the general condition of the tank?					

Other

The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES

Robert R. Scott, Commissioner

May 14, 2020 *Via email only*

Nicholas LaChance
Treasurer, Abenaki Water Co
37 Northwest Dr
Plainville CT 06062
NLaChance@NewEnglandServiceCompany.com

Subject: **Abenaki White Rock Water, Bow NH, PWS# 0262020**
Support for PUC approval to proceed with DWSRF Funding improvements

Dear Mr. LaChance:

The Department of Environmental Services (DES) is pleased to provide this letter of support for PUC approval for the subject water system to proceed with a Drinking Water State Revolving Fund loan (DWSRF) for urgent system improvements and compliance with DES source capacity requirements.

The White Rock water system serves a community of 95 homes, with 3 declining yield well sources and two, 15,000 gallon leaking / corroded storage tanks. This project has been prioritized for a $400,000 low interest loan by the DWSRF program due to acute water shortages suffered in Fall 2019, requiring bulk water deliveries twice per week to keep the system afloat. In addition to ongoing leak repairs in the system, it was discovered that the tanks were leaking. On November 1, 2019, DES cited two significant deficiencies and accepted your corrective action plan to address water system leakage and inadequate source capacity.

In February 2020, a DES tank inspection grant match was awarded and you confirmed that the tanks could be repaired safely rather than the costlier replacement. The tank repairs must be completed *as soon as possible* to avoid the need for new bulk water hauling. We understand the project will also incorporate isolation valves in the distribution system to improve the efficiency of leak detection and repair efforts.

To address the source capacity, the project will include exploration and development of a new well field to supplement the existing bedrock sources. This effort must begin as soon as possible and will likely extend into 2021. Assuming a new well can be permitted on existing land resources, a new booster station and potential water treatment will also be required.

DES appreciates your efforts to date and will continue to work with you to address these issues as soon as PUC approval can be obtained. I can be reached at Cynthia.Klevens@des.nh.gov or 603-271-3108 with any questions about the system requirements and DES' enforcement timeline.

Sincerely,

Cynthia M. Klevens, P.E.
Small Systems Section Manager
Drinking Water and Groundwater Bureau

cc. Cristy Bresson, President, Village Shore Estates Association, Cristy.Bresson@allianzrm-us.com
Johnna McKenna, Manager, NHDES DWSRF Program, Johnna.McKenna@des.nh.gov
SRF and PWS files