

***Ohio Petroleum Underground Storage
Tank Release Compensation Board***

Estimated Unpaid Claims Liability

As of June 30, 2019

Petroleum Underground Storage Tank Release Compensation Board
Estimate of Unpaid Reimbursement Liability
For the Year Ended June 30, 2019

Purpose of Report

The Petroleum Underground Storage Tank Release Compensation Board (the Board) was created in 1989 to administer Ohio's Petroleum Underground Storage Tank (UST) Financial Assurance Fund (the Fund). The Fund was created in response to U. S. Environmental Protection Agency (EPA) regulations requiring responsible persons (UST owners and operators) to demonstrate the capability to pay for correction actions caused by accidental releases of petroleum from UST systems and costs for third party liability resulting from releases. The Fund generally reimburses UST owners up to \$1 million per release, less a deductible. The deductible is based on the number of tanks owned and fees paid in a given year. An owner may receive up to \$4 million per year, depending on the number of tanks owned. To obtain a Certificate of Coverage and be eligible for reimbursement from the Fund, owners must participate in the Fund by paying an annual per-tank fee and certifying compliance with federal and state regulations as well as complying with the Board's internal procedures regarding the reporting and remediation of releases.

The Board annually estimates the unpaid reimbursement liability of the Fund. In fiscal years' 2003 and 2007, as a result of changes in assumptions, the Board engaged a professional actuary firm to perform an independent review of the assumptions and methodology used in developing this estimate as well as to provide an estimate of the Fund's unpaid reimbursement liability for the fiscal year under review. Under the guidance of a professional actuary firm, beginning in fiscal year 2010, management modified the historical analysis framework by adjusting the data available at April 30 to expected June 30 values. These expected values are then used in the development of the loss reserve estimate at June 30.

As a result of ongoing litigation, the Board suspended the settlement of 220 claims filed by four major oil companies (Held Claims). For fiscal year 2018, the Board engaged an independent actuarial firm (the Actuary) to develop an estimate of the liability of the unpaid Held Claims, which was combined with the analysis of the unpaid non-Held Claims performed by Board staff to provide a total loss reserve estimate as of June 30, 2018. In order to develop the loss reserve estimate as of June 30, 2019 in a manner similar to the prior year, at its June 12, 2019 meeting, the Board approved contracting with the Actuary for the purpose of assisting the Fund in developing potential claim liability estimates for unpaid claims as of June 30, 2019. Similar to the prior year, the Actuary performed an independent analysis of the Fund's Held Claims and management performed an internal analysis of the non-Held Claims. In addition to the formal report provided to the Fund (referred to herein as the Independent Actuarial Analysis), the Actuary reviewed management's internal analysis and provided feedback and suggestions and highlighted the impact of certain assumptions on the results for management's consideration. A copy of the Independent Actuarial Analysis may be obtained, pursuant to Ohio Revised Code 149.43, by writing to the Board at P.O. Box 2280, Westerville, Ohio, 43086-2280 or by calling 614-752-8963.

The following report and schedules are management's estimate of the Fund's loss reserves for the year ended June 30, 2019.

Approach

Separation of Held and Non-Held Claims

To facilitate the review of Held Claims by the Actuary, using data available as of April 30, 2019, management identified 220 claims which have been placed on hold due to ongoing litigation. This data along with historical data on all claims as of April 30, 2019 was provided to the Actuary. A database containing only non-Held Claim data as of April 30, 2018 was used by management to prepare the unpaid claim liability estimate for the non-Held Claims.

The Actuary performed an independent analysis of the Held Claims and provided its findings to management. The results of the Actuary's analysis were combined with management's analysis of the non-Held Claims to obtain the total estimate of the Fund's unpaid claims liability as of June 30, 2019. Additionally, the Actuary reviewed management's analysis of the non-Held Claims and provided comments and suggestions which were used in revising management's estimate as of June 30, 2019.

Use of April 30 data

Similar to the loss reserve estimate for fiscal year 2018, the Board's staff has prepared this report utilizing data available as of April 30, 2019 to estimate the Fund's unpaid reimbursement liability as of June 30, 2019.

Using data available as of April 30, 2019, adjustments were made to the most current year's data (July 1, 2018 – June 30, 2019) to provide expected values as of June 30, 2019. The adjustment, which assumes no seasonality in the notification or payment of claims is as follows:

Estimated June 30, 2019 value = June 30, 2018 value + (April 30, 2019 value – June 30, 2018 value) x (12/10)

The development of the loss reserve estimate utilized values adjusted to June 30, 2019 for the following items:

- Paid Losses (Reported Exhibit 6)
- Gross Face Value (Reported Exhibit 18)
- Reported Claims by Notification Year (Reported Exhibit 29)
- Closed Claims (Reported Exhibit 30)
- Paid Loss on Closed Claims (Reported Exhibit 11)

The Ratio of Disallowed Costs on Closed Claims to Cumulative Gross Face Value on Closed Claims (Reported Exhibit 25), and the Ratio of Deductible Recoveries on Closed Claims to Cumulative Gross Face Value less Disallowed Costs on Closed Claims (Reported Exhibit 27) use unadjusted April values.

The use of values adjusted to June 30 has the potential to impact the development process. Variances could exist due to abnormalities occurring during the last two months of the fiscal year in relation to the number of claims submitted, amount of gross face value from claims submitted, amount of claim payments, and number of claims closed. However, based upon a comparison of management's expected values against actual data as of June 30, 2019, the utilization of the April 30, 2019 data to develop expected June 30, 2019 values did not result in a significant variance that could have distorted the results of the development process.

Actuarial Methods

For the review of non-Held Claims, management used the following five actuarial methods in projecting ultimate fund losses by program notification year:

- Paid loss development
- Average loss
- Bornhuetter-Ferguson using average loss and paid loss
- Ultimate gross face value adjusted for disallowed costs and deductible recoveries
- Bornhuetter-Ferguson using ultimate gross face value and paid loss

Based on the results of these five tests, ultimate losses are selected by program notification year.

The estimated liability on the incurred but not reported (IBNR) claims as of June 30, 2019 was determined by estimating the ultimate claims by program release year using the following two actuarial methods:

- Reported claim development
- Bornhuetter-Ferguson using exposures and reported claims

Because of regulatory requirements that the Board receive an Application for Eligibility within one year of the release date, the liability on unreported claims is limited to only the latest release year. For fiscal year 2019, this is the period of July 1, 2018 through June 30, 2019.

In addition to the IBNR claims, 62 applications for eligibility were pending review and determination at June 30, 2019. These are added to the IBNR counts. Based on past history, management estimates that the applicant of approximately 63% of the IBNR and pending applications will be granted eligibility to file claims for reimbursement with the Fund.

Findings

The Independent Actuarial Analysis of the Held Claims provided a range of net unpaid claim liability as follows:

Estimate	Total
Optimistic	\$ 14,600,000
Actuarial Central	\$ 20,290,000
Pessimistic	\$ 26,200,000

Following discussions with the Actuary, management selected the Actuary's Actuarial Central Estimate of \$20,290,000 as the total unpaid claim liability for Held Claims. It is management's understanding that the Actuarial Central Estimate reflects assumptions in line with the Fund's historical experience and is neither optimistic, nor pessimistic. The Fund estimated that of the total \$20,290,000 unpaid claim liability estimate provided by the Actuary, \$19,883,000 would be allocated for Held Claims reported prior to June 30, 2019, and \$407,000 would be allocated for Held Claims incurred but not reported as of June 30, 2019.

Management's estimate of the unpaid claim liability for non-Held Claims reported as of the valuation date of June 30, 2019 is \$20,201,652. Management's estimated unpaid claim liability of non-Held Claims incurred but not reported as of June 30, 2019 is \$3,108,800.

Based on management's analysis of non-Held Claims and its selection of the Actuarial Central Estimate for Held Claims, the Fund's total unpaid loss liability as of June 30, 2019 is estimated at \$43,600,452.

The table below details this amount and compares it to the estimate of the unpaid loss liability as of June 30, 2018.

Summary of Unpaid Liabilities				
Valuation Date		Claims Reported As of Valuation Date	Claims Unreported As of Valuation Date	Total
June 30, 2019	Non-Held Claims	\$ 20,201,652	\$ 3,108,800	
	Held Claims	19,883,000	407,000	
	Total	\$ 40,084,652	\$ 3,515,800	\$ 43,600,452
June 30, 2018	Non-Held Claims	\$ 17,823,644	\$ 2,336,400	
	Held Claims	22,100,000	360,000	
	Total	\$ 39,923,644	\$ 2,696,400	\$ 42,620,044

Reported Claims

The increase in the estimated unpaid liability for reported claims from the June 30, 2018 valuation is a result of claim reimbursements being paid at a rate less than the increase in the estimated ultimate loss. The estimated ultimate loss increased approximately \$6.58 million from June 30, 2018 to June 30, 2019. The increase in the estimated ultimate loss has three components. The first is the change in the estimates of ultimate losses for Notification Years 2017 and prior, which increased by \$4.5 million. The second component is the estimate of ultimate losses for Notification Year 2018 which totaled \$1.26 million. The third component is the change in the estimate of Unreported Claims, which increased by \$819,400. By comparison, in fiscal year 2019, approximately \$5.60 million was reimbursed.

The following table summarizes the change in the Estimated Unpaid Ultimate Losses:

<u>Estimate as of June 30, 2018</u>	
(1) Notification Years 2017 and Prior	\$ 39,923,644
(2) Unreported Claims	2,696,400
(3) Total	\$ 42,620,044
<u>Change in Estimated Ultimate Claims</u>	
(4) Notification Years 2017 and Prior	\$ 4,501,140
(5) Notification Year 2018	1,256,400
(6) Unreported Claims	819,400
(7) Total	\$ 6,576,940
(8) <u>Paid Losses June 30, 2018 – June 30, 2019</u>	\$ 5,596,532
(9) <u>Unpaid Loss June 30, 2019 [(3)+(7)-(8)]</u>	\$ 43,600,452

Unreported Claims

Unreported claims has two components:

- Incurred but Not Reported; and
- Undetermined eligibility applications.

The estimated loss on unreported claims increased approximately 30.39% from June 30, 2018 to June 30, 2019. This is a result of an increase in the number of undetermined eligibility applications.

Changes from Prior Analysis

Changes in the methods used to make selections in the process of determining the estimated ultimate loss impact the loss reserves. Based on discussions with the Actuary, management made changes in the way selections were made for the valuation period ending June 30, 2019, as follows:

- Selection of the Average Loss

The selected average loss, shown in Reported Exhibit 10, uses the ultimate loss from the prior year report (“Estimated Unpaid Claims Liability Report as of June 30, 2018”, Reported Exhibit 4, Column 7) to develop the preliminary average loss in Column 3. The prior year’s report utilized the Ultimate Loss based on the Paid Loss Development Method. (Reported Exhibit 5, Column 4) to develop the preliminary average loss in Column 3. Although this change has the effect of decreasing the selected average loss, it did not impact management’s selection of ultimate losses on Reported Exhibit 1.

- Selected Ratio of Deductible Recoveries to Total Gross Face Value Less Disallowed Costs

The method to select the ratios to estimate the ultimate deductible recoveries, shown in Reported Exhibit 26, utilizes the same overall approach as in previous years. However, for notification year 2005, the ratio of deductible recoveries to total gross face value less disallowed costs on closed claims is based on an average of the ratios from 2000 through 2013 found on Reported Exhibit 27. In the prior years' report, the selected ratio for notification year 2005 was based on the ratio for notification year 2005 found on Reported Exhibit 27. This change has the effect of decreasing the selected ratio of deductible recoveries for notification year 2005, resulting in a decrease in the ultimate deductible recoveries. The effect of this change is shown in Reported Exhibit 4, Columns 4 and 5, which are used in management's selection of ultimate losses on Reported Exhibit 1.

Considerations

Revisions in federal law and the Ohio Administrative (OAC) and Revised (ORC) Codes as well as the Board's internal procedures affect the timing and amount of claim reimbursements. The following changes and assumptions are incorporated in previous reports and continue to affect the outcome of management's estimate:

- UST Performance Standards

In 1988, more stringent requirements were mandated for the design, installation, corrosion protection and release detection of petroleum USTs. All existing tanks were required to be upgraded by December 22, 1998. However, because owners were permitted to take their tanks out of service for up to one year prior to replacement or upgrading, management assumes that all tanks meet the new performance standards as of December 22, 1999.

Because the process of removing and replacing tanks leads to the discovery of more releases, the Fund experienced a large number of claims leading up to December 22, 1998. The number of releases versus the number of tanks decreased significantly after the upgrade deadline and management assumes that this reduced frequency will continue.

- Change in Procedures for Providing Notification (1996)

Prior to 1996, no restrictions existed with regards to notifying the Board of a release. Consequently, the Board may have not received notification of a release occurring in 1990 until several years later. However, effective in November 1996, a change to the OAC imposed a one-year time limit for notifying the Board of a discovered release. Releases required to be reported to the State Fire Marshal (SFM) prior to January 1, 1996 were now required to be reported to the Board on or before January 1, 1997. Releases occurring thereafter must be reported to the Board within one year from the date the release or suspected release, whichever is first, was required to be reported to the SFM. This change in reporting resulted in the unusually high number of claims reported to the Board during the 1996 notification year and the corresponding increase in gross face value.

- Change in Procedures for Submitting Costs (1999)

Prior to 1999, no restrictions were placed on the timing of cost submissions. Owners could submit costs at any point during investigation and remediation of the release or alternatively, wait until all corrective action was complete. However, a change to the OAC in 1999 required that all costs incurred for corrective action program tasks completed prior to July 1, 1999 and that were not previously submitted to the Board, be submitted by July 1, 2000. In addition, costs for program tasks that were completed after July 1, 2000 are required to be submitted within a year of the completion date defined within the OAC.

The immediate effect of this change was a significant increase in the amount of costs submitted in the 1999 notification year. Requiring timely submission of costs results in the acceleration of the reported gross face value when compared to costs submitted prior to this change.

- Change in Reimbursement of Non Pre-approved Costs

After the Board's staff reviews a reimbursement application, a settlement determination is issued to the owner. Settlements are generally determined as the gross face value less non-reimbursable and undocumented costs and an individual owner's deductible amount. Beginning in 1999, certain corrective action costs require pre-approval in order to be eligible for full reimbursement. Costs that were not pre-approved as required were subject to a 10% reduction in the amount of reimbursement. In 2003, this 10% reduction was increased to 20% and in April 2005, it was increased to 50%. Effective November 30, 2009, the Board amended its rule, OAC 3737-1-12.1, requiring the pre-approval of costs. As a result of this amendment, only costs exceeding the pre-approved amount by more than 20% or \$6,000, whichever is less, that are not pre-approved are subject to a 50% reduction in the amount of reimbursement.

Because the pre-approval process combined with the penalty for failure to obtain pre-approval when required provides incentive to use the most cost effective cleanup method, management believes mandatory cost pre-approval has the effect of reducing both gross face value and disallowed costs. Additionally, management believes the November 30, 2009 change to the OAC does not impact its estimate of ultimate losses.

- Introduction of Risk Based Corrective Action (RBCA) (1999)

In 1999, a new set of standards for corrective actions was introduced which impacted all releases occurring on or after March 31, 1999. A Risk-Based Corrective Action (RBCA) process was established, allowing for site specific cleanup remedies based on the anticipated future use of the site. Previous to that time, all corrective actions were held to generic standards without consideration of future site use. It was anticipated that the speed of the corrective action process would be accelerated and the overall cost of remediation would be reduced with the implementation of the RBCA process.

Responsible persons with claims, where the release date was before March 31, 1999 (regardless of the status of the corrective action), had the option to remediate their sites in compliance with either the original (non-RBCA) standards or the RBCA process. In loss reserve analyses prior to June 30, 2007, an adjustment was included to reflect the possible impact of the optional RBCA processing. However, beginning with the June 30, 2007 valuation, management assumes the impact from RBCA is imbedded within the data used to develop the estimates and as a result, an adjustment is not necessary.

- Mandatory Risk Based Corrective Action (RBCA) (2005)

Beginning in March 2005, existing clean ups being conducted under the 1992 or 1999 corrective action rules were required to transition to the 2005 RBCA rules by September 1, 2005 or March 1, 2006, respectively, unless approval to remain in an earlier version of the rule was sought from and granted by the SFM. Under the 2005 RBCA rules, the corrective action levels were lowered thereby increasing the amount of corrective action that must be performed to reach acceptable levels of contamination that may remain at the release site. In addition, the 2005 RBCA rules require additional testing and reporting. Consequently, the costs of corrective action are anticipated to increase for releases that were transitioned to or occurred after the implementation of the March 31, 2005 corrective action rules.

- State Fire Marshal's Corrective Action Rules (2012)

Beginning in March 2012, existing clean ups being conducted under the 1992, 1999, or 2005 corrective action rules were required to transition to the 2012 rules by October 1, 2012, unless approval to remain in an earlier version of the rule was sought from and granted by the SFM. For a limited number of releases transitioned from the 2005 to 2012 corrective action rules, the change will decrease the amount of corrective action that must be performed to reach acceptable levels of contamination that may remain at the release site. This, in turn, will reduce the costs to closure of corrective action for this limited number of releases. It is management's belief that costs for transitioning to the 2012 correction action rule do not significantly impact the Fund's liability.

- State Fire Marshal's Corrective Action Rules (2017)

Effective September 1, 2017, the SFM amended rule 1301:7-9-13 of the Administrative Code to include additional chemicals of concern (COCs). Unlike the 2005 and 2012 corrective action rules previously discussed, responsible persons are not required, but may elect, to conduct corrective actions for a release discovered before the effective date of the rule in accordance with the 2017 corrective action rule. Releases discovered on or after September 1, 2017 must be assessed and remediated under the 2017 corrective rule. Chemicals of concern that exceed site specific target levels must be cleaned up to acceptable levels. It is management's belief that any additional costs to test for and clean up these newly added COCs will not significantly impact the Fund's liability.

- Limitations on Annual Reimbursement Amounts

Prior to the 1997 notification year, no restrictions were placed on the amount of funds available to make reimbursements during an annual period. Effective with the 1997 notification year, changes to the OAC required the Board to annually obligate a set amount of funds for the payment of claims reimbursements. The amounts obligated by notification year were as follows:

Years	Annual Obligated Amount
1997 - 2000	\$15 Million
2001	\$12 Million
2002 – 2005	\$10 Million
2006 – 2009	\$9 Million
2010	\$8 Million
2011-2019	\$9 Million

- Change in Procedures for Processing and Prioritizing Claims Reimbursement

As a means to collectively settle costs submitted incrementally for reimbursement and to manage the backlog of claims created by the regulations requiring timely submission of corrective action costs for reimbursement, beginning in 2004 and continuing through the 2009 notification year, the Board offered lump sum settlements to three major oil companies for releases for which the SFM had issued a "No Further Action" (NFA) determination. A summary of those lump sum settlements follows:

Notification Year	Lump Sum Payments	Lump Sum Claims
2003	\$663,775	36*
2004	\$1,517,500	91
2005	\$912,000	23
2006	\$1,832,000	34
2008	\$1,820,000	30
2009	\$1,215,000	96

*In 2007, 24 claims were re-opened and additional costs continue to be submitted with a 25% reduction in the reimbursable costs as determined by the Board.

Until April 2005, applications for claim reimbursement were generally settled on a first-come, first-serve basis. Applications are submitted incrementally as corrective action program tasks are completed. A change to the OAC in 2005 permitted the prioritization of applications based on the NFA status. Consequently, when the SFM issues a determination of NFA, all in-house applications can be simultaneously reviewed and settled.

Both the lump sum settlements and the prioritizing of reimbursement applications according to the NFA status had the affect of accelerating the number of closed claims and the determination of disallowed costs and deductible values. The prioritization of claims also had the unintended effect of increasing the time to review claims for releases with ongoing investigation and remediation. In December 2011, the prioritization of applications based on NFA status was discontinued and all in-house unsettled claims are generally settled on a first-come, first-serve basis.

- Claims Lag

Due to the regulations requiring incremental and timely submission of corrective action costs for reimbursement and staffing limitations, the number of claim reimbursement applications received exceeded the number of claim reimbursement applications settled from the 1999 notification year to the 2010 notification year. This in turn delayed the determination of disallowed costs and the issuance of claim reimbursement payments, affecting the development factors. In notification years 2011 through 2017, the number of claim reimbursement applications settled outpaced the number of claim reimbursement applications received. In notification year 2018, the number of claim reimbursement applications received exceeded the number of claim reimbursement claims settled due to the retirement of key personnel. It is management's belief that as the replacement personnel gain experience, the number of claim reimbursement applications settled exceeding the claim reimbursement applications received will resume. The change does not significantly affect the development factors for the June 30, 2019 estimate.

- Ongoing Data Clean-Up

Beginning in 1999, the Board began a re-write of its database system. As part of this project, claims reimbursement data was migrated to the new system and data integrity checks were implemented. Over the past several years, the claims tracking data was reviewed and corrected where appropriate.

In the current reporting period, two claims which were previously under appeal and not included in the data in prior years, were added to the 2011 and 2014 notification year's data upon resolution of the appeal. It is management's belief that this change does not have a significant impact on its estimate of the Fund's ultimate losses

Although future changes in historical values are not currently anticipated, data corrections may nonetheless be required. However, any changes will continue to be very minimal.

- Claims Suspended Due to Pending Litigation

At its January 2015 meeting, the Board took action to suspend the settlement of any and all claim reimbursement applications filed by or on behalf of any responsible person against whom the Board has authorized the filing of a complaint in litigation. As of June 30, 2018, the Board has authorized the filing of four complaints and the settlement of claim applications for the reimbursement of costs related to 220 claims has been suspended. In the fiscal years 2018 and 2019, the Board retained an independent actuarial firm to assist management with determining the impact of this suspension on the Fund's loss reserves. Therefore, it is management's belief that the effect of this suspension on the Fund's loss reserves has been incorporated in the development of the potential claim liability for unpaid claims as of June 30, 2019.

Limitations / Caveats

The results of this analysis are management's estimates and are likely to change from one valuation period to the next. The changes are due not only to the uncertain nature of the claims reimbursement process, but also because the past is used to forecast the future, with the assumption that the conditions that existed in the past will continue.

Summary of Reserve Estimates

As of June 30, 2019

(A) Estimated Loss Reserves From Non-Held Claims Reported Prior to 7/1/19:	\$ 20,201,652
(B) Estimated Loss Reserves From Held Claims Reported Prior to 7/1/19:	19,883,000
(C) Estimated Loss Reserves From Non-Held Claims Reported or Approved After 7/1/19:	3,108,800
(D) Estimated Loss Reserves From Held Claims Reported or Approved After 7/1/19:	407,000
(E) Total Reserves (A) + (B) + (C) + (D):	\$ 43,600,452

Notes:

1. Row (A) is from Reported Exhibit 1, total column (3).
2. Row (B) is from Independent Actuarial Analysis, Exhibit 1, column (1), Actuarial Central Estimate less amount in Row (D).
3. Row (C) is from Unreported Exhibit 1, total column (6).
4. Row (D) is from Independent Actuarial Analysis, Exhibit 2, Actuarial Central, Rounded value of (Column 11 x Column 13, less Column 11 x Column 13 x Column 15, less Column 11 x Column 13 x Column 16)
5. For Row (B) the Independent Actuarial Analysis was based on payments for the Held Claims through April 30, 2019. There were no payments for the Held Claims for the period May 1, 2019 through June 30, 2019

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 1
Held Claims Removed

Summary of Losses and Reserves
As of 6/30/2019

Notification Year	Ultimate Loss	Paid Loss	Indicated Loss Reserves (1) - (2)	Open Claims	Loss Reserve Per Open Claim (3) / (4)
(1)	(2)	(3)	(4)	(5)	
1989	\$ 22,040	\$ 22,040	\$ -	0	\$ -
1990	29,529,800	29,291,826	237,974	21	11,332
1991	48,574,200	47,825,304	748,896	30	24,963
1992	26,603,800	25,900,791	703,009	15	46,867
1993	22,274,000	21,731,255	542,745	13	41,750
1994	15,661,500	15,123,238	538,262	20	26,913
1995	18,239,300	17,971,340	267,960	15	17,864
1996	27,665,500	26,312,808	1,352,692	24	56,362
1997	7,972,500	7,410,849	561,651	7	80,236
1998	10,041,900	9,503,302	538,598	35	15,389
1999	6,944,500	5,904,871	1,039,629	17	61,155
2000	2,645,600	2,475,445	170,155	3	56,718
2001	1,739,100	1,540,889	198,211	2	99,106
2002	1,940,300	1,671,724	268,576	5	53,715
2003	1,343,100	1,091,683	251,417	5	50,283
2004	1,125,800	956,461	169,339	4	42,335
2005	2,869,600	2,608,553	261,047	11	23,732
2006	3,395,200	2,656,868	738,332	8	92,292
2007	3,471,800	2,772,049	699,751	12	58,313
2008	4,148,400	3,474,513	673,887	19	35,468
2009	4,412,400	3,766,353	646,047	23	28,089
2010	2,213,400	2,144,193	69,207	12	5,767
2011	1,961,300	1,301,504	659,796	14	47,128
2012	3,044,500	1,788,235	1,256,265	25	50,251
2013	2,629,000	1,479,697	1,149,303	18	63,850
2014	4,236,000	2,829,017	1,406,983	34	41,382
2015	2,449,500	1,309,409	1,140,091	18	63,338
2016	2,605,700	1,082,503	1,523,197	26	58,585
2017	1,640,300	101,068	1,539,232	33	46,643
2018	849,400	-	849,400	20	42,470
Total	\$ 262,249,440	\$ 242,047,788	\$ 20,201,652	489	\$ 41,312.17

1. Column (1) is from Reported Exhibit 4, column (7).
2. Column (2) is Actual Paid Loss as of June 30, 2019.
3. Column (4) is from Reported Exhibit 28, Column (2)

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 2

Estimated Ultimate Average Loss
As of 06/30/2019

Notification Year	Ultimate Loss (1)	Ultimate Claims (2)	Ultimate Average Loss (1) / (2) (3)	Change in Ultimate Average Loss (4)	Percentage Change (4) / Prior (3) (5)
1989	\$ 22,040	1	\$ 22,040		
1990	29,529,800	323	91,424	69,384	314.807
1991	48,574,200	623	77,968	-13,455	-14.718
1992	26,603,800	348	76,448	-1,521	-1.950
1993	22,274,000	352	63,278	-13,169	-17.227
1994	15,661,500	276	56,745	-6,534	-10.326
1995	18,239,300	274	66,567	9,822	17.310
1996	27,665,500	445	62,170	-4,397	-6.606
1997	7,972,500	158	50,459	-11,711	-18.837
1998	10,041,900	211	47,592	-2,867	-5.682
1999	6,944,500	104	66,774	19,182	40.305
2000	2,645,600	64	41,338	-25,437	-38.093
2001	1,739,100	34	51,150	9,813	23.738
2002	1,940,300	45	43,118	-8,032	-15.703
2003	1,343,100	53	25,342	-17,776	-41.227
2004	1,125,800	40	28,145	2,803	11.063
2005	2,869,600	60	47,827	19,682	69.930
2006	3,395,200	61	55,659	7,832	16.377
2007	3,471,800	69	50,316	-5,343	-9.600
2008	4,148,400	73	56,827	6,511	12.941
2009	4,412,400	77	57,304	476	0.839
2010	2,213,400	34	65,100	7,796	13.605
2011	1,961,300	47	41,730	-23,370	-35.899
2012	3,044,500	68	44,772	3,042	7.290
2013	2,629,000	49	53,653	8,881	19.836
2014	4,236,000	68	62,294	8,641	16.105
2015	2,449,500	43	56,965	-5,329	-8.555
2016	2,605,700	44	59,220	2,255	3.959
2017	1,640,300	38	43,166	-16,055	-27.110
2018	849,400	20	42,470	-696	-1.612
Total	\$ 262,249,440	4,102			
Exponential Fit:					
Trend (%)			-0.508		
Intercept			\$ 55,538		
R Squared			0.021		

Notes:

1. Column (1) is from Reported Exhibit 4, column (7).
2. Column (2) is from Reported Exhibit 28, column (5).

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 3

Ratio of Ultimate Loss to Ultimate Gross Face Value
As of 06/30/2019

Notification Year	Ultimate Loss	Ultimate Gross Face Value	Ratio (1) / (2)
_____	_____ (1)	_____ (2)	_____ (3)
1989	\$ 22,040	\$ 38,000	0.580
1990	29,529,800	47,444,000	0.622
1991	48,574,200	78,509,000	0.619
1992	26,603,800	44,160,000	0.602
1993	22,274,000	38,357,000	0.581
1994	15,661,500	28,918,000	0.542
1995	18,239,300	32,003,000	0.570
1996	27,665,500	48,161,000	0.574
1997	7,972,500	12,949,000	0.616
1998	10,041,900	19,180,000	0.524
1999	6,944,500	11,637,000	0.597
2000	2,645,600	5,245,000	0.504
2001	1,739,100	4,590,000	0.379
2002	1,940,300	4,587,000	0.423
2003	1,343,100	3,863,000	0.348
2004	1,125,800	3,443,000	0.327
2005	2,869,600	7,009,000	0.409
2006	3,395,200	8,308,000	0.409
2007	3,471,800	7,942,000	0.437
2008	4,148,400	10,574,000	0.392
2009	4,412,400	10,912,000	0.404
2010	2,213,400	4,777,000	0.463
2011	1,961,300	5,305,000	0.370
2012	3,044,500	8,174,000	0.372
2013	2,629,000	7,013,000	0.375
2014	4,236,000	10,158,000	0.417
2015	2,449,500	6,289,000	0.389
2016	2,605,700	6,758,000	0.386
2017	1,640,300	5,240,000	0.313
2018	849,400	2,709,000	0.314
Total	\$262,249,440	\$484,252,000	0.542

Notes:

1. Column (1) is from Reported Exhibit 4, column (7).
2. Column (2) is from Reported Exhibit 16, column (4).

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 4

Comparison of Ultimate Loss Estimates
As of 06/30/2019

Notification Year	Paid Loss Development	Average Loss	Bornhuetter-Ferguson Using Average Loss and Paid Loss	Ultimate Loss Based on Ultimate Face Value Less Disallowed Costs Less Deductible Recoveries	Bornhuetter-Ferguson Using Gross Face Value and Paid Loss	Straight Average	Ultimate Loss
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1989	\$ 22,260	\$ 22,300	\$ 22,261	\$ 22,327	\$ 22,261	\$ 22,282	\$ 22,040
1990	29,869,197	29,393,000	29,859,352	29,204,107	29,855,447	29,636,221	29,529,800
1991	49,377,219	47,971,000	49,333,164	47,819,989	49,328,433	48,765,961	48,574,200
1992	26,961,231	26,448,000	26,941,036	26,273,434	26,934,167	26,711,574	26,603,800
1993	22,806,273	21,824,000	22,759,337	21,790,190	22,757,721	22,387,504	22,274,000
1994	16,049,706	15,456,000	16,016,082	15,314,973	16,008,095	15,768,971	15,661,500
1995	19,302,543	18,084,000	19,219,058	17,312,343	19,166,189	18,616,827	18,239,300
1996	28,704,439	27,590,000	28,612,863	26,784,259	28,546,653	28,047,643	27,665,500
1997	8,180,506	7,900,000	8,154,293	7,800,011	8,144,950	8,035,952	7,972,500
1998	10,655,279	9,706,000	10,553,434	9,547,363	10,536,414	10,199,698	10,041,900
1999	6,741,446	6,656,000	6,731,070	7,103,644	6,785,427	6,803,517	6,944,500
2000	2,935,807	2,560,000	2,879,865	2,430,638	2,860,609	2,733,384	2,645,600
2001	1,857,014	1,700,000	1,830,069	1,655,705	1,822,468	1,773,051	1,739,100
2002	2,123,244	1,980,000	2,092,768	1,821,511	2,059,048	2,015,314	1,940,300
2003	1,499,993	1,325,000	1,452,599	1,253,134	1,433,136	1,392,772	1,343,100
2004	1,379,007	1,080,000	1,288,359	990,345	1,261,178	1,199,778	1,125,800
2005	3,888,627	2,460,000	3,422,309	2,352,080	3,387,083	3,102,020	2,869,600
2006	4,106,412	3,294,000	3,821,625	3,053,190	3,737,210	3,602,487	3,395,200
2007	4,581,946	3,381,000	4,107,722	2,990,163	3,953,390	3,802,844	3,471,800
2008	6,199,909	3,723,000	5,134,726	3,330,810	4,966,067	4,670,902	4,148,400
2009	7,204,506	4,004,000	5,660,797	3,437,280	5,387,450	5,138,807	4,412,400
2010	4,685,506	1,904,000	3,143,382	1,504,755	2,922,033	2,831,935	2,213,400
2011	3,210,078	2,397,000	2,703,661	1,671,075	2,251,526	2,446,668	1,961,300
2012	5,347,250	3,332,000	4,014,868	2,574,810	3,514,252	3,756,636	3,044,500
2013	5,043,080	2,450,000	3,218,424	2,209,095	3,048,907	3,193,901	2,629,000
2014	11,502,623	3,400,000	5,422,534	3,199,770	5,272,284	5,759,442	4,236,000
2015	6,753,599	2,193,000	3,088,227	1,981,035	2,917,870	3,386,746	2,449,500
2016	9,328,836	2,200,000	3,144,499	2,128,770	3,082,706	3,976,962	2,605,700
2017	1,329,327	1,900,000	1,863,324	1,650,600	1,629,953	1,674,641	1,640,300
2018	-	1,000,000	990,849	853,335	845,526	737,942	849,400
Total	\$301,646,863	\$257,333,300	\$277,482,557	\$250,060,741	\$274,438,453	\$272,192,382	\$262,249,440

Notes:

1. Column (1) is from Reported Exhibit 5, column (4).
2. Column (2) is from Reported Exhibit 8, column (3).
3. Column (3) is from Reported Exhibit 9, column (10).
4. Column (4) is from Reported Exhibit 12, column (4).
5. Column (5) is from Reported Exhibit 13, column (10).
6. Selected ultimate loss in column (7) is based on a rounded average of columns (4) and (5) for notification years 1990 - 2018. For notification year 1989 the actual paid loss was used.

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 5

Ultimate Loss Based on Paid Loss Development
As of 06/30/2019

Notification Year	Cumulative Paid Loss	Selected Development Factors	Cumulative Development Factors	Ultimate Loss (1) x (3)
	(1)	(2)	(3)	(4)
1989	\$ 22,040	1.010	1.010	\$ 22,260
1990	29,251,694	1.011	1.021	29,869,197
1991	47,830,282	1.011	1.032	49,377,219
1992	25,900,372	1.008	1.041	26,961,231
1993	21,716,510	1.009	1.050	22,806,273
1994	15,140,748	1.009	1.060	16,049,706
1995	17,980,076	1.013	1.074	19,302,543
1996	26,345,726	1.015	1.090	28,704,439
1997	7,416,058	1.012	1.103	8,180,506
1998	9,512,106	1.016	1.120	10,655,279
1999	5,922,843	1.016	1.138	6,741,446
2000	2,498,789	1.032	1.175	2,935,807
2001	1,538,331	1.027	1.207	1,857,014
2002	1,671,509	1.052	1.270	2,123,244
2003	1,093,750	1.080	1.371	1,499,993
2004	960,939	1.046	1.435	1,379,007
2005	2,619,340	1.035	1.485	3,888,627
2006	2,666,926	1.037	1.540	4,106,412
2007	2,772,648	1.073	1.653	4,581,946
2008	3,533,667	1.062	1.755	6,199,909
2009	3,729,538	1.101	1.932	7,204,506
2010	2,087,766	1.162	2.244	4,685,506
2011	1,210,715	1.181	2.651	3,210,078
2012	1,811,917	1.113	2.951	5,347,250
2013	1,494,447	1.143	3.375	5,043,080
2014	2,871,224	1.187	4.006	11,502,623
2015	1,325,704	1.272	5.094	6,753,599
2016	1,235,977	1.482	7.548	9,328,836
2017	85,432	2.062	15.560	1,329,327
2018	-	7.023	109.273	-
Total	\$242,247,074			\$301,646,863

Notes:

1. Paid loss in column (1) is estimated using values available at April 30, 2019.
2. Development factors in columns (2) and (3) are selected in Reported Exhibit 7.

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 6

Paid Loss
As of 06/30/2019

Notification Year	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360
1989	0	0	12,000	10,040	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	12,581	4,579,384	2,292,209	3,016,367	1,986,216	1,987,037	1,726,236	1,251,497	935,901	1,130,383	998,129	1,340,440	896,642	605,459	1,139,992	1,070,421	453,657	838,545	354,919	480,532	313,306	244,357	184,622	373,438	154,964	309,220	281,009	202,880	91,349	0
1991	1,489,080	2,269,827	3,910,887	3,726,186	3,995,865	4,414,741	4,091,423	2,542,295	2,040,694	2,055,067	1,650,284	1,943,494	1,460,518	1,700,451	1,761,191	1,639,565	455,341	1,244,550	834,272	600,381	547,600	258,416	255,757	652,051	792,245	494,682	568,992	434,626	0	
1992	245,967	2,065,236	2,769,858	3,338,737	2,154,469	1,896,197	1,320,402	891,869	891,611	1,061,006	559,977	1,303,570	714,110	1,259,312	691,444	814,645	1,000,206	198,111	585,795	168,995	493,255	142,574	273,318	135,661	141,000	115,053	47,934	0	0	
1993	162,107	1,573,898	1,453,998	1,886,065	1,942,300	935,737	972,862	1,890,742	743,008	1,261,592	785,567	938,927	705,173	1,395,179	525,248	574,699	683,680	344,800	579,498	233,966	299,536	424,065	316,673	373,054	446,478	267,636	0	0	0	
1994	20,241	1,439,526	1,834,364	1,144,667	1,293,737	662,192	766,610	758,774	696,533	549,255	714,856	709,891	640,587	516,700	697,660	293,147	454,551	380,113	139,870	300,505	255,992	170,972	154,814	410,452	135,042	0	0	0	0	
1995	232,842	1,248,543	1,870,339	1,524,669	1,235,166	1,093,087	854,490	833,639	840,187	1,026,492	728,594	757,511	330,406	644,878	535,950	182,885	750,722	471,449	843,653	685,909	506,348	403,927	219,624	158,467	0	0	0	0	0	
1996	595,657	1,822,967	2,202,874	2,099,868	1,950,242	1,563,698	1,245,057	1,229,562	1,835,393	1,523,620	1,258,080	1,067,963	1,406,599	982,901	758,271	806,176	1,320,577	869,714	657,246	536,384	204,149	199,290	209,438	0	0	0	0	0	0	
1997	149,129	913,347	1,148,545	355,049	510,358	434,607	407,805	321,715	317,449	180,315	342,832	419,408	247,475	271,272	178,729	283,178	206,721	336,348	162,910	127,787	59,828	31,250	0	0	0	0	0	0	0	
1998	65,987	1,081,129	554,853	604,679	456,741	427,526	464,726	203,843	597,547	500,387	687,571	414,646	222,901	201,585	366,008	308,302	563,574	527,182	294,776	485,022	483,121	0	0	0	0	0	0	0	0	0
1999	105,513	897,046	960,160	483,419	533,123	276,232	239,061	322,396	186,755	133,177	222,492	100,256	188,080	217,946	106,251	162,539	324,067	164,939	133,291	166,099	0	0	0	0	0	0	0	0	0	0
2000	0	124,387	462,400	203,524	47,193	357,138	35,986	123,267	54,951	178,356	43,044	58,400	27,325	88,804	42,960	133,543	250,295	127,154	140,063	0	0	0	0	0	0	0	0	0	0	0
2001	0	46,067	63,586	214,574	72,783	28,424	200,703	86,773	114,038	116,800	63,454	36,749	72,337	73,808	48,596	135,777	108,354	55,507	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	19,855	265,426	61,378	92,214	10,232	13,789	365,052	83,197	251,892	175,354	97,219	71,753	83,144	77,908	18,574	4,525	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	78,191	52,753	73,276	62,170	62,115	164,703	177,146	173,252	26,673	99,948	67,182	11,068	8,324	24,547	12,403	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	2,796	18,341	151,879	156,366	80,890	64,383	58,125	224,135	9,332	31,178	35,701	7,264	68,700	24,978	26,873	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	214,346	278,048	269,946	53,212	216,329	49,674	326,639	127,866	316,330	178,630	211,685	255,502	121,128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	13,674	88,961	239,996	391,578	160,465	161,876	157,601	282,939	531,422	214,428	258,786	104,848	60,352	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	19,955	65,102	322,885	117,950	470,926	223,422	278,592	374,576	283,774	295,291	268,565	53,610	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	41,447	295,182	310,205	155,831	311,977	555,210	448,132	433,399	512,060	470,225	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	930,963	220,014	659,878	163,164	366,990	374,883	441,674	319,446	252,525	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	151,463	143,072	362,574	514,228	267,573	354,917	166,783	127,156	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	565	633,515	90,118	116,474	142,635	168,905	58,503	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	20,225	464,723	98,262	590,942	372,656	265,109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	267,838	390,887	318,408	290,593	226,722	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	9,968	535,145	729,731	967,018	629,362	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	10,951	282,782	836,768	195,204	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	260,567	975,410	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	10,651	74,781	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: Paid loss is estimated using values available at April 30, 2019.

Cumulative Paid Loss
As of 06/30/2019

Notification Year	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360
1989	0	0	12,000	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040
1990	12,581	4,591,965	6,894,174	9,900,541	11,886,757	13,673,795	15,600,031	16,851,528	17,787,429	18,917,811	19,915,940	21,256,380	22,153,022	22,758,481	23,898,473	24,968,894	25,422,551	26,261,096	26,816,015	27,096,547	27,409,853	27,854,211	27,838,833	28,212,271	28,367,235	28,676,455	28,957,465	29,160,345	29,251,694	
1991	1,489,080	3,758,907	7,669,594	11,395,780	15,391,645	19,806,586	23,897,809	26,440,104	28,480,798	30,535,865	32,188,149	34,129,843	35,590,161	37,290,613	39,051,804	40,891,368	41,146,709	42,391,260	43,225,532	43,825,913	44,373,513	44,631,929	44,887,686	45,539,737	46,331,983	46,826,664	47,396,656	47,830,282	0	
1992	245,967	2,311,203	5,081,061	9,019,798	11,174,266	13,070,463	14,390,865	15,282,734	16,174,345	17,255,351	17,815,328	19,118,898	19,833,008	21,092,320	21,783,764	22,598,409	23,598,615	23,796,726	24,382,522	24,551,516	25,044,771	25,187,345	25,460,663	25,596,325	25,737,385	25,852,438	25,900,372	0	0	
1993	162,107	1,736,005	3,190,003	5,076,068	7,018,368	7,954,106	8,926,988	10,817,730	11,560,738	12,822,330	13,607,898	14,546,825	15,251,998	16,647,176	17,172,424	17,747,123	18,430,803	18,775,604	19,355,101	19,589,067	19,888,604	20,312,669	20,629,342	21,002,396	21,448,874	21,716,510	0	0	0	
1994	20,241	1,459,766	3,294,131	4,438,798	5,732,534	6,394,727	7,161,336	7,920,110	8,616,644	9,165,899	9,880,754	10,590,345	11,230,933	11,747,632	12,445,292	12,738,439	13,192,990	13,573,102	13,712,972	14,013,477	14,269,489	14,440,441	14,595,254	15,162,149	15,605,801	16,691,710	17,198,058	17,601,985	17,821,609	17,980,076
1995	232,842	1,481,385	3,351,725	4,876,394	6,111,560	7,204,647	8,059,138	8,892,776	9,732,963	10,759,455	11,488,049	12,245,859	12,576,265	13,221,143	13,757,083	13,939,978	14,690,700	15,162,149	16,005,801	16,691,710	17,198,058	17,601,985	17,821,609	17,980,076	0	0	0	0	0	0
1996	595,657	2,418,624	4,621,498	6,721,366	8,671,608	10,235,306	11,480,363	12,709,925	14,945,318	16,068,639	17,327,018	18,394,981	19,801,590																	

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 7

Paid Loss Development
As of 06/30/2019

Notification Year	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-Ult
1989	0.000	0.000	1.837	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1990	364.994	1.499	1.438	1.201	1.167	1.124	1.080	1.056	1.064	1.053	1.067	1.042	1.027	1.050	1.045	1.018	1.033	1.014	1.018	1.012	1.009	1.007	1.013	1.005	1.011	1.010	1.007	1.003		
1991	2.524	2.040	1.486	1.351	1.287	1.207	1.106	1.077	1.072	1.054	1.060	1.043	1.048	1.047	1.042	1.011	1.030	1.020	1.014	1.012	1.006	1.006	1.015	1.017	1.011	1.012	1.009			
1992	9.396	2.198	1.775	1.239	1.170	1.101	1.062	1.058	1.067	1.032	1.073	1.037	1.063	1.033	1.037	1.044	1.008	1.025	1.007	1.020	1.006	1.011	1.005	1.006	1.004	1.002				
1993	10.709	1.838	1.591	1.383	1.133	1.122	1.212	1.069	1.109	1.061	1.069	1.048	1.091	1.032	1.033	1.039	1.019	1.031	1.012	1.015	1.021	1.016	1.018	1.021	1.012					
1994	72.120	2.257	1.347	1.291	1.116	1.120	1.106	1.088	1.064	1.078	1.072	1.060	1.046	1.059	1.024	1.036	1.029	1.010	1.022	1.018	1.012	1.011	1.028	1.009						
1995	6.362	2.263	1.455	1.253	1.179	1.119	1.103	1.094	1.105	1.068	1.066	1.027	1.051	1.041	1.013	1.054	1.032	1.056	1.043	1.030	1.023	1.012	1.009							
1996	4.060	1.911	1.454	1.290	1.180	1.122	1.107	1.144	1.105	1.078	1.062	1.076	1.050	1.036	1.037	1.059	1.037	1.027	1.021	1.008	1.008									
1997	7.125	2.081	1.165	1.198	1.141	1.116	1.082	1.075	1.039	1.072	1.082	1.045	1.047	1.030	1.046	1.032	1.050	1.023	1.018	1.008	1.004									
1998	17.384	1.484	1.355	1.198	1.155	1.146	1.056	1.155	1.112	1.139	1.073	1.037	1.032	1.056	1.045	1.079	1.068	1.036	1.057	1.054										
1999	9.502	1.958	1.246	1.218	1.093	1.073	1.092	1.049	1.033	1.054	1.023	1.042	1.047	1.022	1.033	1.063	1.030	1.024	1.029											
2000	0.000	4.717	1.347	1.060	1.426	1.030	1.100	1.041	1.127	1.027	1.036	1.016	1.052	1.024	1.072	1.126	1.057	1.059												
2001	0.000	2.380	2.957	1.224	1.072	1.472	1.139	1.160	1.141	1.067	1.036	1.069	1.066	1.041	1.110	1.079	1.037													
2002	0.000	14.368	1.215	1.266	1.023	1.031	1.789	1.100	1.276	1.151	1.073	1.050	1.042	1.050	1.011	1.003														
2003	0.000	1.675	1.560	1.304	1.233	1.501	1.359	1.258	1.032	1.115	1.069	1.011	1.008	1.023	1.011															
2004	7.560	8.186	1.904	1.246	1.157	1.122	1.421	1.012	1.041	1.045	1.009	1.082	1.027	1.029																
2005	0.000	2.297	1.548	1.070	1.265	1.048	1.302	1.091	1.206	1.096	1.104	1.114	1.048																	
2006	7.506	3.338	2.143	1.219	1.181	1.149	1.233	1.355	1.106	1.115	1.042	1.023																		
2007	4.162	4.895	1.291	1.899	1.225	1.229	1.250	1.152	1.137	1.110	1.020																			
2008	0.000	8.122	1.922	1.241	1.389	1.498	1.268	1.205	1.201	1.153																				
2009	0.000	1.236	1.573	1.090	1.186	1.160	1.163	1.101	1.073																					
2010	0.000	1.945	2.231	1.783	1.228	1.247	1.093	1.065																						
2011	0.000	1,122.523	1.142	1.161	1.170	1.172	1.051																							
2012	0.000	23.978	1.203	2.013	1.317	1.171																								
2013	0.000	2.459	1.483	1.297	1.179																									
2014	54.685	2.339	1.759	1.281																										
2015	26.823	3.849	1.173																											
2016	0.000	4.743																												
2017	8.021																													
Average	38.308	45.651	1.578	1.299	1.187	1.170	1.181	1.109	1.100	1.078	1.055	1.046	1.044	1.036	1.037	1.046	1.033	1.027	1.022	1.018	1.010	1.009	1.013	1.010	1.008	1.006	1.005	1.002	1.000	
3 Year Average	17.422	3.644	1.472	1.530	1.222	1.197	1.102	1.124	1.137	1.126	1.055	1.073	1.028	1.034	1.044	1.069	1.042	1.040	1.034	1.023	1.012	1.010	1.018	1.012	1.009	1.008	1.005	1.002	1.000	
Volume Weighted Average	7.023	2.056	1.480	1.278	1.189	1.145	1.116	1.089	1.085	1.066	1.064	1.047	1.050	1.042	1.037	1.037	1.030	1.025	1.020	1.017	1.010	1.009	1.014	1.012	1.010	1.009	1.008	1.003	1.000	
7 Year Volume Weighted Average Excluding Last 1 Years	40.100	3.501	1.555	1.339	1.242	1.232	1.205	1.158	1.141	1.108	1.060	1.061	1.044	1.039	1.046	1.062	1.041	1.030	1.026	1.017	1.011	1.009	1.015	1.013	1.009	1.011	1.007	1.000		
5 Year Volume Weighted Average	29.277	3.449	1.399	1.413	1.214	1.232	1.169	1.160	1.135	1.116	1.049	1.057	1.041	1.034	1.043	1.072	1.051	1.029	1.032	1.021	1.015	1.011	1.014	1.010	1.009	1.008	1.003	1.000		
3 Year Volume Weighted Average	17.552	3.312	1.483	1.397	1.226	1.199	1.118	1.122	1.130	1.129	1.051	1.068	1.035	1.036	1.042	1.072	1.038	1.035	1.036	1.018	1.013	1.010	1.018	1.012	1.009	1.009	1.008	1.003	1.000	
5 Year Volume Weighted Average Excluding Last 1 Years	40.100	3.149	1.483	1.514	1.223	1.247	1.186	1.181	1.162	1.101	1.062	1.073	1.037	1.035	1.046	1.080	1.052	1.027	1.032	1.016	1.016	1.012	1.015	1.013	1.009	1.011	1.007	1.000		
Volume Weighted Average Excluding High/Low	8.357	2.062	1.482	1.272	1.187	1.143	1.113	1.086	1.084	1.064	1.064	1.046	1.046	1.040	1.037	1.036	1.029	1.025	1.018	1.015	1.009	1.008	1.012	1.011	1.009	1.006	1.007			
5 Year Volume Weighted Average Excluding High/Low	26.823	3.680	1.269	1.370	1.195	1.199	1.164	1.145	1.152	1.108	1.036	1.041	1.043	1.030	1.039	1.073	1.050	1.028	1.030	1.022	1.013	1.011	1.014	1.012	1.009	1.006	1.007			
Inverse Power Curve	5.776	2.358	1.651	1.386	1.258	1.185	1.140	1.110	1.089	1.073	1.062	1.053	1.046	1.040	1.035	1.031	1.028	1.025	1.023	1.021	1.019	1.018	1.016	1.015	1.014	1.013	1.011	1.011	1.011	1.082
Selected	<u>7.023</u>	<u>2.062</u>	<u>1.482</u>	<u>1.272</u>	<u>1.187</u>	<u>1.143</u>	<u>1.113</u>	<u>1.181</u>	<u>1.162</u>	<u>1.101</u>	<u>1.062</u>	<u>1.073</u>	<u>1.037</u>	<u>1.035</u>	<u>1.046</u>	<u>1.080</u>	<u>1.052</u>	<u>1.025</u>	<u>1.032</u>	<u>1.016</u>	<u>1.016</u>	<u>1.012</u>	<u>1.015</u>	<u>1.013</u>	<u>1.009</u>	<u>1.009</u>	<u>1.008</u>	<u>1.011</u>	<u>1.011</u>	<u>1.010</u>
Cumulative	109.273	15.560	7.548	5.094	4.006	3.375	2.951	2.651	2.244	1.932	1.755	1.653	1.540	1.485	1.435	1.371	1.270	1.207	1.175	1.138	1.120	1.103	1.090	1.074	1.060	1.050	1.041	1.032	1.021	1.010
Ratio to Ultimate	0.009	0.064	0.132	0.196	0.250	0.296	0.339	0.377	0.446	0.518	0.570	0.605	0.649	0.674	0.697	0.729	0.787	0.828	0.851	0.879	0.883	0.907	0.918	0.931	0.943	0.952	0.961	0.969	0.979	0.990

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 8

Ultimate Loss Based on Average Loss
As of 06/30/2019

Notification Year	Ultimate Claims	Selected Average Loss	Ultimate Loss (1) x (2)
_____	(1)	(2)	(3)
1989	1	22,300	\$ 22,300
1990	323	91,000	29,393,000
1991	623	77,000	47,971,000
1992	348	76,000	26,448,000
1993	352	62,000	21,824,000
1994	276	56,000	15,456,000
1995	274	66,000	18,084,000
1996	445	62,000	27,590,000
1997	158	50,000	7,900,000
1998	211	46,000	9,706,000
1999	104	64,000	6,656,000
2000	64	40,000	2,560,000
2001	34	50,000	1,700,000
2002	45	44,000	1,980,000
2003	53	25,000	1,325,000
2004	40	27,000	1,080,000
2005	60	41,000	2,460,000
2006	61	54,000	3,294,000
2007	69	49,000	3,381,000
2008	73	51,000	3,723,000
2009	77	52,000	4,004,000
2010	34	56,000	1,904,000
2011	47	51,000	2,397,000
2012	68	49,000	3,332,000
2013	49	50,000	2,450,000
2014	68	50,000	3,400,000
2015	43	51,000	2,193,000
2016	44	50,000	2,200,000
2017	38	50,000	1,900,000
2018	20	50,000	1,000,000
Total	4,102		\$ 257,333,300

Notes:

1. Column (1) is from Reported Exhibit 28, column (5).
2. Selected average loss in column (2) is from Reported Exhibit 10, column (4).

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 9

Ultimate Loss Based on Bornhuetter-Ferguson Using Average Loss and Paid Loss
As of 06/30/2019

Notification Year	Ultimate Claims	Selected Average Loss	Expected Ultimate Loss (1) x (2)	Selected Development Factors	Cumulative Development Factors	Ratio of Cumulative Paid Loss to Ultimate Loss 1 / (5)	Ratio of Undeveloped Paid Loss to Ultimate Loss Face Value 1 - (6)	Undeveloped Paid Loss (3) x (7)	Cumulative Paid Loss	Ultimate Loss (8) + (9)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1989	1	\$ 22,300	\$ 22,300	1.010	1.010	0.990	0.010	\$ 221	\$ 22,040	\$ 22,261
1990	323	91,000	29,393,000	1.011	1.021	0.979	0.021	607,659	29,251,694	29,859,352
1991	623	77,000	47,971,000	1.011	1.032	0.969	0.031	1,502,882	47,830,282	49,333,164
1992	348	76,000	26,448,000	1.008	1.041	0.961	0.039	1,040,665	25,900,372	26,941,036
1993	352	62,000	21,824,000	1.009	1.050	0.952	0.048	1,042,826	21,716,510	22,759,337
1994	276	56,000	15,456,000	1.009	1.060	0.943	0.057	875,334	15,140,748	16,016,082
1995	274	66,000	18,084,000	1.013	1.074	0.931	0.069	1,238,981	17,980,076	19,219,058
1996	445	62,000	27,590,000	1.015	1.090	0.918	0.082	2,267,136	26,345,726	28,612,863
1997	158	50,000	7,900,000	1.012	1.103	0.907	0.093	738,236	7,416,058	8,154,293
1998	211	46,000	9,706,000	1.016	1.120	0.893	0.107	1,041,328	9,512,106	10,553,434
1999	104	64,000	6,656,000	1.016	1.138	0.879	0.121	808,227	5,922,843	6,731,070
2000	64	40,000	2,560,000	1.032	1.175	0.851	0.149	381,076	2,498,789	2,879,865
2001	34	50,000	1,700,000	1.027	1.207	0.828	0.172	291,738	1,538,331	1,830,069
2002	45	44,000	1,980,000	1.052	1.270	0.787	0.213	421,259	1,671,509	2,092,768
2003	53	25,000	1,325,000	1.080	1.371	0.729	0.271	358,850	1,093,750	1,452,599
2004	40	27,000	1,080,000	1.046	1.435	0.697	0.303	327,419	960,939	1,288,359
2005	60	41,000	2,460,000	1.035	1.485	0.674	0.326	802,969	2,619,340	3,422,309
2006	61	54,000	3,294,000	1.037	1.540	0.649	0.351	1,154,698	2,666,926	3,821,625
2007	69	49,000	3,381,000	1.073	1.653	0.605	0.395	1,335,074	2,772,648	4,107,722
2008	73	51,000	3,723,000	1.062	1.755	0.570	0.430	1,601,059	3,533,667	5,134,726
2009	77	52,000	4,004,000	1.101	1.932	0.518	0.482	1,931,260	3,729,538	5,660,797
2010	34	56,000	1,904,000	1.162	2.244	0.446	0.554	1,055,617	2,087,766	3,143,382
2011	47	51,000	2,397,000	1.181	2.651	0.377	0.623	1,492,946	1,210,715	2,703,661
2012	68	49,000	3,332,000	1.113	2.951	0.339	0.661	2,202,951	1,811,917	4,014,868
2013	49	50,000	2,450,000	1.143	3.375	0.296	0.704	1,723,976	1,494,447	3,218,424
2014	68	50,000	3,400,000	1.187	4.006	0.250	0.750	2,551,310	2,871,224	5,422,534
2015	43	51,000	2,193,000	1.272	5.094	0.196	0.804	1,762,523	1,325,704	3,088,227
2016	44	50,000	2,200,000	1.482	7.548	0.132	0.868	1,908,522	1,235,977	3,144,499
2017	38	50,000	1,900,000	2.062	15.560	0.064	0.936	1,777,892	85,432	1,863,324
2018	20	50,000	1,000,000	7.023	109.273	0.009	0.991	990,849	-	990,849
Total	4,102		\$257,333,300					\$ 35,235,483	\$242,247,074	\$ 277,482,557

Notes:

1. Column (1) is from Reported Exhibit 28, column (5).
2. Selected average loss in column (2) is from Reported Exhibit 10, column (4).
3. Development factors in columns (4) and (5) are selected in Reported Exhibit 7.
4. Cumulative Paid Loss in column (9) is estimated using values available at April 30, 2019.

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 10

Preliminary Average Loss Based on Prior Year Estimated Ultimate Loss
As of 06/30/2019

Notification Year	Ultimate Loss Prior Year	Ultimate Claims	Preliminary Average Loss (1) / (2)	Selected Average Loss
	(1)	(2)	(3)	(4)
1989	22,300	1	22,300	22,300
1990	29,380,600	323	90,962	91,000
1991	48,051,600	623	77,129	77,000
1992	26,479,300	348	76,090	76,000
1993	21,712,400	352	61,683	62,000
1994	15,570,000	276	56,413	56,000
1995	17,981,400	274	65,626	66,000
1996	27,467,600	445	61,725	62,000
1997	7,934,100	158	50,216	50,000
1998	9,649,500	211	45,732	46,000
1999	6,618,900	104	63,643	64,000
2000	2,539,700	64	39,683	40,000
2001	1,707,300	34	50,215	50,000
2002	1,974,500	45	43,878	44,000
2003	1,345,900	53	25,394	25,000
2004	1,099,400	40	27,485	27,000
2005	2,436,500	60	40,608	41,000
2006	3,314,000	61	54,328	54,000
2007	3,358,000	69	48,667	49,000
2008	3,720,400	73	50,964	51,000
2009	4,078,600	77	52,969	52,000
2010	2,137,500	34	62,868	56,000
2011	1,826,600	47	38,864	51,000
2012	2,809,100	68	41,310	49,000
2013	2,484,400	49	50,702	50,000
2014	3,732,600	68	54,891	50,000
2015	2,313,900	43	53,812	51,000
2016	1,918,800	44	43,609	50,000
2017	610,000	38	16,053	50,000
2018	0	20	0	50,000
Total	254,274,900	4,102		

Notes:

1. Column (1) is from the Estimated Unpaid Claims Liability Report as of June 30, 2018, Reported Exhibit 4, column (7).
2. Column (2) is from Reported Exhibit 28, column (5).
3. Selected average loss in column (4) is based on column (3) for notification years 1989 - 2008; the rounded average of column (3) from 2008 through the associated year for notification years 2009 - 2016; and the rounded average of column (3) from 2008 through 2016 for notification years 2017 and 2018.

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 11

Cumulative Paid Loss per Cumulative Reported Claims
As of 06/30/2019

Notification Year	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	
1989	0	0	12,000	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	
1990	59	14,217	21,313	30,652	36,801	42,953	48,297	52,172	55,069	58,069	61,659	65,809	69,585	70,460	73,989	77,303	78,708	81,304	82,403	83,890	84,860	85,617	86,188	87,244	87,824	88,782	89,652	90,280	90,563	22,040	
1991	2,390	6,034	12,311	18,292	24,708	31,792	38,904	42,716	46,119	49,014	51,663	54,783	57,127	59,857	62,663	65,315	66,044	69,385	70,347	71,226	71,640	72,951	73,097	74,369	75,163	76,016	76,774				
1992	707	6,641	14,601	25,919	32,110	37,559	41,353	43,916	46,478	49,584	51,193	54,939	56,991	60,610	62,597	64,938	67,812	68,381	70,065	70,550	71,968	72,377	73,163	73,563	73,958	74,289	74,426				
1993	461	4,932	9,063	14,421	19,939	22,597	25,361	30,732	32,843	36,427	38,659	41,326	43,330	47,293	48,785	50,418	52,360	53,340	54,986	55,651	56,502	57,706	58,606	59,666	60,934	61,695					
1994	73	5,289	11,935	16,083	20,770	23,169	25,947	28,696	31,220	33,210	35,800	38,371	40,692	42,564	45,062	46,154	47,801	49,178	49,685	50,773	51,701	52,320	52,881	54,369	54,858						
1995	850	5,407	12,233	17,797	22,305	26,294	29,413	32,455	35,322	39,268	41,927	44,693	45,899	48,232	50,208	50,876	53,616	55,336	58,415	60,919	62,767	64,241	65,042	65,621							
1996	1,339	5,435	10,385	15,104	19,487	23,001	25,799	28,562	32,686	36,110	38,937	41,337	44,498	46,707	48,411	50,222	53,190	55,144	56,621	57,827	58,285	58,733	59,204								
1997	944	6,725	13,994	16,304	19,534	22,285	24,866	26,902	28,911	30,053	32,222	34,877	36,443	38,160	39,291	41,084	42,392	44,521	45,552	46,361	46,739	46,937									
1998	313	5,437	8,066	10,932	13,097	15,123	17,325	18,291	21,123	23,495	26,754	28,719	29,775	30,730	32,465	33,926	36,597	39,096	40,493	42,791	45,081										
1999	1,015	9,640	18,872	23,521	28,647	31,303	33,801	36,701	38,497	39,778	41,917	42,881	44,690	46,785	47,807	49,370	52,486	54,072	55,353	56,950											
2000	0	1,944	9,169	12,349	13,086	18,666	19,229	21,155	22,013	24,800	25,473	26,385	26,812	28,200	28,871	30,957	34,868	36,855	39,044												
2001	0	1,355	3,225	9,536	11,677	12,513	18,416	20,968	24,322	27,757	29,624	30,705	32,832	35,003	36,432	40,426	43,612	45,245													
2002	0	441	6,340	7,703	9,753	9,980	10,286	18,399	20,248	25,945	29,742	31,902	33,697	34,900	36,211	37,044	37,145														
2003	0	1,475	2,471	3,853	5,026	6,198	9,306	12,648	15,917	16,420	18,306	19,574	19,783	19,940	20,403	20,637															
2004	70	528	4,325	8,235	10,257	11,866	13,319	18,923	19,156	19,936	20,828	21,010	22,727	23,352	24,023																
2005	0	3,572	8,207	12,706	13,593	17,198	18,026	23,470	25,801	30,673	33,850	37,378	41,637	43,656																	
2006	224	1,653	5,617	12,036	14,667	17,321	19,904	24,542	33,254	36,770	41,012	42,731																			
2007	289	1,204	5,880	7,590	14,415	17,653	21,690	27,119	31,232	35,511	39,403	40,183																			
2008	0	568	4,611	8,861	10,995	15,269	22,875	29,013	34,950	41,965	48,406																				
2009	0	12,090	14,948	23,518	25,637	30,403	35,271	41,007	45,156	48,436																					
2010	0	4,455	6,663	19,327	34,451	42,321	52,760	57,665	61,405																						
2011	0	12	13,491	15,408	17,887	20,921	24,515	25,760																							
2012	0	297	7,132	8,577	17,267	22,747	26,646																								
2013	0	5,466	13,443	19,941	25,872	30,499																									
2014	147	8,016	18,748	32,969	42,224																										
2015	255	6,831	26,291	30,830																											
2016	0	5,922	28,090																												
2017	280	2,248																													
2018	0																														

Note: Paid loss and reported claims are estimated using values available at April 30, 2019.

Cumulative Paid Loss on Closed Claims per Cumulative Closed Claims
As of 06/30/2019

Notification Year	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	
1989	0	0	0	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	22,040	
1990	0	539,062	148,756	113,483	104,363	95,834	99,586	100,465	99,557	99,304	99,166	101,546	99,907	93,509	93,167	94,861	91,869	91,431	90,750	89,175	89,433	88,489	87,714	87,300	86,197	85,007	84,760	84,256	83,698	22,040	
1991	496,360	73,355	53,451	54,250	60,324	68,508	75,297	76,439	75,046	77,326	75,793	75,482	73,977	72,856	72,911	71,767	70,701	69,843	69,910	69,912	69,893	69,513	68,982	69,008	68,734	69,504	69,292	68,062			
1992	81,989	40,971	60,023	76,916	78,685	82,544	84,983	82,596	82,232	83,573	77,035	77,749	71,812	69,762	68,534	69,305	70,290	70,091	70,471	69,916	69,986	69,164	69,991	69,960	69,102	69,047	69,047				
1993	40,527	36,589	43,644	51,115	60,275	58,031	54,126	58,965	57,856	57,577	55,842	54,089	53,260	54,146	54,094	54,841	55,885	55,665	55,774	55,573	54,552	54,391	54,752	54,623	54,741	54,187					
1994	10,120	51,545	58,034	64,457	72,007	82,959	99,556	61,790	57,897	55,650	50,710	51,942	49,625	49,213	49,924	50,412	50,189	49,801	49,443	49,384	49,936	49,790	49,636	49,651	49,651						
1995	24,300	40,145	57,691	62,248	57,328	58,505	58,709	58,791	58,080	55,982	56,381	52,844	52,673	53,403	53,352	52,979	53,413	53,218	52,591	52,277	52,080	52,128	52,003	52,003							
1996	21,638	31,046	43,654	52,927	54,818	54,851	49,384	48,065	47,874	49,929	50,089	51,269	52,561	52,125	52,662	53,141	54,458	54,254	54,383	53,694	53,171	52,736	52,671								
1997	149,129	62,499	68,104	58,238	58,566	53,246	47,236	43,344	42,610	40,145	41,617	43,566	43,627	43,440	43,039	43,691	44,162	45,782	44,617	43,232	43,232	43,232									
1998	0	63,300	48,587	50,044	34,969	30,876	31,132	30,017	31,417	31,152	33,525	34,036	34,703	34,491	34,864	34,475	34,016	33,508	33,650	33,068	32,880										
1999	102,896	137,738	104,193	88,684	60,892	50,161	48,737	49,912	50,454	49,138	51,437	52,435	54,427	55,190	53,304	53,567	54,388	55,602	53,568	52,952											
2000	0	12,439	31,496	23,633	19,316	24,048	23,759	23,956	22,905	25,204	24,971	25,122	24,409	24,630	24,080	24,829	24,934	24,655	24,655												
2001	0	46,067	15,665	26,446	22,308	16,125	21,610	21,710	26,096	26,657	28,784	30,066	32,348	32,827	31,497	30,615	30,615	30,615													
2002	0	2,699	30,391	23,921	18,358	14,515	27,420	28,897	33,922	35,784	34,711	34,433	34,701	34,192	33,518	33,518															
2003	0	19,548	16,368	11,297	9,150	11,471	14,979	17,302	18,346	18,490	17,850																				

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 12

Ultimate Loss Based on Ultimate Face Value Less Disallowed Costs Less Deductible Recoveries
As of 06/30/2019

Notification Year	Ultimate Gross Face Value	Ultimate Disallowed Costs	Ultimate Deductible Recoveries	Ultimate Loss (1) - (2) - (3)
_____	(1)	(2)	(3)	(4)
1989	\$ 38,000	\$ 5,548	\$ 10,125	\$ 22,327
1990	47,444,000	8,966,916	9,272,977	29,204,107
1991	78,509,000	13,974,602	16,714,409	47,819,989
1992	44,160,000	8,655,360	9,231,206	26,273,434
1993	38,357,000	7,709,757	8,857,053	21,790,190
1994	28,918,000	5,783,600	7,819,427	15,314,973
1995	32,003,000	6,912,648	7,778,009	17,312,343
1996	48,161,000	9,343,234	12,033,507	26,784,259
1997	12,949,000	1,916,452	3,232,537	7,800,011
1998	19,180,000	3,855,180	5,777,457	9,547,363
1999	11,637,000	2,339,037	2,194,319	7,103,644
2000	5,245,000	1,054,245	1,760,117	2,430,638
2001	4,590,000	1,285,200	1,649,095	1,655,705
2002	4,587,000	921,987	1,843,502	1,821,511
2003	3,863,000	776,463	1,833,403	1,253,134
2004	3,443,000	692,043	1,760,612	990,345
2005	7,009,000	1,408,809	3,248,111	2,352,080
2006	8,308,000	2,077,000	3,177,810	3,053,190
2007	7,942,000	1,985,500	2,966,337	2,990,163
2008	10,574,000	2,643,500	4,599,690	3,330,810
2009	10,912,000	2,728,000	4,746,720	3,437,280
2010	4,777,000	1,194,250	2,077,995	1,504,755
2011	5,305,000	1,326,250	2,307,675	1,671,075
2012	8,174,000	2,043,500	3,555,690	2,574,810
2013	7,013,000	1,753,250	3,050,655	2,209,095
2014	10,158,000	2,539,500	4,418,730	3,199,770
2015	6,289,000	1,572,250	2,735,715	1,981,035
2016	6,758,000	1,689,500	2,939,730	2,128,770
2017	5,240,000	1,310,000	2,279,400	1,650,600
2018	2,709,000	677,250	1,178,415	853,335
Total	\$484,252,000	\$99,140,831	\$135,050,428	\$250,060,741

Notes:

1. Column (1) is from Reported Exhibit 16, column (4).
2. Column (2) is from Reported Exhibit 24, column (3).
3. Column (3) is from Reported Exhibit 26, column (5).

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 13

Bornhuetter-Ferguson Using Gross Face Value and Paid Loss
As of 06/30/2019

Notification Year	Gross Face Value	Selected Ratio	Expected Ultimate Loss (1) x (2)	Selected Development Factors	Cumulative Development Factors	Ratio of Cumulative Paid Loss to Ultimate Loss 1 / (5)	Ratio of Undeveloped Paid Loss to Ultimate Loss 1 - (6)	Undeveloped Paid Loss (3) x (7)	Cumulative Paid Loss	Ultimate Loss (8) + (9)	Calculated Ratio of Loss to Gross Face Value (10) / (1)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1989	\$ 38,000	0.588	\$ 22,327	\$ 1.010	1.010	0.990	0.010	\$ 221	\$ 22,040	\$ 22,261	0.586
1990	47,444,000	0.616	29,204,107	1.011	1.021	0.979	0.021	603,753	29,251,694	29,855,447	0.629
1991	78,509,000	0.609	47,819,989	1.011	1.032	0.969	0.031	1,498,151	47,830,282	49,328,433	0.628
1992	44,160,000	0.595	26,273,434	1.008	1.041	0.961	0.039	1,033,796	25,900,372	26,934,167	0.610
1993	38,357,000	0.568	21,790,190	1.009	1.050	0.952	0.048	1,041,211	21,716,510	22,757,721	0.593
1994	28,918,000	0.530	15,314,973	1.009	1.060	0.943	0.057	867,348	15,140,748	16,008,095	0.554
1995	32,003,000	0.541	17,312,343	1.013	1.074	0.931	0.069	1,186,113	17,980,076	19,166,189	0.599
1996	48,161,000	0.556	26,784,259	1.015	1.090	0.918	0.082	2,200,927	26,345,726	28,546,653	0.593
1997	12,949,000	0.602	7,800,011	1.012	1.103	0.907	0.093	728,892	7,416,058	8,144,950	0.629
1998	19,180,000	0.498	9,547,363	1.016	1.120	0.893	0.107	1,024,308	9,512,106	10,536,414	0.549
1999	11,637,000	0.610	7,103,644	1.016	1.138	0.879	0.121	862,584	5,922,843	6,785,427	0.583
2000	5,245,000	0.463	2,430,638	1.032	1.175	0.851	0.149	361,820	2,498,789	2,860,609	0.545
2001	4,590,000	0.361	1,655,705	1.027	1.207	0.828	0.172	284,136	1,538,331	1,822,468	0.397
2002	4,587,000	0.397	1,821,511	1.052	1.270	0.787	0.213	387,540	1,671,509	2,059,048	0.449
2003	3,863,000	0.324	1,253,134	1.080	1.371	0.729	0.271	339,386	1,093,750	1,433,136	0.371
2004	3,443,000	0.288	990,345	1.046	1.435	0.697	0.303	300,239	960,939	1,261,178	0.366
2005	7,009,000	0.336	2,352,080	1.035	1.485	0.674	0.326	767,743	2,619,340	3,387,083	0.483
2006	8,308,000	0.367	3,053,190	1.037	1.540	0.649	0.351	1,070,283	2,666,926	3,737,210	0.450
2007	7,942,000	0.377	2,990,163	1.073	1.653	0.605	0.395	1,180,742	2,772,648	3,953,390	0.498
2008	10,574,000	0.315	3,330,810	1.062	1.755	0.570	0.430	1,432,399	3,533,667	4,966,067	0.470
2009	10,912,000	0.315	3,437,280	1.101	1.932	0.518	0.482	1,657,912	3,729,538	5,387,450	0.494
2010	4,777,000	0.315	1,504,755	1.162	2.244	0.446	0.554	834,267	2,087,766	2,922,033	0.612
2011	5,305,000	0.315	1,671,075	1.181	2.651	0.377	0.623	1,040,811	1,210,715	2,251,526	0.424
2012	8,174,000	0.315	2,574,810	1.113	2.951	0.339	0.661	1,702,335	1,811,917	3,514,252	0.430
2013	7,013,000	0.315	2,209,095	1.143	3.375	0.296	0.704	1,554,460	1,494,447	3,048,907	0.435
2014	10,158,000	0.315	3,199,770	1.187	4.006	0.250	0.750	2,401,060	2,871,224	5,272,284	0.519
2015	6,289,000	0.315	1,981,035	1.272	5.094	0.196	0.804	1,592,166	1,325,704	2,917,870	0.464
2016	6,758,000	0.315	2,128,770	1.482	7.548	0.132	0.868	1,846,729	1,235,977	3,082,706	0.456
2017	5,240,000	0.315	1,650,600	2.062	15.560	0.064	0.936	1,544,521	85,432	1,629,953	0.311
2018	2,709,000	0.315	853,335	7.023	109.273	0.009	0.991	845,526	-	845,526	0.312
Total	\$484,252,000		\$ 250,060,741					\$ 32,191,379	\$242,247,074	\$ 274,438,453	

Notes:

- Column (1) is from Reported Exhibit 16, column (4).
- Column (2) is the complement of Reported Exhibit 24, column (2) multiplied by the complement of Reported Exhibit 26, column (4).
- Development factors in columns (4) and (5) are selected in Reported Exhibit 7.
- Cumulative paid loss in column (9) is estimated using values available at April 30, 2019.

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 14

Cumulative Paid Loss to Cumulative Gross Face Value
As of 06/30/2019

Notification Year	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	
1989	0.000	0.000	0.320	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	
1990	0.002	0.318	0.334	0.438	0.469	0.507	0.546	0.590	0.564	0.539	0.550	0.577	0.566	0.573	0.586	0.597	0.598	0.608	0.608	0.614	0.615	0.616	0.618	0.622	0.620	0.623	0.627	0.629	0.627	0.587	
1991	0.180	0.196	0.303	0.372	0.425	0.488	0.530	0.553	0.509	0.534	0.542	0.548	0.555	0.565	0.582	0.596	0.593	0.602	0.609	0.611	0.613	0.612	0.612	0.616	0.620	0.622	0.626	0.624			
1992	0.085	0.242	0.324	0.474	0.473	0.519	0.544	0.491	0.509	0.521	0.512	0.532	0.540	0.557	0.558	0.565	0.584	0.583	0.590	0.590	0.597	0.601	0.603	0.604	0.606	0.606					
1993	0.084	0.314	0.356	0.437	0.496	0.504	0.393	0.448	0.448	0.457	0.464	0.479	0.484	0.528	0.535	0.542	0.554	0.557	0.568	0.570	0.573	0.580	0.582	0.586	0.591	0.587					
1994	0.011	0.207	0.373	0.410	0.459	0.382	0.408	0.431	0.431	0.437	0.454	0.471	0.483	0.460	0.510	0.507	0.516	0.529	0.529	0.532	0.539	0.539	0.538	0.548	0.548						
1995	0.143	0.305	0.461	0.500	0.404	0.444	0.446	0.438	0.452	0.459	0.471	0.487	0.491	0.509	0.521	0.519	0.538	0.542	0.558	0.575	0.581	0.588	0.592	0.594							
1996	0.224	0.411	0.446	0.324	0.382	0.406	0.414	0.415	0.442	0.465	0.476	0.486	0.506	0.517	0.522	0.528	0.547	0.560	0.568	0.576	0.578	0.579	0.581								
1997	0.126	0.361	0.449	0.472	0.480	0.480	0.490	0.505	0.521	0.508	0.522	0.541	0.551	0.561	0.567	0.581	0.589	0.603	0.608	0.614	0.616	0.614									
1998	0.053	0.276	0.322	0.360	0.346	0.367	0.385	0.372	0.399	0.415	0.444	0.458	0.463	0.464	0.480	0.478	0.488	0.508	0.514	0.522	0.537										
1999	0.198	0.243	0.359	0.371	0.427	0.440	0.459	0.489	0.479	0.484	0.499	0.494	0.502	0.514	0.516	0.524	0.544	0.551	0.547	0.555											
2000	0.000	0.128	0.277	0.327	0.314	0.381	0.358	0.374	0.376	0.419	0.424	0.430	0.433	0.443	0.444	0.462	0.499	0.514	0.527												
2001	0.000	0.045	0.076	0.136	0.143	0.147	0.208	0.228	0.254	0.270	0.282	0.290	0.305	0.323	0.329	0.351	0.372	0.377													
2002	0.000	0.024	0.208	0.185	0.189	0.170	0.164	0.282	0.277	0.336	0.367	0.385	0.401	0.406	0.422	0.419	0.420														
2003	0.000	0.110	0.088	0.118	0.131	0.145	0.195	0.250	0.307	0.298	0.329	0.343	0.345	0.344	0.347	0.340															
2004	0.007	0.019	0.107	0.172	0.198	0.208	0.224	0.308	0.301	0.306	0.315	0.310	0.332	0.338																	
2005	0.000	0.104	0.188	0.241	0.231	0.262	0.261	0.314	0.332	0.379	0.397	0.425	0.461	0.468																	
2006	0.019	0.045	0.097	0.179	0.208	0.229	0.246	0.267	0.345	0.365	0.395	0.407	0.407																		
2007	0.035	0.035	0.137	0.153	0.239	0.266	0.310	0.369	0.387	0.409	0.445	0.449																			
2008	0.000	0.015	0.103	0.169	0.180	0.217	0.282	0.331	0.362	0.404	0.440																				
2009	0.000	0.241	0.262	0.368	0.375	0.414	0.451	0.468	0.488	0.463																					
2010	0.000	0.097	0.157	0.267	0.425	0.460	0.532	0.550	0.557																						
2011	0.000	0.000	0.285	0.292	0.319	0.342	0.382	0.364																							
2012	0.000	0.008	0.150	0.161	0.280	0.337	0.363																								
2013	0.000	0.091	0.196	0.258	0.302	0.340																									
2014	0.008	0.159	0.303	0.441	0.483																										
2015	0.007	0.123	0.404	0.405																											
2016	0.000	0.101	0.381																												
2017	0.000	0.045																													
2018	0.000																														
Average	0.075	0.151	0.267	0.319	0.345	0.362	0.382	0.406	0.424	0.431	0.446	0.458	0.468	0.482	0.491	0.506	0.531	0.548	0.568	0.577	0.584	0.590	0.589	0.594	0.595	0.605	0.612	0.613	0.607	0.587	
3 Year Average	0.020	0.090	0.363	0.368	0.355	0.340	0.426	0.460	0.469	0.425	0.427	0.427	0.400	0.383	0.371	0.370	0.430	0.481	0.529	0.564	0.577	0.594	0.570	0.576	0.581	0.605	0.620	0.613	0.607	0.587	

Note: Paid loss and gross face value are estimated using values available at April 30, 2019.

Cumulative Paid Loss on Closed Claims to Cumulative Gross Face Value on Closed Claims
As of 06/30/2019

Notification Year	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	
1989	0.000	0.000	0.320	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	0.587	
1990	0.002	0.315	0.334	0.437	0.468	0.509	0.542	0.559	0.564	0.541	0.559	0.580	0.566	0.574	0.584	0.598	0.599	0.604	0.604	0.609	0.610	0.611	0.611	0.613	0.613	0.615	0.615	0.615	0.615	0.615	
1991	0.184	0.199	0.308	0.377	0.426	0.499	0.527	0.550	0.508	0.532	0.534	0.544	0.549	0.558	0.574	0.589	0.590	0.592	0.602	0.605	0.607	0.608	0.608	0.608	0.610	0.610	0.610	0.610	0.610	0.615	
1992	0.085	0.238	0.315	0.471	0.476	0.517	0.540	0.484	0.502	0.516	0.507	0.526	0.534	0.549	0.551	0.559	0.576	0.575	0.582	0.579	0.587	0.585	0.591	0.591	0.593	0.594	0.594				
1993	0.084	0.307	0.347	0.431	0.487	0.494	0.381	0.441	0.441	0.443	0.449	0.466	0.481	0.519	0.528	0.534	0.547	0.549	0.556	0.557	0.560	0.563	0.565	0.566	0.568	0.569					
1994	0.012	0.214	0.380	0.414	0.465	0.376	0.403	0.425	0.425	0.431	0.446	0.461	0.474	0.483	0.502	0.499	0.505	0.515	0.517	0.520	0.522	0.524	0.520	0.530	0.530						
1995	0.148	0.301	0.442	0.482	0.387	0.426	0.427	0.418	0.433	0.441	0.455	0.474	0.479	0.495	0.507	0.503	0.528	0.533	0.535	0.539	0.540	0.541	0.541	0.541							
1996	0.252	0.406	0.446	0.312	0.366	0.392	0.390	0.392	0.423	0.446	0.455	0.468	0.490	0.499	0.506	0.512	0.531	0.546	0.550	0.554	0.554	0.554	0.554	0.554							
1997	0.128	0.358	0.461	0.470	0.474	0.475	0.481	0.497	0.511	0.497	0.513	0.534	0.544	0.551	0.560	0.574	0.579	0.593	0.598	0.603	0.603	0.603									
1998	0.061	0.278	0.316	0.361	0.334	0.347	0.364	0.354	0.396	0.400	0.427	0.438	0.445	0.450	0.469	0.471	0.477	0.485	0.489	0.491	0.491										
1999	0.215	0.253	0.356	0.354	0.414	0.422	0.443	0.458	0.471	0.471	0.484	0.482	0.493	0.500	0.504	0.514	0.529	0.538	0.541	0.541											
2000	0.000	0.144	0.295	0.294	0.277	0.351	0.328	0.343	0.345	0.391	0.395	0.411	0.411	0.413	0.413	0.424	0.425	0.427	0.427												
2001	0.000	0.048	0.084	0.129	0.121	0.126	0.189	0.198	0.228	0.243	0.248	0.257	0.274	0.285	0.291	0.292	0.292	0.292	0.292												
2002	0.000	0.010	0.215	0.206	0.188	0.168	0.155	0.275	0.278	0.349	0.383	0.399	0.416	0.426	0.429	0.430	0.430														
2003	0.000	0.112	0.109	0																											

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 15

Estimated Average Gross Face Value
As of 06/30/2019

Notification Year	Ultimate Gross Face Value	Ultimate Claims	Ultimate Average Gross Face Value (1) / (2)	Change in Ultimate Average Gross Face Value (4)	Percentage Change (4) / Prior (3)
	(1)	(2)	(3)	(4)	(5)
1989	38,000	1	38,000		
1990	47,444,000	323	146,885	108,885	286.541
1991	78,509,000	623	126,018	-20,868	-14.207
1992	44,160,000	348	126,897	879	0.697
1993	38,357,000	352	108,969	-17,928	-14.128
1994	28,918,000	276	104,775	-4,193	-3.848
1995	32,003,000	274	116,799	12,024	11.476
1996	48,161,000	445	108,227	-8,572	-7.339
1997	12,949,000	158	81,956	-26,271	-24.274
1998	19,180,000	211	90,900	8,945	10.914
1999	11,637,000	104	111,894	20,994	23.095
2000	5,245,000	64	81,953	-29,941	-26.758
2001	4,590,000	34	135,000	53,047	64.728
2002	4,587,000	45	101,933	-33,067	-24.494
2003	3,863,000	53	72,887	-29,047	-28.496
2004	3,443,000	40	86,075	13,188	18.094
2005	7,009,000	60	116,817	30,742	35.715
2006	8,308,000	61	136,197	19,380	16.590
2007	7,942,000	69	115,101	-21,095	-15.489
2008	10,574,000	73	144,849	29,748	25.845
2009	10,912,000	77	141,714	-3,135	-2.164
2010	4,777,000	34	140,500	-1,214	-0.857
2011	5,305,000	47	112,872	-27,628	-19.664
2012	8,174,000	68	120,206	7,334	6.497
2013	7,013,000	49	143,122	22,917	19.064
2014	10,158,000	68	149,382	6,260	4.374
2015	6,289,000	43	146,256	-3,127	-2.093
2016	6,758,000	44	153,591	7,335	5.015
2017	5,240,000	38	137,895	-15,696	-10.219
2018	2,709,000	20	135,450	-2,445	-1.773
Total	484,252,000	4,102			
Exponential Fit:					
Trend (%)			1.666		
Intercept			88,125		
R Squared			0.253		

Notes:

1. Column (1) is from Reported Exhibit 16, column (4).
2. Column (2) is from Reported Exhibit 28, column (5).

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 16

Comparison of Ultimate Gross Face Value Estimates
As of 06/30/2019

Notification Year	Gross Face Value Development	Average Gross Face Value	Bornhuetter- Ferguson Using Average Gross Face Value	Ultimate Gross Face Value
_____	(1)	(2)	(3)	(4)
1989	\$ 37,901	\$ 38,000	\$ 37,902	\$ 38,000
1990	47,424,954	47,481,000	47,425,895	47,444,000
1991	78,515,147	78,498,000	78,514,742	78,509,000
1992	44,141,583	44,196,000	44,143,342	44,160,000
1993	38,350,673	38,368,000	38,351,299	38,357,000
1994	28,884,251	28,980,000	28,888,481	28,918,000
1995	31,972,763	32,058,000	31,977,293	32,003,000
1996	48,216,723	48,060,000	48,207,344	48,161,000
1997	12,944,970	12,956,000	12,945,715	12,949,000
1998	19,169,043	19,201,000	19,171,452	19,180,000
1999	11,630,255	11,648,000	11,631,725	11,637,000
2000	5,243,016	5,248,000	5,243,495	5,245,000
2001	4,590,103	4,590,000	4,590,092	4,590,000
2002	4,585,439	4,590,000	4,586,037	4,587,000
2003	3,858,671	3,869,000	3,860,392	3,863,000
2004	3,445,541	3,440,000	3,444,509	3,443,000
2005	7,001,532	7,020,000	7,005,224	7,009,000
2006	8,316,624	8,296,000	8,312,265	8,308,000
2007	7,946,624	7,935,000	7,944,034	7,942,000
2008	10,565,671	10,585,000	10,570,292	10,574,000
2009	10,896,652	10,934,000	10,906,394	10,912,000
2010	5,392,561	3,978,000	4,960,705	4,777,000
2011	5,145,351	5,499,000	5,270,494	5,305,000
2012	8,364,804	7,956,000	8,200,071	8,174,000
2013	8,030,630	5,929,000	7,079,576	7,013,000
2014	11,883,457	8,432,000	10,158,558	10,158,000
2015	7,306,282	5,461,000	6,288,702	6,289,000
2016	8,311,189	5,764,000	6,757,996	6,758,000
2017	5,780,081	4,978,000	5,240,098	5,240,000
2018	3,240,899	2,620,000	2,709,265	2,709,000
Total	\$491,193,390	\$478,608,000	\$484,423,389	\$484,252,000

- Notes:
1. Column (1) is from Reported Exhibit 17, column (4).
 2. Column (2) is from Reported Exhibit 20, column (3).
 3. Column (3) is from Reported Exhibit 21, column (10).
 4. Selected ultimate gross face value in column (4) is based on a rounded average of columns (1) - (3) for notification years 1989 through 2014.
Selected ultimate gross face value for notification years 2015 through 2018 is based on column (3).

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 17

Ultimate Gross Face Value Based on Gross Face Value Development
As of 06/30/2019

Notification Year	Cumulative Gross Face Value	Selected Development Factors	Cumulative Development Factors	Ultimate Gross Face Value (1) x (3)
_____	_____ (1)	_____ (2)	_____ (3)	_____ (4)
1989	\$ 37,526	1.010	1.010	\$ 37,901
1990	46,628,997	1.007	1.017	47,424,954
1991	76,660,762	1.007	1.024	78,515,147
1992	42,715,328	1.009	1.033	44,141,583
1993	36,965,066	1.004	1.037	38,350,673
1994	27,608,365	1.008	1.046	28,884,251
1995	30,273,474	1.009	1.056	31,972,763
1996	45,331,257	1.007	1.064	48,216,723
1997	12,069,770	1.008	1.073	12,944,970
1998	17,723,899	1.008	1.082	19,169,043
1999	10,666,865	1.008	1.090	11,630,255
2000	4,739,339	1.015	1.106	5,243,016
2001	4,083,171	1.016	1.124	4,590,103
2002	3,983,987	1.024	1.151	4,585,439
2003	3,215,573	1.043	1.200	3,858,671
2004	2,803,491	1.024	1.229	3,445,541
2005	5,601,880	1.017	1.250	7,001,532
2006	6,558,865	1.015	1.268	8,316,624
2007	6,176,303	1.015	1.287	7,946,624
2008	8,039,737	1.021	1.314	10,565,671
2009	8,054,352	1.029	1.353	10,896,652
2010	3,746,250	1.064	1.439	5,392,561
2011	3,324,603	1.075	1.548	5,145,351
2012	4,994,087	1.082	1.675	8,364,804
2013	4,396,515	1.091	1.827	8,030,630
2014	5,944,584	1.094	1.999	11,883,457
2015	3,277,236	1.115	2.229	7,306,282
2016	3,243,296	1.149	2.563	8,311,189
2017	1,888,771	1.194	3.060	5,780,081
2018	465,935	2.273	6.956	3,240,899
Total	\$431,219,284			\$491,193,390

Notes:

1. Cumulative Gross Face Value in column (1) is estimated using values available at April 30, 2019.
2. Development factors in columns (2) and (3) are selected in Reported Exhibit 19.

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 18

Gross Face Value
As of 06/30/2019

Notification Year	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360
1989	0	0	37,526	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	6,487,962	7,973,920	6,163,469	1,976,271	2,738,420	2,049,709	1,165,129	1,563,816	1,396,531	3,603,166	576,143	1,118,273	2,338,310	554,505	1,081,505	1,061,368	646,345	675,367	619,449	338,296	415,139	380,160	141,561	269,204	425,256	259,952	143,911	199,635	266,226	0
1991	8,285,085	10,937,362	6,083,791	5,315,991	5,577,650	4,403,415	4,473,381	2,774,533	8,055,486	1,277,824	2,229,942	2,837,221	1,853,883	1,954,628	1,092,547	1,157,687	1,088,487	1,073,690	592,285	704,518	637,474	516,999	505,631	516,594	857,163	554,906	450,615	895,975	0	
1992	2,908,826	6,628,453	6,140,877	3,352,138	4,571,007	1,574,599	1,296,828	4,655,938	6,611,855	1,322,655	1,667,443	1,150,407	822,151	1,126,482	1,133,560	999,916	423,222	370,567	497,420	291,807	332,187	277,337	137,733	124,160	121,369	71,558	55,232	0	0	
1993	1,932,233	3,604,960	3,421,795	2,655,579	2,523,414	1,650,123	6,934,854	1,417,826	1,690,868	2,255,738	1,240,419	1,021,240	532,174	667,985	583,012	611,659	530,780	455,606	340,120	309,516	372,598	264,220	443,866	389,423	468,714	666,342	0	0	0	
1994	1,763,231	5,275,204	1,800,844	1,982,029	1,660,578	4,277,644	794,958	817,619	1,624,471	977,371	801,085	732,880	753,284	384,674	415,059	745,140	322,623	201,770	266,540	408,574	117,194	331,346	338,921	239,626	242,057	0	0	0	0	
1995	1,624,448	3,239,320	2,400,259	2,484,850	5,387,279	1,106,087	1,846,333	2,194,010	1,228,943	1,934,786	942,439	739,645	461,806	367,873	436,324	473,801	444,029	644,611	741,472	353,219	537,751	338,202	194,830	151,649	0	0	0	0	0	
1996	2,660,742	3,222,174	4,477,488	10,385,989	1,957,261	2,497,794	2,539,599	2,874,038	2,265,932	1,666,326	1,820,209	1,500,740	1,254,635	1,066,238	1,084,475	1,030,399	957,938	564,547	505,909	368,879	195,990	207,879	226,116	0	0	0	0	0	0	
1997	1,184,478	1,929,321	1,809,020	533,879	971,012	905,975	868,324	402,582	351,324	594,366	416,532	422,890	265,432	300,139	201,939	219,798	202,105	301,422	173,812	77,905	58,411	89,306	0	0	0	0	0	0	0	
1998	1,243,620	2,914,873	1,131,788	1,116,563	1,589,937	709,148	800,290	859,961	801,900	780,500	764,656	522,344	348,207	393,809	303,716	686,128	927,908	398,813	319,886	685,534	424,516	0	0	0	0	0	0	0	0	
1999	532,583	3,586,110	1,341,885	1,134,221	381,752	430,359	211,136	523,119	224,027	189,408	186,156	292,171	230,716	210,998	153,578	170,292	229,368	176,839	325,535	136,613	0	0	0	0	0	0	0	0	0	0
2000	363,370	609,823	1,144,309	300,514	246,573	470,648	302,844	186,311	123,577	40,652	57,423	82,461	36,013	109,914	87,422	122,936	183,132	119,074	152,345	0	0	0	0	0	0	0	0	0	0	0
2001	335,487	698,755	413,029	942,816	393,776	119,805	103,194	122,462	129,334	232,266	83,326	21,777	64,448	24,032	84,828	149,613	63,987	100,236	0	0	0	0	0	0	0	0	0	0	0	0
2002	123,190	716,678	532,288	501,422	446,131	313,580	192,875	327,345	133,551	171,155	187,300	83,167	28,814	104,856	37,355	76,227	6,055	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	315,460	392,815	627,079	398,541	301,699	236,530	252,022	160,908	63,617	167,164	32,084	73,228	19,720	34,041	39,576	101,082	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	398,558	735,225	483,399	295,326	160,560	206,364	94,883	101,900	68,195	63,746	40,534	62,892	24,311	28,643	38,954	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	912,014	1,158,911	543,056	552,847	364,348	414,173	204,883	336,759	133,863	267,195	232,649	150,785	143,688	186,707	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	708,626	1,582,027	1,248,157	565,185	200,491	307,352	316,324	671,113	273,357	272,199	188,125	78,186	147,723	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	567,888	1,795,899	605,290	446,130	743,333	407,863	261,947	233,049	503,733	420,438	116,983	66,742	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	1,517,095	1,271,009	468,685	570,740	636,214	684,306	765,376	483,782	660,030	519,704	462,822	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	1,750,245	2,106,598	536,454	529,171	342,740	388,572	374,270	746,223	354,853	925,226	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	590,288	968,647	319,952	586,468	287,553	372,925	246,614	194,061	179,742	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	928,227	1,029,651	264,481	255,656	161,050	238,526	135,277	311,734	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	875,672	1,771,452	582,718	398,056	560,813	401,583	403,794	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	1,173,424	1,766,249	424,817	419,232	414,344	198,450	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	1,296,722	2,124,089	791,745	874,198	857,830	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	1,675,231	710,247	413,288	478,469	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	839,721	1,745,090	658,485	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	544,938	1,343,833	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	465,935	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: Gross face value is estimated using values available at April 30, 2019.

Cumulative Gross Face Value
As of 06/30/2019

Notification Year	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360
1989	0	0	37,526	37,526	37,526	37,526	37,526	37,526	37,526	37,526	37,526	37,526	37,526	37,526	37,526	37,526	37,526	37,526	37,526	37,526	37,526	37,526	37,526	37,526	37,526	37,526	37,526	37,526	37,526	37,526
1990	6,487,962	14,461,981	20,625,350	22,601,620	25,340,040	27,389,749	28,554,876	30,118,694	31,515,225	35,118,391	35,694,534	36,812,807	39,151,117	39,705,622	40,787,127	41,948,495	42,494,840	43,170,207	43,799,656	44,127,952	44,543,091	44,923,252	45,064,813	45,334,017	45,759,273	46,019,225	46,163,135	46,362,771	46,628,997	0
1991	8,285,085	19,222,447	25,306,238	30,622,230	36,199,879	40,603,294	45,076,875	47,851,208	55,906,694	57,184,518	59,410,459	62,247,681	64,101,564	66,056,192	67,148,739	68,306,426	69,394,913	70,468,603	71,020,888	71,725,406	72,362,880	72,879,878	73,385,509	73,902,103	74,759,266	75,314,172	75,764,787	76,660,762	0	0
1992	2,908,826	9,537,279	15,678,156	19,030,294	23,601,300	25,175,899	26,472,527	31,128,465	31,790,120	33,112,775	34,780,219	35,930,626	36,752,777	37,879,259	39,012,819	40,012,736	40,435,958	40,806,525	41,303,944	41,595,752	41,927,939	42,205,275	42,343,008	42,467,168	42,588,537	42,660,096	42,715,328	0	0	0
1993	1,932,233	5,537,193	9,958,988	11,614,567	14,137,981	15,788,104	22,722,958	24,140,784	25,831,652	28,087,390	29,327,809	30,349,049	30,881,224	31,549,208	32,112,220	32,723,879	33,254,660	33,710,265	34,050,386	34,359,920	34,732,500	34,996,720	35,440,587	35,830,010	36,298,724	36,965,066	0	0	0	0
1994	1,763,231	7,038,435	8,839,279	10,821,308	12,481,886	16,759,530	17,554,489	18,372,107	19,996,579	20,973,949	21,775,034	22,507,915	23,261,198	23,979,873	24,394,932	25,140,072	25,462,335	25,664,106	25,930,646	26,339,220	26,456,415	26,787,761	27,126,681	27,366,308	27,608,365	0	0	0	0	0
1995	1,624,448	4,863,798	7,264,028	9,748,876	11,136,155	16,242,242	16,988,575	20,282,885	21,511,527	23,446,314	24,388,753	25,128,398	25,590,204	25,957,586	26,393,910	26,867,711	27,311,740	27,896,351	28,697,824	29,051,043	29,586,793	29,926,995	30,121,824	30,273,474						

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 19

Gross Face Value Development
As of 06/30/2019

Notification Year	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-Ult	
1989	0.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1990	2.229	1.426	1.096	1.121	1.081	1.043	1.055	1.046	1.114	1.016	1.031	1.064	1.014	1.027	1.026	1.015	1.016	1.014	1.008	1.009	1.009	1.003	1.006	1.009	1.006	1.006	1.003	1.004	1.006	1.000	
1991	2.320	1.316	1.210	1.182	1.122	1.110	1.062	1.168	1.023	1.039	1.048	1.030	1.030	1.017	1.017	1.016	1.015	1.008	1.010	1.009	1.007	1.007	1.007	1.012	1.007	1.006	1.012				
1992	3.279	1.644	1.214	1.240	1.067	1.052	1.176	1.021	1.042	1.050	1.033	1.023	1.031	1.030	1.026	1.011	1.009	1.012	1.007	1.008	1.007	1.003	1.003	1.003	1.002	1.001					
1993	2.866	1.618	1.296	1.217	1.117	1.439	1.062	1.070	1.087	1.044	1.035	1.018	1.022	1.018	1.019	1.016	1.014	1.010	1.009	1.011	1.008	1.013	1.011	1.013	1.018						
1994	3.992	1.256	1.224	1.153	1.343	1.047	1.047	1.088	1.049	1.038	1.034	1.033	1.031	1.017	1.031	1.013	1.008	1.010	1.016	1.004	1.013	1.013	1.009	1.009							
1995	2.994	1.493	1.342	1.553	1.073	1.114	1.121	1.061	1.090	1.040	1.030	1.018	1.014	1.017	1.018	1.017	1.024	1.012	1.012	1.019	1.011	1.007	1.005								
1996	2.211	1.761	2.002	1.094	1.110	1.101	1.104	1.074	1.051	1.053	1.041	1.033	1.027	1.027	1.025	1.023	1.013	1.012	1.008	1.004	1.005	1.005									
1997	2.629	1.581	1.108	1.178	1.141	1.094	1.050	1.042	1.064	1.045	1.043	1.026	1.029	1.019	1.020	1.018	1.027	1.015	1.007	1.005	1.007										
1998	3.344	1.272	1.211	1.248	1.089	1.092	1.090	1.077	1.070	1.064	1.041	1.026	1.029	1.022	1.048	1.062	1.025	1.020	1.041	1.025											
1999	7.733	1.326	1.208	1.058	1.062	1.029	1.069	1.028	1.023	1.022	1.033	1.026	1.023	1.016	1.018	1.023	1.018	1.032	1.013												
2000	2.678	2.176	1.142	1.102	1.177	1.097	1.054	1.034	1.011	1.015	1.021	1.009	1.028	1.021	1.030	1.043	1.027	1.033													
2001	3.083	1.399	1.651	1.165	1.043	1.036	1.041	1.041	1.071	1.024	1.006	1.018	1.007	1.023	1.040	1.016	1.025														
2002	6.834	1.632	1.365	1.238	1.135	1.073	1.116	1.042	1.052	1.054	1.023	1.008	1.028	1.010	1.020	1.002															
2003	2.245	1.885	1.298	1.174	1.116	1.111	1.064	1.024	1.061	1.011	1.025	1.007	1.011	1.013	1.032																
2004	2.845	1.426	1.183	1.084	1.100	1.042	1.043	1.028	1.025	1.016	1.024	1.009	1.010	1.014																	
2005	2.271	1.262	1.211	1.115	1.117	1.052	1.081	1.030	1.058	1.048	1.029	1.027	1.034																		
2006	3.233	1.545	1.160	1.049	1.071	1.069	1.136	1.049	1.046	1.031	1.012	1.023																			
2007	4.162	1.256	1.151	1.219	1.098	1.057	1.048	1.099	1.075	1.020	1.011																				
2008	1.838	1.168	1.175	1.166	1.153	1.149	1.082	1.103	1.074	1.061																					
2009	2.204	1.139	1.120	1.070	1.074	1.066	1.124	1.052	1.130																						
2010	2.641	1.205	1.312	1.117	1.135	1.079	1.058	1.050																							
2011	2.109	1.135	1.115	1.065	1.090	1.047	1.103																								
2012	3.023	1.220	1.123	1.155	1.096	1.088																									
2013	2.505	1.145	1.125	1.110	1.047																										
2014	2.638	1.231	1.208	1.169																											
2015	1.424	1.173	1.171																												
2016	3.078	1.255																													
2017	3.466																														
Average	3.067	1.405	1.238	1.155	1.106	1.087	1.078	1.056	1.058	1.034	1.027	1.022	1.022	1.018	1.025	1.020	1.017	1.016	1.012	1.009	1.007	1.006	1.006	1.008	1.007	1.003	1.005	1.003	1.000		
3 Year Average	2.656	1.220	1.168	1.144	1.078	1.071	1.095	1.069	1.093	1.037	1.018	1.020	1.019	1.012	1.031	1.020	1.023	1.028	1.020	1.011	1.008	1.008	1.008	1.008	1.009	1.003	1.005	1.003	1.000		
Volume Weighted Average	2.650	1.395	1.252	1.175	1.112	1.102	1.085	1.076	1.060	1.040	1.036	1.030	1.025	1.021	1.024	1.019	1.016	1.014	1.011	1.010	1.008	1.007	1.007	1.009	1.008	1.004	1.009	1.006	1.000		
7 Year Volume Weighted Average Excluding Last 1 Years	2.347	1.188	1.159	1.114	1.106	1.081	1.091	1.065	1.060	1.031	1.019	1.014	1.019	1.019	1.031	1.030	1.020	1.017	1.014	1.009	1.008	1.007	1.007	1.009	1.005	1.005	1.004	1.000			
5 Year Volume Weighted Average	2.390	1.205	1.153	1.131	1.084	1.090	1.085	1.072	1.079	1.038	1.019	1.017	1.020	1.016	1.025	1.038	1.024	1.017	1.014	1.010	1.008	1.007	1.007	1.009	1.008	1.004	1.009	1.006	1.000		
3 Year Volume Weighted Average	2.242	1.222	1.171	1.147	1.076	1.074	1.101	1.071	1.094	1.039	1.017	1.022	1.022	1.012	1.030	1.021	1.021	1.026	1.023	1.009	1.007	1.007	1.008	1.008	1.008	1.004	1.009	1.006	1.000		
5 Year Volume Weighted Average Excluding Last 1 Years	2.273	1.194	1.149	1.115	1.094	1.091	1.082	1.075	1.064	1.029	1.021	1.015	1.015	1.017	1.024	1.043	1.024	1.016	1.015	1.008	1.008	1.008	1.007	1.009	1.005	1.005	1.004	1.000			
Volume Weighted Average Excluding High/Low	2.634	1.393	1.198	1.155	1.098	1.078	1.075	1.056	1.058	1.039	1.033	1.025	1.025	1.020	1.023	1.016	1.015	1.013	1.010	1.009	1.007	1.006	1.006	1.009	1.005	1.002	1.004				
5 Year Volume Weighted Average Excluding High/Low	2.703	1.211	1.138	1.128	1.085	1.077	1.080	1.067	1.070	1.032	1.018	1.016	1.018	1.017	1.027	1.026	1.026	1.021	1.010	1.011	1.009	1.007	1.007	1.010	1.005	1.002	1.004				
Inverse Power Curve	2.017	1.361	1.197	1.128	1.092	1.070	1.056	1.046	1.038	1.033	1.028	1.025	1.022	1.020	1.018	1.016	1.015	1.014	1.013	1.012	1.011	1.010	1.009	1.009	1.008	1.008	1.007	1.007	1.007	1.053	
Selected	2.273	1.194	1.149	1.115	1.094	1.091	1.082	1.075	1.064	1.029	1.021	1.015	1.015	1.017	1.024	1.043	1.024	1.016	1.015	1.008	1.008	1.008	1.007	1.009	1.008	1.008	1.007	1.007	1.007	1.010	
Cumulative	6.956	3.060	2.563	2.229	1.999	1.827	1.675	1.548	1.439	1.353	1.314	1.287	1.268	1.250	1.229	1.200	1.151	1.124	1.106	1.090	1.082	1.073	1.064	1.056	1.046	1.037	1.033	1.024	1.017	1.010	
Ratio to Ultimate	0.144	0.327	0.390	0.449	0.500	0.547	0.597	0.646	0.695	0.739	0.761	0.777	0.789	0.800	0.814	0.833	0.869	0.890	0.904	0.917	0.925	0.932	0.940	0.947	0.956	0.964	0.968	0.976	0.983	0.990	

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 20

Ultimate Gross Face Value based on Average Gross Face Value
As of 06/30/2019

Notification Year	Ultimate Claims	Selected Average Gross Face Value	Ultimate Gross Face Value (1) x (2)
_____	(1)	(2)	(3)
1989	1	38,000	\$ 38,000
1990	323	147,000	47,481,000
1991	623	126,000	78,498,000
1992	348	127,000	44,196,000
1993	352	109,000	38,368,000
1994	276	105,000	28,980,000
1995	274	117,000	32,058,000
1996	445	108,000	48,060,000
1997	158	82,000	12,956,000
1998	211	91,000	19,201,000
1999	104	112,000	11,648,000
2000	64	82,000	5,248,000
2001	34	135,000	4,590,000
2002	45	102,000	4,590,000
2003	53	73,000	3,869,000
2004	40	86,000	3,440,000
2005	60	117,000	7,020,000
2006	61	136,000	8,296,000
2007	69	115,000	7,935,000
2008	73	145,000	10,585,000
2009	77	142,000	10,934,000
2010	34	117,000	3,978,000
2011	47	117,000	5,499,000
2012	68	117,000	7,956,000
2013	49	121,000	5,929,000
2014	68	124,000	8,432,000
2015	43	127,000	5,461,000
2016	44	131,000	5,764,000
2017	38	131,000	4,978,000
2018	20	131,000	2,620,000
Total	4,102		\$478,608,000

Notes:

1. Column (1) is from Reported Exhibit 28, column (5).
2. Selected average gross face value in column (2) is from Reported Exhibit 22, column (4).

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 21

Ultimate Gross Face Value Based on Bornhuetter-Ferguson Using Average Gross Face Value
As of 06/30/2019

Notification Year	Ultimate Claims	Selected Average Gross Face Value	Expected Ultimate Gross Face Value (1) x (2)	Selected Development Factors	Cumulative Development Factors	Ratio of Cumulative Gross Face Value to Ultimate Gross Face Value 1 / (5)	Ratio of Undeveloped Gross Face Value to Ultimate Gross Face Value 1 - (6)	Undeveloped Gross Face Value (3) x (7)	Cumulative Gross Face Value	Ultimate Gross Face Value (8) + (9)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1989	1	\$ 38,000	\$ 38,000	1.010	1.010	0.990	0.010	\$ 376	\$ 37,526	\$ 37,902
1990	323	147,000	47,481,000	1.007	1.017	0.983	0.017	796,898	46,628,997	47,425,895
1991	623	126,000	78,498,000	1.007	1.024	0.976	0.024	1,853,980	76,660,762	78,514,742
1992	348	127,000	44,196,000	1.009	1.033	0.968	0.032	1,428,013	42,715,328	44,143,342
1993	352	109,000	38,368,000	1.004	1.037	0.964	0.036	1,386,233	36,965,066	38,351,299
1994	276	105,000	28,980,000	1.008	1.046	0.956	0.044	1,280,116	27,608,365	28,888,481
1995	274	117,000	32,058,000	1.009	1.056	0.947	0.053	1,703,820	30,273,474	31,977,293
1996	445	108,000	48,060,000	1.007	1.064	0.940	0.060	2,876,087	45,331,257	48,207,344
1997	158	82,000	12,956,000	1.008	1.073	0.932	0.068	875,945	12,069,770	12,945,715
1998	211	91,000	19,201,000	1.008	1.082	0.925	0.075	1,447,553	17,723,899	19,171,452
1999	104	112,000	11,648,000	1.008	1.090	0.917	0.083	964,860	10,666,865	11,631,725
2000	64	82,000	5,248,000	1.015	1.106	0.904	0.096	504,156	4,739,339	5,243,495
2001	34	135,000	4,590,000	1.016	1.124	0.890	0.110	506,921	4,083,171	4,590,092
2002	45	102,000	4,590,000	1.024	1.151	0.869	0.131	602,050	3,983,987	4,586,037
2003	53	73,000	3,869,000	1.043	1.200	0.833	0.167	644,819	3,215,573	3,860,392
2004	40	86,000	3,440,000	1.024	1.229	0.814	0.186	641,018	2,803,491	3,444,509
2005	60	117,000	7,020,000	1.017	1.250	0.800	0.200	1,403,344	5,601,880	7,005,224
2006	61	136,000	8,296,000	1.015	1.268	0.789	0.211	1,753,400	6,558,865	8,312,265
2007	69	115,000	7,935,000	1.015	1.287	0.777	0.223	1,767,731	6,176,303	7,944,034
2008	73	145,000	10,585,000	1.021	1.314	0.761	0.239	2,530,555	8,039,737	10,570,292
2009	77	142,000	10,934,000	1.029	1.353	0.739	0.261	2,852,042	8,054,352	10,906,394
2010	34	117,000	3,978,000	1.064	1.439	0.695	0.305	1,214,456	3,746,250	4,960,705
2011	47	117,000	5,499,000	1.075	1.548	0.646	0.354	1,945,892	3,324,603	5,270,494
2012	68	117,000	7,956,000	1.082	1.675	0.597	0.403	3,205,984	4,994,087	8,200,071
2013	49	121,000	5,929,000	1.091	1.827	0.547	0.453	2,683,061	4,396,515	7,079,576
2014	68	124,000	8,432,000	1.094	1.999	0.500	0.500	4,213,974	5,944,584	10,158,558
2015	43	127,000	5,461,000	1.115	2.229	0.449	0.551	3,011,466	3,277,236	6,288,702
2016	44	131,000	5,764,000	1.149	2.563	0.390	0.610	3,514,700	3,243,296	6,757,996
2017	38	131,000	4,978,000	1.194	3.060	0.327	0.673	3,351,327	1,888,771	5,240,098
2018	20	131,000	2,620,000	2.273	6.956	0.144	0.856	2,243,330	465,935	2,709,265
Total	4,102		\$478,608,000					\$ 53,204,107	\$431,219,284	\$ 484,423,389

Notes:

1. Column (1) is from Reported Exhibit 28, column (5).
2. Selected average gross face value in column (2) is from Reported Exhibit 22, column (4).
3. Development factors in columns (4) and (5) are selected in Reported Exhibit 19.
4. Cumulative gross face value in column (9) is estimated using values available at April 30, 2019.

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 22

Preliminary Average Gross Face Value
As of 06/30/2019

Notification Year	Ultimate Gross Face Value Based on Development Method (1)	Ultimate Claims (2)	Preliminary Average Gross Face Value (1) / (2) (3)	Selected Average Gross Face Value (4)
1989	\$ 37,901	1	37,901	38,000
1990	47,424,954	323	146,826	147,000
1991	78,515,147	623	126,028	126,000
1992	44,141,583	348	126,844	127,000
1993	38,350,673	352	108,951	109,000
1994	28,884,251	276	104,653	105,000
1995	31,972,763	274	116,689	117,000
1996	48,216,723	445	108,352	108,000
1997	12,944,970	158	81,930	82,000
1998	19,169,043	211	90,849	91,000
1999	11,630,255	104	111,829	112,000
2000	5,243,016	64	81,922	82,000
2001	4,590,103	34	135,003	135,000
2002	4,585,439	45	101,899	102,000
2003	3,858,671	53	72,805	73,000
2004	3,445,541	40	86,139	86,000
2005	7,001,532	60	116,692	117,000
2006	8,316,624	61	136,338	136,000
2007	7,946,624	69	115,168	115,000
2008	10,565,671	73	144,735	145,000
2009	10,896,652	77	141,515	142,000
2010	5,392,561	34	158,605	117,000
2011	5,145,351	47	109,476	117,000
2012	8,364,804	68	123,012	117,000
2013	8,030,630	49	163,890	121,000
2014	11,883,457	68	174,757	124,000
2015	7,306,282	43	169,914	127,000
2016	8,311,189	44	188,891	131,000
2017	5,780,081	38	152,107	131,000
2018	3,240,899	20	162,045	131,000
Total	\$ 491,193,390	4,102		

Notes:

1. Column (1) is from Report Exhibit 17, column (4).
2. Column (2) is from Reported Exhibit 28, column (5).
3. Column (4) is based on column (3) for notification years 1989 - 2009; the rounded average of column (3) from 2000 through the associated year for notification years 2010 - 2016; and the rounded average of column (3) of years 2000 - 2016 for notification years 2017 - 2018.

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 24

Ultimate Disallowed Costs Based on Ratio to Gross Face Value Development
As of 06/30/2019

Notification Year	Ultimate Gross Face Value	Selected Ratio of Disallowed Costs to Gross Face Value	Ultimate Disallowed Costs (1) x (2)
_____	(1)	(2)	(3)
1989	\$ 38,000	0.146	\$ 5,548
1990	47,444,000	0.189	8,966,916
1991	78,509,000	0.178	13,974,602
1992	44,160,000	0.196	8,655,360
1993	38,357,000	0.201	7,709,757
1994	28,918,000	0.200	5,783,600
1995	32,003,000	0.216	6,912,648
1996	48,161,000	0.194	9,343,234
1997	12,949,000	0.148	1,916,452
1998	19,180,000	0.201	3,855,180
1999	11,637,000	0.201	2,339,037
2000	5,245,000	0.201	1,054,245
2001	4,590,000	0.280	1,285,200
2002	4,587,000	0.201	921,987
2003	3,863,000	0.201	776,463
2004	3,443,000	0.201	692,043
2005	7,009,000	0.201	1,408,809
2006	8,308,000	0.250	2,077,000
2007	7,942,000	0.250	1,985,500
2008	10,574,000	0.250	2,643,500
2009	10,912,000	0.250	2,728,000
2010	4,777,000	0.250	1,194,250
2011	5,305,000	0.250	1,326,250
2012	8,174,000	0.250	2,043,500
2013	7,013,000	0.250	1,753,250
2014	10,158,000	0.250	2,539,500
2015	6,289,000	0.250	1,572,250
2016	6,758,000	0.250	1,689,500
2017	5,240,000	0.250	1,310,000
2018	2,709,000	0.250	677,250
Total	\$484,252,000		\$99,140,831

Notes:

1. Column (1) is from Reported Exhibit 16, column (4).
2. Selected ratio in column (2) is based on column (3) of Reported Exhibit 25 for notification years 1989 through 1997. For notification years 1998 - 2000, and 2002 - 2005 the average ratio of all years from Reported Exhibit 25 is used. The ratio for notification year 2001 is calculated by excluding claims with a high gross face value or disallowed cost. The ratio for notification years 2006 - 2018 is based on column (3) from Reported Exhibit 25 using the rounded average of years 2000 - 2014.

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 25

Ratio of Disallowed Costs on Closed Claims to Cumulative Gross Face Value on Closed Claims
As of 06/30/2019

Notification Year	Cumulative Disallowed Costs on Closed Claims	Cumulative Gross Face Value on Closed Claims	Ratio (1) / (2)
_____	(1)	(2)	(3)
1989	\$ 5,486	\$ 37,526	0.146
1990	7,784,266	41,085,587	0.189
1991	11,757,349	66,187,231	0.178
1992	7,601,530	38,689,711	0.196
1993	6,481,011	32,292,044	0.201
1994	4,798,259	23,984,587	0.200
1995	5,366,128	24,896,773	0.216
1996	7,733,461	39,867,838	0.194
1997	1,598,464	10,830,351	0.148
1998	2,505,630	11,794,850	0.212
1999	2,482,745	8,510,640	0.292
2000	928,319	3,521,712	0.264
2001	1,404,409	3,358,579	0.418
2002	419,521	3,116,923	0.135
2003	588,847	2,743,237	0.215
2004	353,629	2,180,932	0.162
2005	423,524	2,963,248	0.143
2006	1,379,015	5,290,833	0.261
2007	901,974	4,470,233	0.202
2008	1,040,193	3,590,956	0.290
2009	760,288	3,347,273	0.227
2010	293,858	1,335,916	0.220
2011	481,990	1,748,108	0.276
2012	543,860	1,707,524	0.319
2013	698,943	1,834,018	0.381
2014	298,795	1,230,936	0.243
2015	229,768	1,680,278	0.137
2016	44,547	594,632	0.075
2017	-	91,747	0.000
2018	-	-	0.000
Total	\$68,905,809	\$342,984,223	0.201

Notes:

1. Disallowed costs on closed claims in column (1) uses values available at April 30, 2019.
2. Gross face value on closed claims in column (2) uses values available at April 30, 2019.
3. The rounded average of column (3) for years 2000 - 2014 is .250. This is used in Reported Exhibit 24, column (2) for notification years 2006 - 2018.

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 26

Ultimate Deductible Recoveries Based on Ratio of Deductible Recoveries to Gross Face Value Less Disallowed Costs
As of 06/30/2019

Notification Year	Ultimate Gross Face Value	Ultimate Disallowed Costs	Ultimate Gross Face Value Less Disallowed Costs (1) - (2)	Ratio of Deductible Recoveries to Total Gross Face Value Less Disallowed Costs	Ultimate Deductible Recoveries (3) x (4)
(1)	(2)	(3)	(4)	(5)	
1989	\$ 38,000	\$ 5,548	\$ 32,452	0.312	\$ 10,125
1990	47,444,000	8,966,916	38,477,084	0.241	9,272,977
1991	78,509,000	13,974,602	64,534,398	0.259	16,714,409
1992	44,160,000	8,655,360	35,504,640	0.260	9,231,206
1993	38,357,000	7,709,757	30,647,243	0.289	8,857,053
1994	28,918,000	5,783,600	23,134,400	0.338	7,819,427
1995	32,003,000	6,912,648	25,090,352	0.310	7,778,009
1996	48,161,000	9,343,234	38,817,766	0.310	12,033,507
1997	12,949,000	1,916,452	11,032,548	0.293	3,232,537
1998	19,180,000	3,855,180	15,324,820	0.377	5,777,457
1999	11,637,000	2,339,037	9,297,963	0.236	2,194,319
2000	5,245,000	1,054,245	4,190,755	0.420	1,760,117
2001	4,590,000	1,285,200	3,304,800	0.499	1,649,095
2002	4,587,000	921,987	3,665,013	0.503	1,843,502
2003	3,863,000	776,463	3,086,537	0.594	1,833,403
2004	3,443,000	692,043	2,750,957	0.640	1,760,612
2005	7,009,000	1,408,809	5,600,191	0.580	3,248,111
2006	8,308,000	2,077,000	6,231,000	0.510	3,177,810
2007	7,942,000	1,985,500	5,956,500	0.498	2,966,337
2008	10,574,000	2,643,500	7,930,500	0.580	4,599,690
2009	10,912,000	2,728,000	8,184,000	0.580	4,746,720
2010	4,777,000	1,194,250	3,582,750	0.580	2,077,995
2011	5,305,000	1,326,250	3,978,750	0.580	2,307,675
2012	8,174,000	2,043,500	6,130,500	0.580	3,555,690
2013	7,013,000	1,753,250	5,259,750	0.580	3,050,655
2014	10,158,000	2,539,500	7,618,500	0.580	4,418,730
2015	6,289,000	1,572,250	4,716,750	0.580	2,735,715
2016	6,758,000	1,689,500	5,068,500	0.580	2,939,730
2017	5,240,000	1,310,000	3,930,000	0.580	2,279,400
2018	2,709,000	677,250	2,031,750	0.580	1,178,415
Total	\$484,252,000	\$99,140,831	\$385,111,169		\$135,050,428

Notes:

1. Column (1) is from Reported Exhibit 16, column (4).
2. Column (2) is from Reported Exhibit 24, column (3).
3. Selected ratio in column (4) is based on column (5) from Reported Exhibit 27 for notification years 1989 - 2004 and 2006 - 2007. For notification years 2005 and 2008 - 2018, column (4) is based on column (5) from Reported Exhibit 27 using the rounded average of years 2000 - 2013.

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 27

Ratio of Deductible Recoveries on Closed Claims to Cumulative Gross Face Value less Disallowed Costs on Closed Claims
As of 06/30/2019

Notification Year	Cumulative Deductible Recoveries on Closed Claims	Cumulative Gross Face Value on Closed Claims	Cumulative Disallowed Costs on Closed Claims	Cumulative Gross Face Value less Disallowed Costs on Closed Claims (2) - (3)	Ratio (1) / (4)
_____	(1)	(2)	(3)	(4)	(5)
1989	\$ 10,000	\$ 37,526	\$ 5,486	\$ 32,040	0.312
1990	8,024,626	41,085,587	7,784,266	33,301,321	0.241
1991	14,099,430	66,187,231	11,757,349	54,429,882	0.259
1992	8,095,615	38,689,711	7,601,530	31,088,181	0.260
1993	7,446,876	32,292,044	6,481,011	25,811,033	0.289
1994	6,475,694	23,984,587	4,798,259	19,186,328	0.338
1995	6,061,900	24,896,773	5,366,128	19,530,645	0.310
1996	9,962,454	39,867,838	7,733,461	32,134,378	0.310
1997	2,703,897	10,830,351	1,598,464	9,231,887	0.293
1998	3,502,385	11,794,850	2,505,630	9,289,220	0.377
1999	1,421,034	8,510,640	2,482,745	6,027,895	0.236
2000	1,089,432	3,521,712	928,319	2,593,393	0.420
2001	974,495	3,358,579	1,404,409	1,954,171	0.499
2002	1,356,671	3,116,923	419,521	2,697,401	0.503
2003	1,279,906	2,743,237	588,847	2,154,389	0.594
2004	1,170,062	2,180,932	353,629	1,827,302	0.640
2005	1,652,506	2,963,248	423,524	2,539,724	0.651
2006	1,995,224	5,290,833	1,379,015	3,911,818	0.510
2007	1,776,262	4,470,233	901,974	3,568,260	0.498
2008	1,747,735	3,590,956	1,040,193	2,550,763	0.685
2009	1,354,952	3,347,273	760,288	2,586,985	0.524
2010	641,643	1,335,916	293,858	1,042,058	0.616
2011	667,164	1,748,108	481,990	1,266,118	0.527
2012	879,040	1,707,524	543,860	1,163,663	0.755
2013	793,285	1,834,018	698,943	1,135,075	0.699
2014	740,730	1,230,936	298,795	932,141	0.795
2015	688,729	1,680,278	229,768	1,450,510	0.475
2016	408,948	594,632	44,547	550,085	0.743
2017	91,747	91,747	-	91,747	1.000
2018	-	-	-	-	0.000
Total	\$87,112,442	\$342,984,223	\$68,905,809	\$ 274,078,413	0.318

Notes:

1. Deductible recoveries on closed claims in column (1) uses values available at April 30, 2019.
2. Gross face value on closed claims in column (2) uses values available at April 30, 2019.
3. Disallowed costs on closed claims in column (3) uses values available at April 30, 2019.
4. The rounded average of column (5) for years 2000 - 2013 is .580. This is used in Reported Exhibit 26, column (4) for notification years 2005, and 2008 - 2018

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Notification Year

Reported Exhibit 28

Summary of Claim Counts
As of 06/30/2019

Notification Year	Closed Claims	Open Claims	Reported Claims (1) + (2)	IBNR Claims	Ultimate Claims (3) + (4)
_____	(1)	(2)	(3)	(4)	(5)
1989	1	0	1	0	1
1990	302	21	323	0	323
1991	593	30	623	0	623
1992	333	15	348	0	348
1993	339	13	352	0	352
1994	256	20	276	0	276
1995	259	15	274	0	274
1996	421	24	445	0	445
1997	151	7	158	0	158
1998	176	35	211	0	211
1999	87	17	104	0	104
2000	61	3	64	0	64
2001	32	2	34	0	34
2002	40	5	45	0	45
2003	48	5	53	0	53
2004	36	4	40	0	40
2005	49	11	60	0	60
2006	53	8	61	0	61
2007	57	12	69	0	69
2008	54	19	73	0	73
2009	54	23	77	0	77
2010	22	12	34	0	34
2011	33	14	47	0	47
2012	43	25	68	0	68
2013	31	18	49	0	49
2014	34	34	68	0	68
2015	25	18	43	0	43
2016	18	26	44	0	44
2017	5	33	38	0	38
2018	0	20	20	0	20
Total	3,613	489	4,102	0	4,102

Note:

1. Column (5) equals column (3), as this analysis is limited to claims reported prior to June 30, 2019.
2. Closed claims in column (1) is estimated using values available at April 30, 2019.
3. Open claims for notification year 2018 in column (2) is estimated using values available at April 30, 2019.

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Release Year - Total (RBCA and Non-RBCA)

Unreported Exhibit 1
Held Claims Removed

Estimated Ultimate Average Loss

As of June 30, 2019

Release Year	Estimated Reported Claims 07/01/19 - 06/30/20 (1)	Undetermined Eligibility Applications as of 06/30/19 (2)	Estimated Approval Percentage (3)	Estimated Additional Claims from Undetermined Eligibility Applications (2) x (3) (4)	Selected Average Loss (5)	Total Ultimate Loss [(1) + (4)] x (5) (6)
ALL	19	62	63%	39	\$ 53,600	\$ 3,108,800

Notes:

- Column (1) is from Unreported Exhibit 2, total column (11).
- Selected average loss in column (5) is based on the volume weighted average of the severities for the 2015 through 2017 years using the Ultimate Loss amounts in Reported Exhibit 1.

Ohio Petroleum Underground Storage Tank Release Compensation Board
By Release Year

Unreported Exhibit 2

Ultimate Claims Based on Bornhuetter-Ferguson Using Exposures and Reported Claims
As of 6/30/2019

Release Year	Reported Claims as of 06/30/19 (1)	Cumulative Development Factors (2)	Ratio to Ultimate 1 / (2) (3)	Reported Claim Ultimate (1) x (2) (4)	Exposures (5)	Ratio of Indicated Claim Frequency (4) / (5) (6)	Selected Claim Frequency (7)	B-F Reported Claim Ultimate (8)	Selected Ultimate Claims (9)	Total IBNR Claims (9) - (1) (10)	Estimated Reported Claims 7/1/19 - 06/30/20 (11)
1988	0	\$ 1.0000	\$ 1.0000	0	0	0.0000	0.0000	0	0	0	
1989	344	1.0000	1.0000	344	50,375	0.0068	0.0068	344	344	0	0
1990	489	1.0000	1.0000	489	49,425	0.0099	0.0099	489	489	0	0
1991	543	1.0000	1.0000	543	45,667	0.0119	0.0119	543	543	0	0
1992	409	1.0000	1.0000	409	41,257	0.0099	0.0099	409	409	0	0
1993	288	1.0000	1.0000	288	38,312	0.0075	0.0075	288	288	0	0
1994	291	1.0000	1.0000	291	34,999	0.0083	0.0083	291	291	0	0
1995	205	1.0000	1.0000	205	32,652	0.0063	0.0063	205	205	0	0
1996	161	1.0000	1.0000	161	31,187	0.0052	0.0052	161	161	0	0
1997	192	1.0000	1.0000	192	29,939	0.0064	0.0064	192	192	0	0
1998	178	1.0000	1.0000	178	27,807	0.0064	0.0064	178	178	0	0
1999	65	1.0000	1.0000	65	24,922	0.0026	0.0026	65	65	0	0
2000	36	1.0000	1.0000	36	24,732	0.0015	0.0015	36	36	0	0
2001	40	1.0000	1.0000	40	24,413	0.0016	0.0016	40	40	0	0
2002	43	1.0000	1.0000	43	24,174	0.0018	0.0018	43	43	0	0
2003	57	1.0000	1.0000	57	23,893	0.0024	0.0024	57	57	0	0
2004	41	1.0000	1.0000	41	23,461	0.0017	0.0017	41	41	0	0
2005	67	1.0000	1.0000	67	23,348	0.0029	0.0029	67	67	0	0
2006	57	1.0000	1.0000	57	23,102	0.0025	0.0025	57	57	0	0
2007	72	1.0000	1.0000	72	22,766	0.0032	0.0032	72	72	0	0
2008	73	1.0000	1.0000	73	22,347	0.0033	0.0033	73	73	0	0
2009	59	1.0000	1.0000	59	22,047	0.0027	0.0027	59	59	0	0
2010	41	1.0000	1.0000	41	21,771	0.0019	0.0019	41	41	0	0
2011	56	1.0000	1.0000	56	21,509	0.0026	0.0026	56	56	0	0
2012	61	1.0000	1.0000	61	21,281	0.0029	0.0029	61	61	0	0
2013	61	1.0000	1.0000	61	21,072	0.0029	0.0029	61	61	0	0
2014	58	1.0000	1.0000	58	20,947	0.0028	0.0028	58	58	0	0
2015	34	1.0000	1.0000	34	20,871	0.0016	0.0016	34	34	0	0
2016	44	1.0000	1.0000	44	20,673	0.0021	0.0021	44	44	0	0
2017	30	1.0000	1.0000	30	20,581	0.0015	0.0015	30	30	0	0
2018	10	2.1441	0.4664	21	20,398	0.0011	0.0017	29	29	19	19
Total	4,105			4,116				4,124			

- Notes:
- Cumulative development factors in column (2) are selected in Unreported Exhibit 4.
 - Column (8) is (column (7) x column (5)) x (1 - 1 / column (2)) + column (1).
 - Column (11) is (prior year column (3) - column (3)) / (1 - 1 / column (3)) x column (10) for release year 2018 only. Other release years are equal to 0 because of the Board's one-year reporting requirement.

