

Recent work at the state and national level focuses on developing a better understanding of current UST infrastructure, corrosion, and whether aging tanks and changing fuel formulations increase risk of leaks.

As part of the first phase of infrastructure evaluation, the Arizona Department of Environmental Quality (ADEQ) conducted internal inspections on 79 school-owned fuel

storage tanks using Tanknology's video technology. Representative of the UST infrastructure in Arizona, the study tanks were of various ages and construction and had been exposed to changing fuel formulations.







## AN INSIDE VIEW OF ARIZONA'S UNDERGROUND STORAGE TANKS

Tar	nk Grading Scale
Grade	Description
Α	No issues – Gelcoat intact and no visual cracking, degradation, deformation, or discoloration. The tank looks good.
В	<b>Minimal to Moderate issues</b> – Minor flaking, blistering, deformation, discoloration, or oxidation. Ideally less than 5% of the tank surfaces exhibit signs of degradation. Signs of aging are present. Structural integrity of the tank is unaffected.
C	Moderate to Major issues – Heavy flaking, blistering, corrosion, deformation, or minor cracks. Signs of degradation, stress, or structural integrity being effected. Ideally less than 50% of the tank surfaces exhibit signs of degradation. Further investigation is warranted.
D	Severe issues – Severe cracks or evidence of fuel egress, water ingress, or heavy degradation observed on more than 50% of the tank surfaces. Structural integrity has been compromised. Timely investigation is warranted.
E	Tank unable to be assessed – Too much product, fogging, or too little light.

logy worked with ADEQ to provide neral grades reflecting the observed condition of the tank.

What are We		Arizona Depu of Environme					
Currently, 79 tanks have been inspected:							
				Tank Grade			
Fuel Type	Number of Tanks	А	В	С	D	E	
Gasoline	31		48%	29%	23%		
Diesel	48	4%	86%	8%		2%	
Construction	Number of Tanks	Α	В	С	D	E	
Steel (asphalt-coated or bare steel)	6		5	1			
Composite (steel/fiberglass)	7		5	2			
Fiberglass Reinforced Plastic (FRP)	66	2	46	10	7	1	

rage "age" of school-owned tanks is approximately 28 years since installation. The rage of all AZ tanks is approximately 23 years since installation

Diesel Fuel Quality Snapshot						
Diesel fuel samples w	ere collected from 23 ta	anks.				
General results are summarized below: Tank Grade						
Lab Results	Number of Tanks	Α	В	С	D	E
Critical	7		5	2		2
Reportable	8		6	1		1
Normal	8		8			
					Filt	
Critical Reportable					Normal	

## Critical Fuel Results (Diesel):

\DEQ 🙀

Approximately 30% of the fuel samples were identified as "Critical" by the laboratory. Below are some additional details for those tank samples:

Tank No.	Tank Age (years)	Water detected	% RH	Temperature (F)	BS&W % Volume	BS&W Comments
1	27	No	38	74	20	19.5% water
2	30	No	29	84	95	94.5% water
3	35	Yes	35	47	60	55% water
4	31	Possible	31	80	80	79.5% water
5*	33	Possible	41	87	15	10% water
6**	30	Yes	26	66	80	80% water
7	25	Yes	20	69	50	50% sediment

\* Bacteria results positive: bacteria count/mL at 1:10 dilution – 100,000. \*\* water collected from tank bottom: 2,100 ppm ethanol











Min. to mod.; Critical fuel quality; 31 years old







ADEQ wishes to thank: The Arizona Schools EPA Office of Underground Storage Tanks Steel Tank Institute EPA Office of Research and Development

Two schools who had their tanks scoped also elected to have their tanks removed through ADEQ:

Release confirmed and subsequently closed based on sampling results





Lining approximately 2 years old No release confirmed



Tiffany Yee

602-771-2316 TJY@azdeq.gov azdeq.gov/programs/UST