

**Economic Impact Analysis for Proposed Changes to Underground Storage Tank (UST) Rules
July 2016**

Rule Citation & Title:

- 15A NCAC 02N .0101** – General
- 15A NCAC 02N .0102** – Copies of referenced federal regulations
- 15A NCAC 02N .0103** – Adoption by reference updates
- 15A NCAC 02N .0104** – Identification of tanks
- 15A NCAC 02N .0201** – Applicability
- 15A NCAC 02N .0202** – Interim prohibition for deferred UST systems
- 15A NCAC 02N .0203** – Definitions
- 15A NCAC 02N .0301** – Performance standards for UST system installations or replacements completed after December 22, 1988 and before November 1, 2007
- 15A NCAC 02N .0302** – Upgrading of existing UST systems after December 22, 1988 and before November 1, 2007
- 15A NCAC 02N .0303** – Notification requirements
- 15A NCAC 02N .0304** – Implementation schedule for performance standards for new UST systems and upgrading requirements for existing UST systems located in areas defined in Rule .0301(d)
- 15A NCAC 02N .0401** – Spill and overfill control
- 15A NCAC 02N .0402** – Operation and maintenance of corrosion protection
- 15A NCAC 02N .0403** – Compatibility
- 15A NCAC 02N .0404** – Repairs allowed
- 15A NCAC 02N .0405** – Reporting and recordkeeping
- 15A NCAC 02N .0406** – Periodic testing of spill prevention equipment and containment sumps used for interstitial monitoring of piping and periodic inspection of overfill prevention equipment
- 15A NCAC 02N .0407** – Periodic operation and maintenance walkthrough inspections
- 15A NCAC 02N .0501** – General requirements for all UST systems
- 15A NCAC 02N .0502** – Requirements for petroleum UST systems
- 15A NCAC 02N .0503** – Requirements for hazardous substance UST systems
- 15A NCAC 02N .0504** – Methods of release detection for tanks
- 15A NCAC 02N .0505** – Methods of release detection for piping
- 15A NCAC 02N .0506** – Release detection recordkeeping
- 15A NCAC 02N .0601** – Reporting of suspected releases
- 15A NCAC 02N .0602** – Investigation due to off-site impacts
- 15A NCAC 02N .0603** – Release investigation and confirmation steps
- 15A NCAC 02N .0604** – Reporting and cleanup of spills and overfills
- 15A NCAC 02N .0701** – General
- 15A NCAC 02N .0702** – Initial response
- 15A NCAC 02N .0703** – Initial abatement measures and site check
- 15A NCAC 02N .0704** – Initial site characterization
- 15A NCAC 02N .0705** – Free product removal
- 15A NCAC 02N .0706** – Investigations for soil and ground water cleanup

15A NCAC 02N .0707 – Corrective action plan
15A NCAC 02N .0708 – Public participation
15A NCAC 02N .0801 – Temporary closure
15A NCAC 02N .0802 – Permanent closure and changes-in-service
15A NCAC 02N .0803 – Assessing the site at closure or change-in-service
15A NCAC 02N .0804 – Applicability to previously closed UST systems
15A NCAC 02N .1001 – Definitions
15A NCAC 02N .1002 – General requirements
15A NCAC 02N .1003 – Additions, exceptions, and alternatives for UST systems with field-constructed tanks and airport hydrant systems
15A NCAC 02O .0309 – Local government bond rating test
15A NCAC 02O .0310 – Local government financial test
15A NCAC 02O .0311 – Local government guarantee
15A NCAC 02O .0312 – Local government fund
15A NCAC 02O .0313 – Substitution of financial assurance mechanisms
15A NCAC 02O .0314 – Cancellation or nonrenewable by a provider of assurance

Name of Commission: Environmental Management Commission

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Impact Summary: State government: Yes
 Local government: Yes
 Private industry: Yes
 Substantial impact: Yes
 Federal government: Yes

Authority: §143-215.94T provides authority for the Environmental Management Commission (EMC) to adopt and the Department of Environment Quality (DEQ) to implement and enforce rules relating to UST systems including standards and requirements applicable to existing and new UST systems. State rules governing UST systems are found in Title 15A, Subchapter 02N and 02O of the North Carolina Administrative Code.

Necessity: The proposed rule changes are necessary to incorporate into the state's rules, changes that were made to the federal UST regulations (40 CFR Part 280). The State is required to incorporate the federal changes to retain its State Program Approval.

I. Introduction

The purpose of this document is to provide a regulatory impact analysis of proposed amendments to 15A NCAC 02N and 15A NCAC 02O.

The rules in 15A NCAC 02N and 15A NCAC 02O are largely based on the requirements of 40 CFR Part 280.

Revisions were made to 40 CFR 280 by the Environmental Protection Agency (EPA) and published in the Federal Register on July 15, 2015. The revised federal regulation represents the first major revision to the federal underground storage tank (UST) regulations since 1988. The revisions change existing requirements for USTs and add new requirements for secondary containment and operator training that are similar to key portions of the Energy Policy Act of 2005. EPA requires that a state receiving Leaking UST Trust Funds must implement the new regulations by October 13, 2018, or risk losing the federal monies that it receives for the UST program which total approximately \$2.9 million annually.

Revisions to 40 CFR 280 Subpart H – Financial Responsibility by the EPA were published in February 1993. The revisions amended 40 CFR 280.104-280.109 to add four additional financial mechanisms and then renumber two existing mechanisms. These additional mechanisms have been available to North Carolina UST owners and operators even though they are not listed in 15A NCAC 02O because the regulations of Subpart H were incorporated by reference including any subsequent amendments and editions. 15A NCAC 02O is included in this analysis because this rulemaking effort will codify those revisions.

The proposed effective date for the rule changes is June 1, 2017.

II. Proposed Changes

A. 15A NCAC 02O

The proposed amendments to 15A NCAC 02O will not have any economic impact. Since these amendments simply add additional options for meeting existing financial responsibility requirements, the economic impact of these changes would be zero.

B. 15A NCAC 02N

EPA revised the 1988 40 CFR 280 regulation to: ensure owners and operators properly operate and maintain their UST systems; address UST systems deferred in the 1988 UST regulation; include updates to current technology and codes of practice; and make technical and editorial corrections. These revisions created additional requirements for UST systems.

This analysis relies on data from EPA's April 2015 financial impact document entitled *Assessment of the Potential Costs, Benefits, and Other Impacts of the Final Revisions to EPA's Underground Storage Tank Regulations* (hereafter "Assessment of the Potential Costs"). In the "Assessment of the Potential Costs," the EPA identified all

quantitative and qualitative impacts for the UST regulation (within the constraints of data availability). However, whenever available, this analysis uses North Carolina data concerning the numbers of UST facilities and UST systems affected.

Table 1 is based on Exhibit 2-4 of EPA's *Assessment of the Potential Costs* and lists each regulatory change, the universe affected, and the proportion of the total universe affected by each change. By applying the proportions to the North Carolina UST system population, the number of UST systems or UST facilities potentially affected annually in North Carolina is calculated. The table also includes the assumptions and sources used to determine the proportion affected. UST systems that were installed on or after November 1, 2007, were not included in the number of potentially affected systems for requirements that were already implemented in North Carolina as part of the federal Energy Policy Act of 2005.

Table 1. Number of systems potentially affected by new requirements

Regulatory Change	Universe	Proportion of Total Universe Affected Annually	Number of Potentially Affected Facilities or Systems (Annual)	Assumptions	Source
Release Prevention					
Walkthrough inspections	Facilities with Conventional UST systems and Emergency Generator Tanks (EGTs)	100.0%	7,802 facilities	All facilities require periodic walkthrough inspections.	UST Program records.
Overfill prevention equipment inspections	Conventional UST systems and EGTs	100.0%	23,272 systems	Percentage of UST systems with overfill prevention equipment.	UST Program records and EPA assumption that all UST systems have overfill.
Spill prevention equipment tests	Conventional UST systems and EGTs	90.0%	20,765 systems	One-to-one spill prevention equipment to tank ratio; 10 percent have self-monitoring mechanism and do not need monitoring.	UST Program records and EPA estimate based on discussions with service contractors and inspectors.
Containment sump testing	Conventional UST systems and EGTs	18.3%	4,258 systems	Pipes that use interstitial monitoring and do not use continuous sensors, pressure, vacuum, or liquid-filled leak detection monitoring mechanisms.	UST Program records and EPA analysis.
Spill prevention equipment inspection after repair	Conventional UST systems and EGTs	2.5%	581 systems	Spill prevention equipment requires fix once every four years; repairs are used as the fix 10 percent of the time.	UST Program records and EPA analysis.
Overfill prevention equipment test after repair	Conventional UST systems and EGTs	2.0%	501 systems	Overfill prevention equipment requires fix once every five years; repairs are used as the fix 10 percent of the time.	UST Program records and EPA analysis.
Secondary containment test after repair	Conventional UST systems and EGTs	3.3%	768 systems	Tanks and pipes that use interstitial monitoring and do not use	UST Program records and EPA analysis.

				continuous sensors, pressure, vacuum, or liquid-filled leak detection monitoring mechanisms. Includes five percent of tanks and 90 percent of piping that use interstitial monitoring. Assumes 20 percent of pipes and five percent of tanks require repair every year.	
Eliminate flow restrictors in vent lines for all new tanks and when overfill prevention equipment is replaced	Conventional UST systems and EGTs	13.5%	338 systems	13 percent of new UST systems would have installed flow restrictors in vent lines, and 13 percent of existing UST systems with replaced overfill prevention equipment would have installed flow restrictors in vent lines. Assumes five percent turnover of UST systems, a 19 percent test fail rate for flow restrictor, and that 90 percent of fixes require replacement of the flow restrictor.	UST Program records and EPA analysis.
Release Detection					
Operability tests – ATG	Conventional UST systems and EGTs	33.7%	8,447 systems	UST systems that use automatic tank gauges.	UST Program records and EPA analysis.
Operability tests – interstitial monitoring	Conventional UST systems and EGTs	18.8%	4,375 systems	UST systems that use interstitial monitoring (excluding five percent that conduct manual testing of the interstice).	UST Program records and EPA analysis.
Operability tests – line leak detection	Conventional UST systems and EGTs	27.5%	6,893 systems	Pressurized piping systems that use electronic line leak detectors.	UST Program records and EPA analysis.
Operability tests – groundwater and vapor monitoring	Conventional UST systems and EGTs	4.5%	1,128 systems	UST systems that use vapor monitoring and/or groundwater monitoring as their sole release detection method(s).	UST Program records and EPA analysis.
Add SIR/CITLD to regulation with performance criteria	Conventional UST systems and EGTs	0.5%	1,253 systems	13 percent of UST systems use SIR; 15 percent of these use qualitative methods. Of these, 25 percent are assumed to incur costs to comply.	UST Program records and EPA analysis.
Response to interstitial monitoring alarms	Conventional UST systems and EGTs	2.4%	601 systems	Weighted average annual percentage of UST systems and piping that experience an interstitial monitoring alarm. Assumes 20 percent of tanks and 18 percent of pipes use interstitial monitoring, and that three percent of tanks and 10 percent	UST Program records and EPA analysis.

				of pipes experience an alarm in a given year.	
Remove release detection deferral for emergency generator tanks	EGTs	3.0%	752 systems	UST systems assumed to be emergency generator tanks.	UST Program records and EPA review of over 15 state databases and discussions with several state UST program representatives.
Other					
Remove deferral for airport hydrant fuel distribution systems	AHFDSs	100.0%	2 facilities	All airport hydrant fuel distribution systems.	UST Program records and EPA analysis.
Remove deferral for UST systems with field-constructed tanks	FCTs	100.0%	0 systems	All UST systems with field-constructed tanks, including 334 DoD systems and 12 DoE systems.	UST Program records.
Require notification of ownership change	Facilities with Conventional UST systems and EGTs	10.1%	788 facilities	Annual number of facilities that change ownership.	UST Program records and EPA analysis.
Closure of lined tanks that cannot be repaired according to a code of practice	Conventional UST systems and EGTs	<0.1%	25 systems	Annual number of lined UST systems that cannot be repaired	UST Program records and EPA analysis.
Requirements for demonstrating compatibility with fuels > E10 and > B20	Conventional UST systems and EGTs	0.04%	10 systems	0.4 percent of conventional UST systems and EGTs use fuels E >10 or B > 20, assume 10 percent can demonstrate compatibility	UST Program records and EPA analysis which includes U.S. Department of Energy's (DoE's) Alternative Fuels Data Center listing stations selling E85 fuel.
EPAct-related Provisions					
Operator training	UST Facilities in Indian country	100.0%	0 facilities	All facilities in Indian country.	Not applicable – applies to facilities in Indian country.
Secondary containment - new and replaced tanks	UST systems in Indian country	36.2%	0 systems	Applies to systems in Indian country.	Not applicable – applies to UST systems in Indian country.
Threshold for pipe replacement rather than repair	UST systems in Indian country	30.2%	0 systems	Applies to systems in Indian country.	Not applicable – applies to UST systems in Indian country.
Under-dispenser containment for all new dispensers	UST systems in Indian country	48.5%	0 systems	Applies to systems in Indian country.	Not applicable – applies to UST systems in Indian country.

Table 2 lists how often each of the new requirements must be carried out and the deadlines for meeting each requirement.

Table 2. Frequency and Deadlines for Requirements

	Frequency	Deadline
Release Prevention		
Walkthrough inspections	Every month	First inspection no later than 10-13-18, then monthly thereafter
Overfill prevention equipment inspections	Every 3 years	First inspection no later than 10-13-18, then every three years thereafter
Spill prevention equipment tests	Every 3 years	First test no later than 10-13-18, then every three years thereafter
Containment sump testing	Every 3 years	First test no later than 10-13-18, then every three years thereafter
Spill prevention equipment inspection after repair	Within 30 days of repair	Beginning on 10-13-18
Overfill prevention equipment test after repair	Within 30 days of repair	Beginning on 10-13-18
Secondary containment test after repair	Within 30 days of repair	Beginning on 10-13-18
Eliminate flow restrictors in vent lines for all new tanks and when overfill prevention equipment is replaced	At installation or when replaced	Beginning on effective date of NC's rules
Release Detection		
Operability tests – ATG	Every year	Beginning on 10-13-18
Operability tests – interstitial monitoring	Every year	Beginning on 10-13-18
Operability tests – line leak detection	Every year	Beginning on 10-13-18
Operability tests – vapor monitoring	Every year	Beginning on 10-13-18
Operability tests – groundwater monitoring	Every year	Beginning on 10-13-18
Site assessment – vapor monitoring	One time	By 10-13-18
Site assessment – groundwater monitoring	One time	By 10-13-18
Add SIR/CITLD to regulation with performance criteria	One time	Beginning on effective date of NC's rules
Response to interstitial monitoring alarms	Within 24 hours of alarm	Beginning on effective date of NC's rules
Remove release detection deferral for emergency generator tanks	One time	By 10-13-18
Other		
Remove deferral for airport hydrant fuel distribution systems	One time then every year	By 10-13-18
Remove deferral for UST systems with field-constructed tanks	One time	By 10-13-18
Require notification of ownership change	Within 30 days of ownership change	Beginning on effective date of NC's rules
Closure of lined tanks that cannot be repaired according to a code of practice	One time	Beginning on effective date of NC's rules
Requirements for demonstrating compatibility with fuels > E10 and > B20	One time	Beginning on effective date of NC's rules
Cost to owners/operators to read regulation	One time	Beginning on effective date of NC's rules
EPAct-related Provisions		
Operator training	N/A	N/A
Secondary containment - new and replaced tanks	N/A	N/A
Threshold for pipe replacement rather than repair	N/A	N/A
Under-dispenser containment for all new dispensers	N/A	N/A

III. Costs

Table 3 is based on Exhibit 3-1 of EPA's *Assessment of the Potential Costs* and lists the unit costs associated with each regulatory change.

Table 3. Cost per requirement

	One-time	O&M	Repair/replacement cost
Release Prevention			
Walkthrough inspections	\$0.00	\$16.99	\$0.14
Overfill prevention equipment inspections	\$0.00	\$228.91	\$67.07
Spill prevention equipment tests	\$0.00	\$138.38	\$37.53
Containment sump testing	\$0.00	\$669.32	\$86.97
Spill prevention equipment inspection after repair	\$0.00	\$363.42	\$0.00
Overfill prevention equipment test after repair	\$0.00	\$400.71	\$0.00
Secondary containment test after repair	\$0.00	\$188.23	\$0.00
Eliminate flow restrictors in vent lines for all new tanks and when overfill prevention equipment is replaced	\$420.37	\$0.00	\$0.00
Release Detection			
Operability tests – ATG	\$0.00	\$61.41	\$9.40
Operability tests – interstitial monitoring	\$0.00	\$10.83	\$9.73
Operability tests – line leak detection	\$0.00	\$61.41	< \$0.01
Operability tests – vapor monitoring	\$0.00	\$10.83	\$1.20
Operability tests – groundwater monitoring	\$0.00	\$10.83	\$0.62
Add SIR/CITLD to regulation with performance criteria	\$10.66	\$0.00	\$0.00
Response to interstitial monitoring alarms	\$0.00	\$0.00	\$0.00
Remove release detection deferral for emergency generator tanks	\$296.94	\$193.41	
Other			
Remove deferral for airport hydrant fuel distribution systems	\$128,828.95		
Remove deferral for UST systems with field-constructed tanks	\$30,744.57		
Require notification of ownership change	\$0.00	\$14.27	\$0.00
Closure of lined tanks that cannot be repaired according to a code of practice	\$41,802.90	\$0.00	\$0.00
Requirements for demonstrating compatibility with fuels > E10 and > B20	\$1.93	\$0.00	\$0.00
Cost to owners/operators to read regulation	\$271.12	\$0.00	\$0.00
EPAAct-related Provisions			
Operator training	\$303.64	\$139.36	\$0.00
Secondary containment - new and replaced tanks	\$8,413.90	\$0.00	\$0.00
Threshold for pipe replacement rather than repair	\$0.00	\$0.00	\$0.00
Under-dispenser containment for all new dispensers	\$1,914.27	\$0.00	\$0.00

Potential Impact to the Implementing Agency

There will be impacts to the implementing agency. UST inspectors will have to inspect additional UST facilities, such as facilities with airport hydrant fuel distribution systems. They will also have to inspect for additional requirements at each UST facility. In order to accomplish this using existing resources, the frequency that a facility is inspected will be increased from about 2.5 years to almost three years. This could potentially result in more leaks from UST systems as facilities could be in violation of the rules for longer time periods.

Potential Impact to the Regulated Community

The proposed amendments to 15A NCAC 02N will economically impact the regulated community.

Table 4 lists the number of USTs owned by each sector – federal government, local/county government, state government, and privately-owned – based on UST program records from July 2016.

Table 4. Number of Tanks Owned By Sector

Owner	Before 11-1-07			On or after 11-1-07		
	Emergency Power Generation	Airport hydrant	Motor Fuel	Emergency Power Generation	Airport hydrant	Motor Fuel
Federal government	8	12	89	0	0	7
Local/county government	48	0	564	1	0	26
State government	1	0	321	0	0	8
Private	130	0	22,249	20	0	1,733

Table 5 lists the number of UST facilities owned by each sector based on UST program records from July 2016.

Table 5. Number of Facilities Owned By Sector

Owner	Before 11-1-07			On or after 11-1-07		
	Emergency Power Generation	Airport hydrant	Motor Fuel	Emergency Power Generation	Airport hydrant	Motor Fuel
Federal government	7	2	27	0	0	3
Local/county government	50	0	256	1	0	13
State government	1	0	194	0	0	6
Private	157	0	6,637	14	0	503

Table 6 lists the number of UST systems or facilities in each sector affected by each regulation annually.

Table 6. Number of Affected Systems or Facilities Annually By Sector

Requirement	Federally-owned systems or facilities affected	Local/county-owned systems or facilities affected	State-owned systems or facilities affected	Privately-owned systems or facilities affected
Release Prevention				
Walkthrough inspections	39	320	201	7311
Overfill prevention equipment inspections	109	612	322	22,379
Spill prevention equipment tests	98	550	289	20,141
Containment sump testing	19	111	58	4,095
Spill prevention equipment inspection after repair	2	15	8	559
Overfill prevention equipment test after repair	2	12	6	447
Secondary containment test after repair	3	20	10	738
Eliminate flow restrictors in vent lines for all new tanks and when overfill prevention equipment is replaced	15	86	44	3,257
Release Detection				
Operability tests – ATG	39	215	111	8,132
Operability tests – interstitial monitoring	21	120	62	4,536
Operability tests – line leak detection	45	175	90	6,636
Operability tests – vapor monitoring	5	28	14	1,085
Operability tests – groundwater monitoring	5	28	14	1,085
Add SIR/CITLD to regulation with performance criteria	<1	3	1	120
Response to interstitial monitoring alarms	2	15	7	579
Remove release detection deferral for emergency generator tanks ^a	8	48	1	130
Other				
Remove deferral for airport hydrant fuel distribution systems ^a	2	0	0	0
Remove deferral for UST systems with field-constructed tanks	0	0	0	0
Require notification of ownership change	3	32	20	73
Closure of lined tanks that cannot be repaired according to a code of practice	<1	<1	<1	22
Requirements for demonstrating compatibility with fuels > E10 and > B20	<1	<1	<1	9
EPAct-related Provisions				
Operator training	0	0	0	0
Secondary containment - new and replaced tanks	0	0	0	0
Threshold for pipe replacement rather than repair	0	0	0	0
Under-dispenser containment for all new dispensers	0	0	0	0

Footnote:

- a. Due to the availability of State program records, the actual number of tanks registered in North Carolina was used instead of the federal proportion for increased accuracy.

Table 7 lists the costs of each regulation annually by sector.

Table 7. Costs Annually By Sector

Requirement	Federally-owned systems or facilities affected	Local/county-owned systems or facilities affected	State-owned systems or facilities affected	Privately-owned systems or facilities affected
Release Prevention				
Walkthrough inspections	\$7,951	\$65,232	\$40,968	\$1,490,556
Overfill prevention equipment inspections	\$24,951	\$140,092	\$73,709	\$5,122,776
Spill prevention equipment tests	\$13,561	\$76,109	\$39,991	\$8,321,179
Containment sump testing	\$12,717	\$74,294	\$38,820	\$2,740,865
Spill prevention equipment inspection after repair	\$726	\$5,451	\$2,907	\$203,151
Overfill prevention equipment test after repair	\$801	\$4,808	\$2,404	\$179,117
Secondary containment test after repair	\$564	\$3,764	\$1,882	\$138,913
Eliminate flow restrictors in vent lines for all new tanks and when overfill prevention equipment is replaced	\$6,305	\$36,151	\$18,496	\$1,369,145
Release Detection				
Operability tests – ATG	\$2,394	\$13,203	\$6,816	\$499,386
Operability tests – interstitial monitoring	\$227	\$1,299	\$671	\$49,124
Operability tests – line leak detection	\$2,763	\$10,746	\$5,526	\$407,516
Operability tests – vapor monitoring	\$54	\$303	\$151	\$11,750
Operability tests – groundwater monitoring	\$54	\$303	\$151	\$11,750
Add SIR/CITLD to regulation with performance criteria	\$0	\$31	\$10	\$1,279
Response to interstitial monitoring alarms	\$0	\$0	\$0	\$0
Remove release detection deferral for emergency generator tanks	\$2,375 ^a \$1,547	\$14,253 ^a \$9,283	\$296 ^a \$193	\$38,602 ^a \$25,090
Other				
Remove deferral for airport hydrant fuel distribution systems	\$257,657 ^a	\$0	\$0	\$0
Remove deferral for UST systems with field-constructed tanks	\$0	\$0	\$0	\$0
Require notification of ownership change	\$42	\$456	\$285	\$1,041
Closure of lined tanks that cannot be repaired according to a code of practice	\$0	\$0	\$0	\$919,663
Requirements for demonstrating compatibility with fuels > E10 and > B20	\$0	\$0	\$0	\$0
EPAAct-related Provisions				
Operator training	\$0	\$0	\$0	\$0
Secondary containment - new and replaced tanks	\$0	\$0	\$0	\$0
Threshold for pipe replacement rather than repair	\$0	\$0	\$0	\$0
Under-dispenser containment for all new dispensers	\$0	\$0	\$0	\$0

Footnote:

- a. One-time cost

Tables 8 demonstrates the costs of the new regulations to each sector. The first column includes the costs that would be incurred from the effective date of the North Carolina rules up until October 13, 2018, the federal deadline for some requirements. The six subsequent columns in the table include costs that would be incurred over the next six years.

Table 8. Projected costs for USTs owned by owner

	Rules effective date – Oct. 13, 2018	Oct. 2018- Oct. 2019	Oct. 2019- Oct. 2020	Oct. 2020- Oct. 2021	Oct. 2021- Oct. 2022	Oct. 2022- Oct. 2023	Oct. 2023- Oct. 2024	Total
Federally-owned	\$260,032	\$74,657	\$74,657	\$74,657	\$74,657	\$74,657	\$74,657	\$707,974
Local/ county-owned	\$14,253	\$441,525	\$441,525	\$441,525	\$441,525	\$441,525	\$441,525	\$2,663,403
State-owned	\$296	\$232,980	\$232,980	\$232,980	\$232,980	\$232,980	\$232,980	\$1,398,176
Privately owned	\$38,602	\$21,492,301	\$21,492,301	\$21,492,301	\$21,492,301	\$21,492,301	\$21,492,301	\$128,992,408
Total	\$313,183	\$22,241,463	\$22,241,463	\$22,241,463	\$22,241,463	\$22,241,463	\$22,241,463	\$133,761,961

IV. Benefits

The proposed amendments are expected to reduce contamination of soil and groundwater in North Carolina through improved equipment maintenance and monitoring. Avoided remediation costs of the final UST regulation represent cost savings that accrue to owners, operators, and public entities responsible for remediating releases at regulated facilities. In addition to avoiding remediation costs, release prevention and mitigation results in a variety of other beneficial impacts, including: avoided vapor intrusion damages; avoided product loss; human health benefits; avoided acute exposure events and large-scale releases; and ecological benefits (including protection of groundwater quality). The “Assessment of the Potential Costs” includes data from four experts that EPA consulted with to evaluate beneficial impacts of the new regulation. Based on data provided by each expert, the regulation will protect an average of 130 billion gallons of groundwater per year nationally by avoiding releases. Additionally, the data indicated that the monetized avoided costs due to the regulation change is on average \$310 million on a national level.

V. Conclusion

The proposed rule amendments serve to incorporate revisions made by the EPA to 40 CFR Part 280 that affect North Carolina rules 15A NCAC 02N and 15A NCAC 02O. The revisions that affect 15A NCAC 02N will impact UST owners and operators by adding requirements for UST system compliance with total associated costs. The revisions that affect 15A NCAC 02O give UST owners and operators additional options for satisfying financial responsibility requirements and therefore will not have any economic impact. The revisions are expected to reduce contamination of soil and groundwater and avoid costs associated with remediation and mitigation of releases.